

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University,

Madurai *Re-accredited with 'A' Grade (3rd Cycle) by NAAC*

VIRUDHUNAGAR - 626 001



CURRICULA PROGRAMMES

(For those who join in 2018 - 2019 and after)

S.No.	PROGRAMME	Page No.
I. UG PROGRAMME STRUCTURE - II & III YEAR		
1.	PROGRAMME OUTCOMES(PO)	6
2.	COURSE OUTCOMES (CO)	7
	B. A. TAMIL	1 - 35
	B. A. ENGLISH	36 – 71
	B. A. HISTORY	72 – 101
	B. SC. MATHEMATICS	102 – 135
	B. SC. PHYSICS	136 – 167
	B. SC. CHEMISTRY	168 – 192
	B. SC. ZOOLOGY	193 – 220
	B. SC. HOME SCIENCE NUTRITION & DIETETICS	221 – 247
	B. SC. BIOCHEMISTRY	248 – 277
	B. SC. MICROBIOLOGY	278 – 302
	B. SC. BIOTECHNOLOGY	303 – 327
	B. SC. COSTUME DESIGN & FASHION	328 – 350
	B. SC. COMPUTER SCIENCE	351 – 386
	B. SC. INFORMATION TECHNOLOGY	387 – 410
	BCA	411 – 444
	B. COM.	445 – 480
	B. COM. (COMPUTER APPLICATIONS)	481 – 513
	B. COM. (PROFESSIONAL ACCOUNTING)	514 - 549
	BBA	550 - 581

II. PG PROGRAMME STRUCTURE - II YEAR		
3.	PROGRAMME OUTCOMES(PO)	582
4.	COURSE OUTCOMES (CO)	
	M.A. TAMIL	583 – 593
	M.A ENGLISH	594 – 603
	M.A HISTORY	604 – 616
	M. SC. MATHEMATICS	617 – 627
	M. Sc. PHYSICS	628 - 640
	M. Sc. CHEMISTRY	641 – 648
	M. Sc. ZOOLOGY	649 – 658
	M. Sc. BIOCHEMISTRY	659 – 668
	M. Sc. HOME SCIENCE	669 – 677
	M. Sc. COMPUTER SCIENCE	678 – 689
	M. Sc. INFORMATION TECHNOLOGY	690 – 694
	M. COM	695 – 707
	MCA	708 – 732
	MBA	733 - 765
III. UG PROGRAMME STRUCTURE – I Year		
5.	PROGRAMME OUTCOMES(PO)	766
6.	COURSE OUTCOMES (CO)	
	B. A. TAMIL	767 – 780
	B. A. ENGLISH	781 – 790
	B. A. HISTORY	791 – 800
	B. Sc. MATHEMATICS	801 – 812

	B. Sc. PHYSICS	813 – 824
	B. Sc. CHEMISTRY	825 – 839
	B. Sc. ZOOLOGY	840 – 851
	B. Sc. HOME SCIENCE NUTRITION & DIETETICS	852 – 866
	B. Sc. BIOCHEMISTRY	867 – 878
	B. Sc. MICROBIOLOGY	879 – 890
	B. Sc. BIOTECHNOLOGY	891 – 902
	B. Sc. COSTUME DESIGN & FASHION	903 – 914
	B. Sc. COMPUTER SCIENCE	915 – 926
	B. Sc. INFORMATION TECHNOLOGY	927 – 940
	BCA	941 – 953
	B. COM.	954 – 961
	B. COM. (COMPUTER APPLICATIONS)	968 – 981
	BBA	982 - 991
IV. PG PROGRAMME STRUCTURE – I Year		
7.	PROGRAMME OUTCOMES(PO)	992 – 993
8.	COURSE OUTCOMES (CO)	
	M.A. TAMIL	994 – 1009
	M.A ENGLISH	1010 - 1025
	M.A HISTORY	1026 – 1041
	M. SC. MATHEMATICS	1042 – 1057
	M. Sc. PHYSICS	1058 – 1073
	M. Sc. CHEMISTRY	1074 – 1089

	M. Sc. ZOOLOGY	1090 – 1105
	M. Sc. BIOCHEMISTRY	1106 – 1122
	M. Sc. HOME SCIENCE	1123 – 1136
	M. Sc. COMPUTER SCIENCE	1137 – 1154
	M. Sc. INFORMATION TECHNOLOGY	1155 – 1172
	M. COM	1173 – 1188
	MCA	1189 – 1207
	MBA	1208 - 1223

UG Programmes

PROGRAMME OUTCOMES

The students will be able to

- get an in-depth understanding of the subject.
- develop an effective oral and written communication.
- have wider social mobility into reality.
- outsource the acquired knowledge with social concern and responsibility.
- have a wholesome personality by imbibing ethical and traditional values.
- strengthen the passion for learning with vigour and self-motivation.

B.A. Tamil

PROGRAMME SPECIFIC OUTCOMES

- ✚ பண்டைத் தமிழ் இலக்கியங்களின் வழித் தமிழரின் பழம்பெருமை மற்றும் பண்பாடு, பாடுபொருட்களை அறியச் செய்தல்.
- ✚ இலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களைப் புலப்படுத்துதல்.
- ✚ சமயச் சிந்தனைகளுக்கும் மொழிக்கும் உள்ள தொடர்புகளை உணர்த்துதல்.
- ✚ இலக்கியங்களில் இடம்பெறும் மாந்தர்களின் பண்புகளையும் வாழ்வியலையும், நடைமுறை வாழ்வியலோடு ஒப்பிட்டு ஆராய்தல்.
- ✚ கலை, இலக்கியம், அறிவியல் தொடர்புகளை மதிப்பிடுதல். இலக்கிய நயங்களைப் பாராட்டுதல்.
- ✚ இலக்கண மரபுகளையும் மாற்றங்களையும் வளர்நிலைகளையும் இனம் காணுதல்.
- ✚ தமிழை மொழிபெயர்ப்பு, கலைச்சொல்லாக்கம், தகவல் தொடர்பு, இணையம் போன்ற பத்துறைகளிலும் கொண்டு செல்லுதல்.
- ✚ படைப்பாற்றலை மேம்படுத்துதல்.
- ✚ வேலை வாய்ப்பிற்கும் உயர்கல்விக்கும் வழிவகுத்தல்.

மூன்றாம் பருவம்	தாள் : 3 - பொதுத்தமிழ்	நேரம் / வாரம் : 6	
பகுதி - 1		தர மதிப்பு : 3	
பாடக்குறியீட்டு எண் 18UTAG31		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழ்க் காப்பிய வகைமைகளை எடுத்துரைப்பர்
- காப்பிய அமைப்பு மரபு சிறப்பியல்புகளை இனங்காண்பர்
- காப்பிய இலக்கியங்களின் நயங்களைப் பாராட்டுவர்
- காப்பியங்களின் வாயிலாக, சமயக் கருத்துக்களை மதிப்பிடுவர்
- காப்பிய மாந்தர்களின் இயல்புகளை, மனித வாழ்வியலோடு ஒப்பிட்டு ஆராய்வர்
- நாடகம் படைப்பர்

Course Code 18UTAG31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	S	M	S	S
CO 2	S	S	M	S	S	S	M	S	S
CO 3	S	S	M	S	S	S	M	S	S
CO 4	S	S	S	S	M	M	M	S	S
CO 5	S	S	M	S	S	S	M	S	S
CO 6	S	S	M	S	S	S	S	S	S

மூன்றாம் பருவம்	பக்தி இலக்கியம்	நேரம் / வாரம் : 5	
Core Course - 5		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC31		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- சமயங்களுக்கும் பக்திநெறிக்கும் உள்ள தொடர்பினை விளக்குவர்.
- தனி மனித வாழ்வியல் ஒழுக்கங்களை உணர்த்துவர்
- அடியவர்களின் பக்திநெறிகளை இக்காலச் சூழலோடு பொருத்தி ஆய்வர்.
- பக்தி இலக்கியக்காலச் சூழலை மதிப்பிடுவர்.
- இலக்கிய நயம் பாராட்டுவர்.

Course Code 18UTAC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	M	M	S
CO 2	S	S	S	S	M	S	M	M	S
CO 3	S	S	S	S	M	M	S	M	S
CO 4	S	S	M	S	S	M	S	M	S
CO 5	S	S	S	S	S	S	M	S	S

மூன்றாம் பருவம்	இலக்கணம் - அகப்பொருள்	நேரம் / வாரம் : 5	
Core Course -6		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC32		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அக வாழ்க்கையின் இலக்கணத்தைக் கற்பர்.
- அக வாழ்வின் மேன்மையினை உணர்வர்.
- நல்லொழுக்கம், கூடா ஒழுக்கம் குறித்த வேறுபாடுகளை அறிவர்.
- இல்லறத்தார் துறவறத்தார் கடமைகளைத் தெரிந்து கொள்வர்.
- தனிமனித, சமுதாய அக ஒழுக்கங்களைப் புரிந்து கொள்வர்.
- சுற்றுச்சூழலுக்கும் வாழ்வியலுக்கும் உள்ள தொடர்பினை உணர்வர்.

Course Code 18UTAC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	S	M	S	S
CO 2	S	M	M	S	M	S	S	S	S
CO 3	S	S	M	S	S	M	S	S	S
CO 4	S	S	M	S	S	S	M	S	S
CO 5	S	S	M	S	S	L	S	S	S
CO 6	S	S	S	M	M	S	L	S	S
CO 7	S	S	S	S	S	M	S	S	S

மூன்றாம்பருவம்	தனிப்பாடல் இலக்கியம்	நேரம் / வாரம் : 5	
ALLIED Course -3		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAA31		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தனிப்பாடலில் இலக்கியங்களின் காலச் சூழல்களை வெளிப்படுத்துவர்
- புலவர்கள் எடுத்துரைக்கும் வாழ்வியல் நெறிகளை விவரிப்பர்
- தனிப்பாடல்கள் பாடியுள்ள புலவர்களின் புலமைத்திறத்தினை இனங்காண்பர்.
- தனிப்பாடல்கள் வழி மன்னர்களுக்கும் புலவர்களும் உள்ள தொடர்பினை மதிப்பிடுவர்
- தனிப்பாடல்கள் வழி இறையாற்றல்களை ஆராய்வர்.
- தனிப்பாடல்களில் அமைந்துள்ள இலக்கிய நயங்களைப் பாராட்டுவர்.

Course Code 18UTAA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	S	M	S	S
CO 2	S	S	S	S	M	M	M	S	S
CO 3	S	S	M	S	S	S	M	S	S
CO 4	S	S	M	S	M	M	M	S	S
CO 5	S	M	S	S	M	S	M	S	S
CO 6	S	S	S	S	S	S	M	S	S

மூன்றாம் பருவம்	இக்கால நீதி இலக்கியம்	நேரம் / வாரம் : 2	
NMEC - I		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UTAN31		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அற இலக்கிய வடிவங்களைக் கற்பர்.
- வாழ்வியல் அறங்களை அறிவர்.
- அறவழியைப் பின்பற்றுவர்.
- காலச் சூழலுக்கேற்ப அறநெறிகள் மாறும் விதத்தைச் சான்றுகளுடன் உணர்ந்து கொள்வர்.

Course Code 18UTAN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S	M	L	L	S	S
CO 2	S	M	L	S	L	L	L	S	S
CO 3	S	S	L	S	L	L	M	S	S
CO 4	S	S	L	S	L	M	L	S	S
CO 5	S	S	L	S	L	M	L	S	S

மூன்றாம் பருவம்	அடிப்படைத் தமிழ் - எழுத்தறிதல்	நேரம் / வாரம் : 2	
NMEC - I		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UBTN31		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழ் மொழியின் எழுத்துக்களை அறிவர்.
- தமிழ் மொழியின் எழுத்துக்களின் வகையினைத் தெரிந்து கொள்வர்.
- தமிழ் மொழியின் வடிவம் மற்றும் ஒலிக்கும் முறை குறித்தும் உணர்ந்து கொள்வர்.

Course Code 18UBTN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	L	-	M	S	-	S
CO 2	M	L	-	-	M	-	S	-	M
CO 3	M	M	-	-	-	M	-	-	-
CO 4	S	S	-	-	L	-	-	-	-
CO 5	-	L	-	-	-	L	S	-	-
CO 6									
CO 7									

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

நான்காம் பருவம்	தாள்:4 - பொதுத்தமிழ்	நேரம் / வாரம் : 6	
பகுதி I		தரமதிப்பு : 3	
பாடக்குறியீட்டு எண் : 18UTAG41		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- சங்க இலக்கியங்களின் வழித் தமிழரின் பழம்பெருமைகளையும் பண்பாடுகளையும் அறியச் செய்தல்.
- அகம்,புறம் சார்ந்த வாழ்வியல் முறைகளை விளக்குதல்.
- சங்க இலக்கியங்கள் சுட்டும் வாழ்வியல் மரபுகளுக்கும்
- இக்காலவாழ்வியல் மரபுகளுக்கும் உள்ள வேறுபாடுகளைச் சுட்டுதல்.
- சங்க இலக்கியக் கூறுகளின் இலக்கண மரபுகளை எடுத்துரைத்தல்.
- காலந்தோறும் உரைநடை இலக்கியங்களின் வளர்ச்சிநிலைகளைக் கற்பித்தல்.
- கட்டுரை எழுதப் பயிற்சியளித்தல்.

Course Code 18UTAG41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	M	S	M	S
CO 2	S	S	S	S	S	M	S	M	S
CO 3	S	S	S	S	M	S	S	S	S
CO 4	S	S	S	S	M	S	S	S	S
CO 5	S	S	S	S	M	S	S	S	S
CO 6	S	S	S	S	S	S	S	S	S
CO 7	S	S	S	S	S	S	S	S	S

நான்காம் பருவம்	காப்பிய இலக்கியம்	நேரம் / வாரம் : 5	
Core Course -7		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC41		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழ்க் காப்பியங்களின் வகைகளை எடுத்துரைப்பர்
- காப்பிய அமைப்பினை இனம் காண்பர்.
- காப்பிய மரபுகளைப் மதிப்பிடுவர்.
- காப்பிய மாந்தர்களை, மனித வாழ்வியலோடு ஒப்பிடுவர்.
- காப்பியங்களின் இலக்கிய நயங்களைப் புலப்படுத்துவர்

Course Code 18UTAC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	M	S	S
CO 2	S	S	S	S	S	S	M	S	S
CO 3	S	S	S	S	S	S	M	S	S
CO 4	S	S	S	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S	S	S

நான்காம் பருவம்	இலக்கணம் - புறப்பொருள்	நேரம் / வாரம் : 5	
Core Course - 8		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC42		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- புற வாழ்வியலின் இலக்கணத்தைக் கட்டுவர்.
- சங்க கால மக்களின் போர் முறைகள் மற்றும் வாழ்வியலை விளக்குவர்.
- மறத்திலும் அறம் போற்றிய, தமிழர் மாண்புகளை மதிப்பிடுவர்.
- தனி மனித, சமுதாயப் புற ஒழுக்கங்களை இனங்காண்பர்.

Course Code 18UTAC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	L	S	M	S	M	--	M
CO 2	S	S	M	S	M	S	M	--	L
CO 3	S	S	M	S	M	M	M	M	--
CO 4	S	S	L	S	M	S	M	--	M
CO 5	S	S	S	S	M	S	M	L	L
CO 6	S	S	M	S	M	S	M	S	M
CO 7									

நான்காம்பருவம்	நாட்டுப்புறவியல்அறிமுகம்	நேரம் / வாரம் : 5	
Allied Course - 4		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAA41		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- நாட்டுப்புறப்பாடல்களின் தொன்மையை அறிந்து கொள்வர்.
- நாட்டுப்புற மக்களின் மனநிலையைப் புரிந்து கொள்வர்.
- நாட்டுப்புறப்பாடல்களின் பண்பாட்டுக் கூறுகளை உணர்வர்.
- நாட்டுப்புறக் கதைகளில் மக்களின் வாழ்வியலைத் தெரிந்து கொள்வர்.
- நாட்டுப்புறக் கதைகள் வழி தனிமனித ஒழுக்கத்தை அறிவர்.

Course Code 18UTAA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	M	S	S
CO 3	S	S	M	S	S	S	S	S	S
CO 4	S	S	L	S	M	S	S	S	S
CO 5	S	S	S	S	M	M	M	S	S
CO 6	S	S	M	S	M	M	S	S	S
CO 7	S	S	S	M	L	M	M	M	S

நான்காம் பருவம்	உரைநடைஇலக்கியம்	நேரம் / வாரம் : 2	
NMEC - 2		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UTAN41		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- உரைநடையின் தன்மையை அறிவர்.
- உரைநடையின் நடைச்சிறப்பைப் புரிந்து கொள்வர்.
- உரைநடை உத்திகளைத் தெரிந்து கொள்வர்.
- பல்துறை சார்ந்த தமிழின் உரைத்தன்மையை உணர்வர்.

Course Code 18UTAN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	M	S	S	S
CO 2	S	S	S	M	S	S	S	M	S
CO 3	S	S	M	S	S	M	M	S	S
CO 4	S	S	M	S	S	S	S	S	S
CO 5	S	M	M	S	S	M	S	S	S
CO 6	S	S	S	S	S	S	S	S	S

நான்காம் பருவம்	அடிப்படைத் தமிழ் - மொழித்திறனறிதல்	நேரம் / வாரம் : 2	
NMEC - 2		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UBTN41		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு மாணவர்கள்

- தமிழ்மொழிச் சொற்களின் வகைகளை அறிவர்.
- மொழிக்கு முதல், இறுதியில் வரும் எழுத்துக்களைத் தெரிந்து கொள்வர்.
- தமிழ் மொழியில் வாக்கியம் அமைக்கும் முறையினைக் கற்றுக் கொள்வர்.

Course Code 18UBTN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	M	-	L	-	M	S	-	S
CO 2	M	L	-	-	M	-	S	-	M
CO 3	S	S	-	-	-	M	-	-	-
CO 4	S	S	-	-	L	S	-	S	-
CO 5	-	L	-	-	-	L	S	S	-

ஐந்தாம் பருவம்	சிற்றிலக்கியம்	நேரம் / வாரம் : 5	
Core Course -9		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் : 18UTAC51		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- சிற்றிலக்கியங்களின் வகைகளையும், அதன் வளர்ச்சி நிலைகளையும் எடுத்துரைப்பர்.
- சிற்றிலக்கியங்களின் பாடு பொருள்களைக் காலக் கண்ணோட்டத்தோடு ஆராய்வர்.
- சிற்றிலக்கியகால மக்களின் வாழ்வியல் நிலைப்பாடுகளைச் சமூக அக்கறை உணர்வோடு மதிப்பிடுவர்.
- சிற்றிலக்கியங்கள் பக்தி உணர்வின் மூல வேராக விளங்கிய தன்மையினை இனங்காண்பர்.
- சிற்றிலக்கியங்கள் புலப்படுத்தும் இலக்கிய நயத்தினை மதிப்பிடுவர்.

Course Code 18UTAC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	M	S	S
CO 2	S	S	S	S	S	S	M	S	S
CO 3	S	S	S	S	S	S	S	S	S
CO 4	S	S	S	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S	S	S

ஐந்தாம் பருவம்	இலக்கணம் - யாப்பு	நேரம் / வாரம் : 6	
Core Course – 10		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC52		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தொன்மை வாய்ந்த யாப்பு இலக்கணத்தை வெளிப்படுத்துவர்.
- செய்யுளுக்கு வடிவம் தரும் இலக்கண முறைகளை மதிப்பிடுவர்.
- இலக்கியங்கள் படைப்பதற்குரிய வழிமுறைகளைப் புலப்படுத்துவர்.
- செய்யுள் உறுப்புக்கள், அமைப்புக்கள் மற்றும் பாவகைகளை ஆராய்வர்.
- மரபுக் கவிதைகள் புனைவதற்குரிய இலக்கணங்களை இனம் காண்பர்.
- மரபுக் கவிதைகளைப் படைப்பர்.

Course Code 18UTAC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	S	S	S	S	S
CO 2	S	S	M	M	S	S	M	S	S
CO 3	M	M	S	S	L	S	S	S	S
CO 4	S	S	M	S	L	S	S	S	S
CO 5	S	S	M	S	S	M	S	S	S
CO 6	S	M	S	L	M	S	S	S	S
CO 7	S	M	S	M	M	M	M	S	S

ஐந்தாம் பருவம்	தமிழ் இலக்கிய வரலாறு	நேரம் / வாரம் : 5	
Core Course - 11		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC53		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- பண்டைத்தமிழர்களின் வரலாற்றைக் கால வரிசைப்படுத்துவர்.
- சமயங்கள் இலக்கியத்திற்கு ஆற்றிய தொண்டினை எடுத்துரைப்பர்.
- காலந்தோறும் இலக்கிய வளர்நிலைகளை ஆராய்வர்.
- புலம்பெயர் இலக்கியங்களின் தன்மைகளை உணர்த்துவர்.
- வரலாற்றுப் பதிவுகளின் முக்கியத்துவத்துவத்தையும் பயன்களையும் மதிப்பிடுவர்.

Course Code 18UTAC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	M	M	S	S	S
CO 2	S	S	S	S	M	S	S	S	S
CO 3	M	M	S	S	M	S	S	S	S
CO 4	M	S	M	S	S	M	M	S	S
CO 5	S	S	M	S	M	S	S	S	S

ஐந்தாம் பருவம்	திறனாய்வியல்	நேரம் / வாரம் : 5	
CORE COURSE -12		தர மதிப்பு: 4	
பாடக்குறியீட்டு எண்: 18UTAC54		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு மாணவர்கள்,

- இலக்கியத்திறனாய்வு மற்றும் இலக்கிய வகைகளை எடுத்துரைப்பர்.
- பண்டை இலக்கண இலக்கிய வகைமைகளை அடையாளப்படுத்துவர்.
- தற்கால இலக்கிய மரபுகளையும் உத்திகளையும் ஆராய்வர்.
- இலக்கியத்தின் அடிப்படைக்கூறுகளையும் பயன்களையும் பட்டியலிடுவர்.
- இலக்கிய இயக்கங்களை மதிப்பிடுவர்.

Course Code 18UTAC54	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	L	M	S	S
CO 2	S	S	M	S	S	S	M	S	S
CO 3	S	S	M	S	S	L	M	S	S
CO 4	S	S	S	S	S	L	M	S	S
CO 5	S	S	M	S	S	L	L	S	S

ஐந்தாம் பருவம்	இந்திய மொழி இலக்கியம்	நேரம் / வாரம் : 5	
DSEC – 1		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAE51		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- இந்திய மக்களின் பண்பாடு. கலாச்சாரங்களை நினைவுபடுத்துவர்.
- பிறமொழி இலக்கியங்களின் பண்பாட்டுக்கூறுகளை எடுத்துரைப்பர்.
- தமிழ்மொழி இலக்கியங்களோடு பிற மொழி இலக்கியங்களை ஒப்பிட்டுத் திறனாய்வு செய்வர்.
- மொழிபெயர்ப்புத் திறனின் பயன்களை விளக்குவர்.
- இந்தியமொழி இலக்கியங்களை உலக மொழிகளோடு இணைத்து மதிப்பிடுவர்.
- படைப்பாற்றலை வெளிப்படுத்துவர்.

Course Code 18UTAE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	M	S	S	S	S	M
CO 2	S	S	-	S	S	L	S	L	M
CO 3	S	S	M	S	S	M	M	S	L
CO 4	S	S	-	L	S	S	S	S	-
CO 5	S	S	L	M	S	S	S	S	-
CO 6	S	S	-	L	S	S	S	S	L

ஐந்தாம் பருவம்	அறிவியல்த் தமிழ்	நேரம் / வாரம் : 5	
DSEC – 1		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் : 18UTAE52		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அறிவியல்த் தமிழை விளக்குவர்.
- தமிழ்வழியில் அறிவியல்க் கல்வி: அதன் பயன்களை எடுத்துரைப்பர்.
- அறிவியற் சொற்களுக்கான கலைச்சொற்களை எழுதுவர்.
- தமிழிரின் அறிவியற் சிந்தனைகளை மதிப்பிடுவர்.
- தமிழ் இலக்கியத்தில் உள்ள அறிவியலக் கூறுகளை ஆராய்வர்.
- அறிவியல்க் கூறுகள் அடங்கிய நூல்களை எழுதும் முறைகளை விவரிப்பர்.

Course Code 18UTAE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	L	S	M	S	S	S
CO 2	S	S	S	L	S	S	S	M	S
CO 3	L	M	S	M	S	S	S	S	S
CO 4	S	S	L	M	S	M	S	S	S
CO 5	S	S	M	S	S	S	S	S	S
CO 6	S	S	L	M	S	S	S	S	S

ஐந்தாம் பருவம்	தொல்லியல்	நேரம் / வாரம் : 5	
DSEC – 1		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAE53		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- மனித இனத்தின் புராதன வரலாற்றை அறிந்து கொள்வர்.
- தொல்லியல் ஆய்வுகளை எவ்வாறு மேற்கொள்ளலாம் என உணர்வர்.
- தொல்லியல்த் துறையின் அறிவியல் நோக்கை மாணவர்கள் புரிந்து கொள்வர்.
- அகழாய்வு செய்வதின் அவசியத்தை உணர்வர்.
- பழமை வாய்ந்த பொருட்களைப் பாதுகாக்கும் முறைகள் குறித்துத் தெளிவாகப் புரிந்து கொள்வர்.
- இலக்கியப் புராதனத்தினை ஆய்வு செய்ய, மாணவர்கள் ஊக்கம் பெறுவர்.

Course Code 18UTAE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	S	M	S	S	S
CO 2	S	S	M	M	S	S	S	S	S
CO 3	M	M	S	S	L	M	S	S	S
CO 4	S	S	M	S	L	S	S	S	S
CO 5	S	S	M	S	S	S	S	S	S
CO 6	S	M	S	L	M	S	S	S	S
CO 7	S	M	S	M	M	M	S	S	S

ஐந்தாம் பருவம்	ஆளுமை மேம்பாடு	நேரம் / வாரம் : 2	
SEC – 3		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UTAS51		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- ஆளுமைப் பண்புகளை விளக்குவர்.
- ஆளுமைக் கோட்பாடுகளைப் பட்டியலிடுவர்.
- ஆளுமைக்கான தகுதிகளை எடுத்துரைப்பர்.
- ஆளுமைத் திறன்களை மதிப்பிடுவர்.
- ஆளுமை மேம்பாட்டிற்கான வழிமுறைகளை விவரிப்பர்.
- தனிமனித ஆளுமைப் பண்பினை மேம்படுத்தும் உளவியல்ச் சிந்தனைகளை அறிவிப்பர்.

Course Code 18UTAS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	S	M	M	L	S	S
CO 2	M	S	M	S	S	S	L	S	S
CO 3	S	S	L	S	S	S	S	S	S
CO 4	S	S	L	S	S	S	S	S	S
CO 5	S	S	M	S	S	S	S	S	S
CO 6	S	S	M	S	M	M	S	S	S

ஆறாம் பருவம்	சங்க இலக்கியம்	நேரம் / வாரம் : 6	
Core Course – 13		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 18UTAC61		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- சங்க இலக்கியங்களின் செவ்வியல்த் தன்மைகளை எடுத்துரைப்பர்.
- பண்டைத் தமிழர் வாழ்வியல் மற்றும் பண்பாட்டு மரபுகளை அறிந்து கொள்வர்.
- சங்க கால மாந்தர்களின் அக, புற வாழ்வியல் ஒழுக்கங்களை இனங் காண்பர்.
- புலவர்-புரவலர்களின் வாழ்வியல் உறவுகளை மதிப்பிடுவர்.
- இலக்கிய நயங்களைப் பாராட்டுவர்.

Course Code 18UTAC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	M	S	S
CO 2	S	S	M	S	M	S	M	S	S
CO 3	S	S	S	S	S	M	M	S	S
CO 4	S	S	S	S	M	S	M	S	S
CO 5	S	S	S	S	S	S	M	S	S

ஆறாம் பருவம்	இலக்கணம் - அணி	நேரம் / வாரம் : 6	
Core Course – 14		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAC62		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- இலக்கண வகைமைகளை எடுத்துரைப்பர்
- அணிகளை வகைப்படுத்துவர்
- அணிகளை இலக்கியங்களோடு பொருத்திக் காண்பர்.
- இலக்கியங்களின் நயங்களைப் பாராட்டுவர்
- இலக்கியங்களில் இடம்பெறும் அணிகளை இனம் காண்பர்.

Course Code 18UTAC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	M	S	S
CO 2	S	S	M	S	S	S	S	S	S
CO 3	S	S	S	S	S	S	M	S	S
CO 4	S	S	S	S	S	S	S	S	S
CO 5	S	S	S	S	S	S	S	S	S

ஆறாம் பருவம்	தமிழின் செம்மொழிப் பண்புகள்	நேரம் / வாரம் : 6	
DSEC -2		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAE61		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழின் தொன்மையினை எடுத்துரைப்பர்.
- வாழ்வியல் நெறிகளைச் செவ்வியல் இலக்கியங்கள் வழிப் புலப்படுத்துவர்.
- செவ்வியல் இலக்கியங்களைப் பாடியுள்ள புலவர்களின் புலமைத்திறத்தை மதிப்பிடுவர்.
- செவ்வியல் இலக்கியங்கள் வழித் தமிழின் பிற மொழித் தாக்கமில்லாத தன்மையினை ஆராய்வர்.
- செவ்வியல் இலக்கியங்கள் வழித் தமிழ் மொழியின் மொழிக்கோட்பாட்டினைப் பட்டியலிடுவர்.
- செவ்வியல் இலக்கியங்களின் வழித் தமிழின் தாய்மைத் தன்மையினை இனம் கண்டு வெளிப்படுத்துவர்.

Course Code 18UTAE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	L	M	S
CO 2	S	S	S	S	S	S	L	M	S
CO 3	S	S	S	S	M	S	M	M	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	M	S	S	S	S	S	S	L	S
CO 6	S	S	S	S	S	S	M	M	S

ஆறாம் பருவம்	விளம்பரக்கலை	நேரம் / வாரம் : 6	
DSEC – 2		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAE62		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- விளம்பரத்தின் இன்றியமையாமையை எடுத்துரைப்பர்.
- விளம்பரத்தைக் கையாளும் உத்திகளைப் புலப்படுத்துவர்.
- விளம்பரங்களின் நோக்கத்தையும், அதன் வகைகளையும் பட்டியலிடுவர்.
- விளம்பரம் மக்களைச் சென்றடைதல் மற்றும் விளம்பரத்திற்கான மொழி நடைகள் ஆகியவற்றை மதிப்பிடுவர்.
- தமிழ் வார இதழ்களில் விளம்பரம் அமையும் பாங்கினையும் அதன் பயன்பாட்டையும் ஆராய்வர்.
- இலக்கிய வளர்ச்சியில் விளம்பரங்களின் தன்மையும், போக்கும் அமைந்துள்ள பாங்கை விவரிப்பர்.
- வேலை வாய்ப்புக்கும், உயர் கல்விக்கும் வழி பெறுவர்.

Course Code 18UTAE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S	S	S
CO 3	S	S	M	M	S	S	S	S	S
CO 4	S	S	M	S	M	S	S	S	S
CO 5	S	S	M	S	M	S	S	S	S
CO 6	S	S	M	S	S	M	S	S	S
CO 7	M	S	M	M	S	S	S	S	S

ஆறாம் பருவம்	ஒப்பிலக்கியம்	நேரம் / வாரம் : 6	
DSEC -2		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் : 18UTAE63		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- உலக இலக்கியங்கள் குறித்த அறிமுகங்களை எடுத்துரைப்பர்.
- புதிய துறையின் கொள்கைகளைப் புலப்படுத்துவர்.
- உலக இலக்கியக் கோட்பாடுகளை இனம் காண்பர்.
- கலையும் மனித இனமும் ஒருமையுடையனவாய் இருப்பதை மதிப்பிடுவர்.
- உலக இலக்கியங்கள் குறித்த கவிஞர்களின் ஒருமைத் தன்மையை ஒப்பிட்டு ஆய்வர்.
- ஒப்பிலக்கியங்கள் வழித் தமிழ் மொழியின் புதிய ஆய்வுக்களங்களை அறிந்து வெளிப்படுத்துவர்.

Course Code 18UTAE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	M	L	S
CO 2	S	S	S	S	S	S	S	M	S
CO 3	S	S	S	S	S	S	S	M	S
CO 4	S	S	S	S	S	S	S	M	S
CO 5	S	S	S	S	S	S	S	S	S
CO 6	M	S	M	S	S	S	S	S	S

ஆறாம் பருவம்	கோயிறு கலைகள்	நேரம் / வாரம் : 6	
DSEC -3		தர மதிப்பு: 5	
பாடக்குறியீட்டு எண் : 18UTAE64		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- பழந்தமிழரின் கலை நாட்டத்தை எடுத்துரைப்பர்.
- கலைகளை வளர்ப்பதில் அரசர்களின் பங்களிப்பினை வெளிப்படுத்துவர்.
- மக்களின் வாழ்வியல், நாகரிகம், பண்பாடு குறித்து ஆராய்வர்.
- பண்பாட்டு மாற்றங்களையும் காலச்சூழலையும் ஒப்பிடுவர்.
- கலை நயங்களைப் பாராட்டுவர்.

Course Code 18UTAE64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S	S	M
CO 3	S	S	S	S	S	S	M	M	S
CO 4	S	S	S	S	S	S	M	M	S
CO 5	S	S	S	S	S	S	S	S	S

ஆறாம் பருவம்	மொழிப் பயன்பாடு	நேரம் / வாரம் : 6	
DSEC -3		தர மதிப்பு: 5	
பாடக் குறியீட்டு எண் : 18UTAE65		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- மொழியின் வளர்நிலைகளையும் பயன்பாடுகளையும் எடுத்துரைப்பர்.
- கடிதங்களின் வகைகளை இனம் காண்பர்.
- விளம்பரத்துறையில் தமிழ் மொழியின் ஆளுமையை மதிப்பிடுவர்.
- பத்திரிகைத்துறையில் தமிழ் மொழி பெறுமிடத்தினையும் பணிகளையும் ஆராய்வர்.
- வானொலி, தொலைக்காட்சி நிகழ்ச்சிகளைத் தயாரித்துப் பயிற்சி பெறுவர்.

Course Code 18UTAE65	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	M	S	S	S	S	S
CO 2	L	S	M	-	L	S	S	S	S
CO 3	S	S	L	S	S	L	S	S	S
CO 4	S	S	S	M	S	M	S	S	S
CO 5	M	S	M	S	S	S	S	S	S
CO 6	S	S	M	M	S	S	S	S	S

ஆறாம் பருவம்	இலக்கியத்தில் மனித உரிமைக் கோட்பாடுகள்	நேரம் / வாரம் : 6	
DSEC – 3		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18UTAE66		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- இலக்கியத்தின் இயல்புகளையும் போக்குகளையும் இனம் காண்பர்.
- மனித உரிமைக் கோட்பாடுகளை விளக்குவர்.
- தமிழ் இலக்கியங்களில் அறச்சிந்தனைகளை மதிப்பிடுவர்.
- மனித உரிமைத் தத்துவங்கள் இலக்கியங்களுக்கு அடிப்படையாதலை ஆராய்வர்.
- தமிழ் இலக்கியங்களோடு மனித உரிமைக் கோட்பாடுகளை ஒப்பிட்டு இனம் காண்பர்.

Course Code 18UTAE66	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	L	M	S	S
CO 2	S	S	S	S	S	M	M	S	S
CO 3	S	S	S	S	S	M	M	M	S
CO 4	S	S	S	S	M	S	S	M	S
CO 5	S	S	S	S	M	S	S	M	S

ஆறாம் பருவம்	தமிழர் யோகக்கலை	நேரம் / வாரம் : 2	
SEC – 4		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UTAS61		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- யோகக்கலையின் வளர்ச்சி, வரலாறு மற்றும் வகைகளை எடுத்துரைப்பர்.
- தமிழர்கலையே யோகக்கலை என்பதைச் சான்றுடன் நிறுவர்.
- தியானத்தின் முக்கியத்துவத்தையும் பயன்பாடுகளையும் பட்டியலிடுவர்.
- யோகக் கலைக்கும், உணவுமுறைகளுக்கும் உள்ள தொடர்பையும் உளவியல் மாற்றங்களையும் மதிப்பிடுவர்.
- மருத்துவத் துறையோடு யோகக்கலையை ஒப்பிட்டு ஆய்வர்.

Course Code 18UTAS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	M	S	S	--	S
CO 2	S	S	S	S	S	S	M	S	S
CO 3	S	S	M	L	L	S	M	--	S
CO 4	S	S	S	M	M	S	S	S	S
CO 5	S	S	S	M	S	S	S	S	S

ஆறாம் பருவம்	பேச்சுக்கலை	நேரம் / வாரம் : 2	
SEC – 5		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் 18UTAS62		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு:

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்,

- பேச்சாளர் ஆவதற்குரிய தகுதிகளைப் புலப்படுத்துவர்.
- மேடைப் பேச்சின் வகைகளைப் பட்டியலிடுவர்.
- மேடைப்பேச்சாளர்களுக்குரிய பண்புகளைத் தெரிந்து கொள்வர்.
- சிறந்த பேச்சு எது என்பதை இனங் காண்பர்.
- மேடைப்பேச்சுகளை ஒப்பிட்டு ஆய்வர்.

Course Code 18UTAS62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S	S	S
CO 3	S	S	M	S	S	S	M	S	S
CO 4	S	S	M	S	S	S	M	S	S
CO 5	S	S	M	S	S	S	S	S	S

ஆறாம் பருவம்	கணினித்தமிழ்	நேரம் / வாரம் : 2	
SEC – 6		தர மதிப்பு : 2	
பாடக் குறியீட்டு எண் : 18UTAS63		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- கணினியின் வரலாற்றையும், தலைமுறையையும் எடுத்தரைப்பர்.
- கணினியின் அமைப்பு முறைகள் மற்றும் செயல்பாடுகளை இனங்காண்பர்.
- கணினியின் பல்துறைப் பயன்பாடுகளை அறிந்து வெளிப்படுத்துவர்.
- தமிழில் இணையத்தின் பயன்பாடு, தேடல், தரவிறக்கம், மின்னஞ்சல் அனுப்பும் முறை, பெறும் முறை குறித்துப் பயிற்சி பெறுவர்.
- கல்வியில் கணிப்பொறியின் ஆதிக்கம், முக்கியத்துவம், பயன்பாடு, தேவை குறித்து மதிப்பிடுவர்.

Course Code 18UTAS63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	S	S	S	M	S
CO 2	M	S	M	M	S	S	S	M	S
CO 3	S	S	M	S	S	S	S	M	S
CO 4	M	S	M	S	S	S	S	M	S
CO 5	M	S	M	M	S	S	S	S	S

B.A. English

PROGRAMME SPECIFIC OUTCOMES

Students of Undergraduate English Literature Degree Programme will be able to

PSO 1: understand the background and basic concepts of English Literature and Literatures of other countries written in English.

PSO 2: comprehend the various literary genres, the literary movements, social and literary history of England, and various schools of thought in literary criticism.

PSO 3: acquire knowledge about writers from different countries writing in English, their greatness along with the social and cultural relevance of their works.

PSO 4: develop reading, writing, listening and speaking skills through intensive and extensive reading of literary and non-literary texts.

PSO 5: improve their English vocabulary and knowledge of English grammar and usage, and thereby enhance their ability to use English language effectively and efficiently in different life situations.

PSO 6: analyse critically and appreciate English literary texts and develop the ability to compare them with literary texts written in other languages.

PSO 7: enhance their skills required for a prospective career and entrepreneurial endeavours.

PSO 8: strengthen their creativity with innovative thinking and effective expression.

PSO 9: chisel their personality with the knowledge acquired from Literature.

Semester III	ENGLISH FOR ADVANCED LEARNERS III	Hours/Week: 6	
Part II		Credits: 3	
Course Code 18UENG31A		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand prose forms in English
- develop their literary sensibility
- get acquainted with the spirit, manners and social conditions depicted in English novels
- enhance their competence in English through grammar and usage
- identify speech sounds and phonetic symbols
- empower themselves for competitive examinations

Semester III	ENGLISH FOR CAREER GUIDANCE - III	Hours/Week: 6	
Part II		Credits: 3	
Course Code 18UENG31B		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn English through Prose pieces
- analyse various aspects of a novel
- understand basic English Grammar
- acquire reading and writing skills
- enrich their vocabulary
- hone their communicative efficiency

Semester III	ENGLISH FOR COMMUNICATIVE COMPETENCE- III	Hours/Week: 6	
Part II		Credits: 3	
Course Code 18UENG31C		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- enjoy short stories in English
- learn how to read and comprehend passages in English
- acquire more vocabulary
- understand how to write formal and informal letters
- learn how to translate basic sentence structures in English into their mother tongue
- learn how to develop a story by using hints.

Semester III	POETRY II	Hours/Week: 5	
Core course		Credits: 4	
Course Code 18UENC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with the tenets of different poetic movements
- appreciate various poetic forms and devices
- understand the different genres of poetry
- compare and contrast British poems written in different ages
- critically analyze and interpret poems
- get aesthetic sensibility

Course Code 18UENC31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	S	S	M	L	L	-	-	L
CO2	M	S	S	M	L	L	-	L	M
CO3	M	S	S	M	L	L	-	-	M
CO4	S	S	S	S	S	S	L	L	L
CO5	S	S	S	S	S	S	L	L	L
CO6	M	S	S	S	S	M	L	M	L

Semester III	FICTION	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UENC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the development of British novels through the ages
- imbibe the social milieu and values of life portrayed in the novels
- discuss the ethical and aesthetic value of literary texts
- make critical analysis of the various aspects of fiction
- identify the narrative techniques used by novelists
- uphold systematic reading and critical thinking

Course Code 18UENC32	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	S	S	S	-	-	L	M
CO2	S	S	S	S	S	-	L	M	M
CO3	M	S	S	S	S	M	L	M	L
CO4	M	M	M	S	S	S	-	M	L
CO5	S	S	S	S	S	S	L	M	L
CO6	M	M	M	S	S	M	S	S	S

Semester III	CLASSICAL MYTH AND LITERATURE	Hours/Week: 5	
Allied Course		Credits: 5	
Course Code 18UENA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with Greek and Roman myths
- understand Greek and Roman Gods and Goddesses
- learn the significance of the Greek mythological stories
- comprehend the use of myth in poetry
- learn and relish the use of myth in drama
- compare other myths with Greek and Roman myths

Course Code 18UENA31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	S	S	S	-	-	-	-
CO2	S	S	S	S	S	-	-	-	-
CO3	M	M	S	S	S	S	-	M	M
CO4	M	M	S	S	S	S	-	M	M
CO5	M	M	S	S	S	S	-	M	M
CO6	L	M	S	S	M	S	S	S	S

Semester III	ENGLISH FOR PROFESSIONS I	Hours/Week: 2	
Non Major Elective		Credits: 2	
Course Code 18UENN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- maintain good intra- personal and inter-personal relationship
- communicate efficiently in English
- have better commercial communication skills
- have enhanced official correspondence
- make technical presentations
- have career prospects

Course Code 18UENN31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	M	M	S	S	L	S	S	S
CO2	-	-	-	S	S	-	S	S	S
CO3	-	-	-	S	S	-	S	S	S
CO4	-	-	-	S	S	-	S	S	S
CO5	-	-	-	L	S	-	S	S	S
CO6	-	-	-	M	S	-	S	S	S

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster.

Semester IV	ENGLISH FOR ADVANCED LEARNERS IV	Hours/Week: 6	
PART II		Credits: 3	
Course Code 18UENG41A		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire language skills through Literature
- have proficiency in English Grammar and Usage
- enhance their vocabulary
- develop their creativity and imagination
- improve their employability skills
- get acquainted with presentation skills

Semester IV	ENGLISH FOR CAREER GUIDANCE - IV	Hours/Week: 6	
PART II		Credits: 3	
Course Code 18UENG41B		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn English through poems
- interpret a Shakespearean play
- understand basic English Grammar
- acquire reading and writing skills.
- enrich their vocabulary.
- hone their communicative efficiency

Semester IV	ENGLISH FOR COMMUNICATIVE COMPETENCE IV	Hours/Week: 6	
PART II		Credits: 3	
Course Code 18UENG41C		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- introduce themselves to others
- narrate stories in simple English
- understand the importance of subject-verb agreement in sentences
- learn how to expand proverbs in English
- comprehend how to write informal letters
- learn how to prepare resume

Semester IV	DRAMA	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UENC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the dramatic techniques and devices in English Literature
- appraise the characterization of the playwrights
- realize the dramatic language in the plays
- grasp the different types of drama in different ages
- relish the action and speech of the characters in the plays
- cognize the emotional and the aesthetic perspective of the characters

Course Code 18UENC41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	-	S	L	-	-	L	-	L	M
CO2	L	-	M	-	L	L	-	L	-
CO3	-	L	L	L	L	-	-	-	-
CO4	-	M	L	-	-	L	-	L	-
CO5	L	M	-	S	L	-	-	-	-
CO6	-	-	L	L	-	M	-	L	-

Semester IV	PROSE -II	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UENC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- read and appreciate the prose writings of British Literature through ages
- understand the various techniques adopted by prose writers
- conversant with the major prose writers of all the ages
- imbibe the creative, the logical and the analytical thinking of the writers
- compare and contrast the style adopted by various prose writers
- improve their vocabulary and writing skills

Course Code 18UENC42	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	L	-	M	M	M	-	L	M
CO2	L	M	L	M	M	M	L	M	L
CO3	M	L	M	L	M	L	-	M	L
CO4	L	-	-	M	M	S	L	M	L
CO5	L	M	M	L	L	S	-	L	L
CO6	-	L	L	M	S	M	M	M	L

Semester IV	SOCIAL HISTORY OF ENGLAND	Hours/Week: 5	
Allied Course		Credits: 4	
Course Code 18UENA41		Internal 25	External 75

COURSE OUTCOMES

On successful completion of the course, the student will be able to

- know the life of people of England from the 11th century to the 21th century
- become familiar with the social, political and economic conditions of England through the ages
- infer how the works of writers are influenced by the age in which they live

Course Code 18UENA41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	-	M	L	L	-	L	L	L
CO2	M	-	S	L	L	-	L	L	L
CO3	L	M	M	L	L	M	L	L	L
CO4	L	-	L	S	S	M	L	L	L
CO5	L	-	L	S	S	M	L	L	L
CO6	L	-	L	L	L	L	S	S	M

Semester IV	ENGLISH FOR PROFESSIONS II	Hours/Week: 2	
Non Major		Credits: 2	
Course Code 18UENN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- maintain inter-personal relationship at workplace
- have better career prospects
- understand the basic skills and knowledge required for the art of writing
- develop their professional skills
- write effective reports
- identify professions appropriate to them

Course Code 18UENN41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	-	-	-	L	L	-	M	M	S
CO2	-	-	-	L	L	-	S	M	M
CO3	-	-	-	L	L	-	S	M	M
CO4	-	-	-	L	L	-	M	S	S
CO5	-	-	-	S	M	-	M	S	M
CO6	-	-	-	M	M	-	S	M	S

Semester V	AMERICAN LITERATURE	Hours/Week : 5	
Core Course -9		Credits: 4	
Course Code 18UENC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the origin and growth of American Literature
- understand the themes in the works of major American writers
- comprehend the trends in the history of American Literature
- analyze the elements and strategies of various genres in American Literature
- learn the style and techniques of American writers
- get familiar with the American tradition and culture

Course Code 18UENC51	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	M	L	L	M	L	L	L
CO2	L	S	S	M	M	S	M	M	L
CO3	S	S	S	M	M	M	L	L	L
CO4	S	S	S	L	L	S	L	L	L
CO5	L	S	M	M	M	M	L	L	L
CO6	S	M	S	M	M	S	L	S	M

Semester V	SHAKESPEARE	Hours/Week: 5	
Core Course -10		Credits: 4	
Course Code 18UENC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the student will be able to

- gain an insight into the classification of Shakespearean plays.
- appreciate Shakespeare’s works with a critical perspective
- get acquainted with the creativity and innovative techniques used by Shakespeare
- understand the various themes of Shakespearean plays
- enjoy and appreciate the language of Shakespeare
- understand the history of Shakespearean criticism

Course Code 18UENC52	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	L	M	M	M	M	L	L	L
CO2	-	L	M	M	M	S	-	-	L
CO3	-	M	M	S	M	M	-	L	-
CO4	L	L	S	M	M	S	L	L	L
CO5	-	-	-	S	S	S	L	S	L
CO6	S	S	M	M	M	S	S	M	M

Semester V	THE HISTORY OF ENGLISH LITERATURE	Hours/Week : 5	
Core Course -11		Credits: 4	
Course Code 18UENC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the growth and development of English Literature through ages.
- gain adequate knowledge about the life and works of important English writers.
- analyse various literary works and its writers through ages.
- understand the social context of the writers and their ages.
- appreciate the uniqueness of the literary works and its writers.
- enhance their skills required for attempting various competitive exams.

Course Code 18UENC53	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	M	M	M	L	L	L	-
CO2	S	S	S	M	L	M	L	L	L
CO3	S	S	S	M	L	M	L	L	L
CO4	S	M	S	M	M	M	L	L	L
CO5	L	M	M	L	L	S	L	S	L
CO6	L	L	L	M	M	-	S	L	M

Semester V	INDIAN WRITINGS IN ENGLISH	Hours/ Week : 5	
Core Course -12		Credits: 4	
Course Code: 18UENC54		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the growth and development of Indian English Literature
- understand the uniqueness of Indian Literature in English
- acquire knowledge of the complex social and cultural contexts in India
- enhance their literary sensibility through a reading of various genres in Indian Writing in English
- analyse the themes of Indian writers
- comprehend the different narrative styles of writers

Course Code 18UENC54	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	M	M	M	M	L	L	L
CO2	M	L	S	M	M	M	L	L	L
CO3	M	-	M	M	M	S	L	L	L
CO4	L	S	L	M	M	M	L	L	L
CO5	-	-	S	M	M	S	L	M	L
CO6	-	S	-	M	M	M	M	M	L

Semester V	PHONETICS AND CONVERSATIONAL ENGLISH	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 18UENE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the science of speech sounds
- familiarize the phonetic symbols
- analyse the physical transmission of speech sounds
- use appropriate phrases in different situations
- study the perception of speech sounds by the listener

Course Code 18UENE51	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	L	-	-	M	S	-	S	S	S
CO2	-	-	-	-	-	-	M	-	-
CO3	-	-	-	-	-	-	-	-	-
CO4	-	-	-	M	S	L	M	M	L
CO5	-	-	-	M	M	-	M	M	M
CO6	-	-	-	L	S	-	M	-	L

Semester V	ONE ACT PLAYS	Hours/Week: 6	
DSEC -1		Credits: 5	
Course Code 18UENE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the difference between a drama and a one act play
- appreciate the varied themes of one-act plays
- improve the communicative competence
- learn the differences in the socio- cultural background of the writers
- appreciate the varied techniques of writing one act plays
- enhance their reading skill and formulate critical outlook on life

Course Code 18UENE52	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	S	-	L	L	S	L	M	M
CO2	L	L	L	-	-	S	M	M	L
CO3	-	-	-	S	S	L	S	M	L
CO4	S	L	S	L	L	S	L	-	-
CO5	-	S	L	L	L	S	M	L	L
CO6	L	L	L	S	S	S	L	L	S

Semester V	LIFE WRITING	Hours/Week: 6	
DSEC - 1		Credits: 5	
Course Code 18UENE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get introduced to the narrative characteristics of various genres
- understand the writings of various literary writers
- analyse the differences among various genres of self expressions
- comprehend the different narrative styles and techniques of the writers
- appreciate the process of Life Writing
- apply the knowledge to write their Life Writing in future

Course Code 18UENE53	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	-	S	M	L	L	M	L	M	M
CO2	S	S	M	M	M	M	S	M	S
CO3	-	L	L	M	M	M	S	M	L
CO4	-	M	-	M	M	L	L	S	L
CO5	-	M	-	M	M	-	S	S	S
CO6	-	-	-	M	M	-	S	S	S

Semester V	PRESENTATION SKILLS	Hours/Week : 2	
SEC -3		Credits: 2	
Course Code 18UENS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the need and importance of promoting presentation skills
- acquire the different methods of presentation
- equip different types and methods of presentation
- exhibit how to use visual aids for effective presentation
- deal with difficult situations
- deliver good presentation

Course Code 18UENS51	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	-	-	-	S	S	-	S	M	M
CO2	-	-	-	M	M	-	M	L	L
CO3	-	-	-	L	L	-	S	M	M
CO4	-	-	-	M	M	-	M	M	L
CO5	-	-	-	L	M	-	S	M	S
CO6	-	-	-	L	M	-	S	M	S

Semester V	LITERARY INTERPRETATION	Self-study	
Extra-credit		Credits: 1	
Course Code 18UENLI51		Internal 100	

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop their reading skills
- gain competence to analyse the theme and structure of novel and drama.
- become conversant with various techniques adopted by novelists and dramatists.
- hone their comprehensive and interpretation skills.
- compare and contrast the different genres of literature.
- relish literature in their own perspectives.

Semester VI	LITERARY CRITICISM	Hours/Week: 6	
Core Course -13		Credits: 4	
Course Code 18UENC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge of the origin and growth of English literary criticism
- understand the influence of Classical critics on English literary critics
- analyze and appreciate a literary work of art
- develop a critical attitude towards a literary work
- know the development of criticism through ages
- learn the method of analysing thematic and stylistic features of a work of art

Course Code 18UENC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	L	S	M	M	L
CO 2	S	M	L	M	L	S	L	L	L
CO 3	S	S	S	L	M	S	M	M	L
CO 4	M	S	S	M	M	S	M	M	L
CO 5	S	S	S	L	L	S	M	L	L
CO 6	S	S	S	M	M	S	L	M	L

Semester VI	NEW LITERATURES IN ENGLISH	Hours/Week: 6	
Core Course - 14		Credits: 5	
Course Code 18UENC62		Internal 25	External 75

COURSE OUTCOMES

On the completion of the course, the students will be able to

- get an insight into the various aspects of Commonwealth Literature
- appreciate and analyse the themes in the works of post colonial writers
- become familiar with the language and techniques used by the writers of Commonwealth Literature
- understand the problems of the colonized presented in the prescribed works
- gain knowledge about the cultural practices followed in different countries
- comprehend the colonial history and culture

Course Code 18UENC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	L	-	L	L
CO 2	S	S	S	M	M	S	-	S	L
CO 3	M	S	S	S	S	S	-	M	M
CO 4	S	S	S	M	M	S	-	M	M
CO 5	S	L	S	M	M	S	-	M	M
CO 6	S	S	S	M	L	S	-	L	L

Semester VI	JOURNALISM AND MASS COMMUNICATION	Hrs/Week :6	
DSEC -2		Credits:5	
Course Code 18UENE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the different media of mass communication and their functions.
- define and differentiate kinds of journalism
- comprehend the structure of News in print form, news sources and the intricacy of proof-reading
- acquire knowledge of the functions and responsibilities of the editorial department in designing a newspaper
- acquire knowledge about the career opportunities in the field of journalism
- develop skills essential to write articles, reports and reviews for the media

Course Code 18UENE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	M	-	M	L	L
CO 2	M	S	-	-	M	-	L	S	-
CO 3	-	M	-	M	L	-	S	-	M
CO 4	M	M	S	-	-	-	M	-	M
CO 5	-	M	-	-	-	-	M	-	M
CO 6	-	-	-	M	M	-	S	S	M

Semester VI	FILM APPRECIATION (for those who joined in 2018 and after)	Hours/Week : 6	
DSEC -2		Credits: 5	
Course Code 18UENE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the various film theories
- comprehend the nuances of script writing and film making
- write film reviews
- learn the narrative techniques used in films
- know about different types of film adaptations
- make a comparative study of Film and Literature.

Course Code 18UENE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	-	-	-	-	-	-
CO 2	S	-	-	-	-	-	M	M	-
CO 3	-	-	-	-	-	-	S	M	-
CO 4	M	-	-	S	-	-	-	-	-
CO 5	-	M	-	-	-	-	-	-	-
CO 6	M	M	-	-	-	S	-	-	M

Semester VI	FANTASY FICTION	Hours/Week: 6	
DSEC 2		Credits: 5	
Course Code 18UENE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the aesthetics of imaginary space beyond human reach
- understand the difference between fantasy fiction and other types of fiction
- learn the terms related to and techniques used in fantasy fiction
- realize the uniqueness of mythical characters in fantasy fiction
- appreciate the settings and elements of fantasy fiction
- apprehend the style of fantasy fiction, specially its symbolism and language

Course Code 18UENE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	L	M	M	-	S	L
CO 2	S	S	S	L	M	S	-	L	L
CO 3	S	S	S	M	S	S	L	M	L
CO 4	S	S	S	M	M	S	L	-	S
CO 5	S	S	M	M	M	M	M	S	-
CO 6	M	S	M	S	S	S	M	S	L

Semester VI	ENGLISH LANGUAGE TEACHING	Hours/Week: 6	
DSEC -3		Credits: 5	
Course Code 18UENE64		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- equip themselves with the knowledge of the traditional methods of English Language teaching
- understand the various approaches to English Language teaching
- train themselves in various classroom activities
- get knowledge about the preparation of teaching aids in teaching English as a second language
- to introduce the recent trends in English Language teaching
- acquire effective teaching and communication skills.

Course Code 18UENE64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	S	L	S	S	M
CO 2	S	S	M	S	S	S	S	M	L
CO 3	L	M	M	S	S	M	S	S	M
CO 4	L	M	M	S	S	M	S	S	L
CO 5	S	S	M	L	M	M	S	L	-
CO 6	M	M	L	S	S	M	S	S	S

Semester VI	CREATIVE WRITING	Hours / Week : 6	
DSEC -3		Credits : 5	
Course Code 18UENE65		Internal 1 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic skills and knowledge required for the art of writing
- know the required fundamentals for the presentation of ideas and arguments
- get the knowledge of freewheeling
- develop their skill in writing effective essays and short stories
- learn the art of writing poetry
- develop their creative ability with imaginative faculty and aesthetic sensibility

Course Code 18UENE65	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	M	S	S	M
CO 2	S	L	M	S	S	M	S	S	M
CO 3	S	S	M	S	S	M	S	S	M
CO 4	S	S	M	S	S	S	S	S	M
CO 5	M	S	M	S	S	M	S	S	M
CO 6	L	L	L	S	M	M	S	S	S

Semester VI	POST COLONIAL LITERATURE	Hours/Week: 6	
DSEC - 3		Credits: 5	
Course Code 18UENE66		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the colonial history and culture from the perspective of the colonizers.
- know the subaltern native's experiences of colonial domination.
- redefine and re-explore the significant role of the subalterns in the Post colonial society.
- become familiar with the themes of subaltern texts.
- comprehend the plight of the marginalized people expressed in the literary works of different nations.
- recognize voices and perspectives of the subaltern class in terms of identity crisis, religious discrimination and cultural differences.

Course Code 18UENE66	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	M	L	L	M
CO 2	S	S	S	M	M	S	L	L	M
CO 3	S	S	S	M	M	S	L	L	M
CO 4	S	S	S	M	M	S	L	M	M
CO 5	M	M	S	M	M	S	L	L	S
CO 6	S	S	S	M	M	S	L	M	S

Semester VI	TRANSLATION SKILLS	Hours/Week: 2	
SEC - 4		Credits: 2	
Course Code 18UENS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the history of translation
- become familiar with various theories of translation
- understand the kinds and methods of translation
- get an insight into the various aspects of translation procedures
- recognize the problems in translating prose, poetry and drama
- develop their translation skills through practice

Course Code 18UENS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	L	-	-	-	-
CO 2	S	S	S	M	L	-	L	-	-
CO 3	S	S	M	M	L	-	L	-	-
CO 4	S	S	M	M	-	-	S	-	-
CO 5	-	S	M	M	S	M	S	-	-
CO 6	-	S	M	M	S	S	S	-	-

Semester VI	TECHNICAL WRITING	Hours/Week: 2	
SEC - 5		Credits: 2	
Course Code 18UENS62		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- define technical writing and the skills associated with it
- know the importance of technical writing
- understand the techniques of business correspondence
- learn the art of drafting letters for official purposes
- compose emails and draft reports
- develop the skills in dissemination of information

Course Code 18UENS62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	M	L	S	S	L
CO 2	S	M	M	L	S	L	S	S	L
CO 3	M	M	M	M	S	L	S	S	L
CO 4	S	M	M	M	S	S	S	M	L
CO 5	M	M	M	M	M	-	S	M	-
CO 6	M	M	M	L	M	L	M	S	L

Semester VI	SOFT SKILLS	Hours/Week: 2	
SEC - 6		Credits: 2	
Course Code 18UENS63		Internal 40	External 60

COURSE OUTCOMES

On the completion of the course, the students will be able to

- know the importance of soft skills
- develop effective communication skills and presentation skills
- learn the art of time management and stress management
- develop positive attitude and emotional intelligence
- acquire corporate skills and negotiation skills.
- enhance their interpersonal skills and leadership qualities

Course Code 18UENS63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	M	-	S	S	S
CO 2	S	S	L	M	S	-	S	S	S
CO 3	S	M	M	M	L	-	S	S	S
CO 4	S	M	M	M	L	S	S	S	S
CO 5	S	S	M	M	L	M	S	S	S
CO 6	S	M	M	S	S	M	S	S	S

B.A. History

PROGRAMME SPECIFIC OUTCOMES

1. gain in-depth knowledge of the subject of Regional, National and International importance.
2. appreciate the Political, Social, Economic, Cultural and Scientific development of the period under study.
3. know the remarkable events in history and its impact on State and Society.
4. assimilate the diverse cultural heritage of societies and to conserve the natural resources.
5. inculcate the spirit of Nationalism and Patriotism by imbibing the moral and traditional values.
6. perceive the essential elements of democracy, good governance and civic responsibilities.
7. promote Justice, Peace and Harmony with social responsibility in a pluralistic society.
8. develop the leadership qualities, administrative skills and skills in acquiring jobs and thereby becoming a responsible citizen.
9. pursue higher studies ,appear for competitive examinations, enter into a service in academics and other administrative areas.

Semester III	HISTORY OF INDIA (A.D. 1761 – 1947) PAPER III	Hours/Week: 5	
Core Course 5		Credits: 4	
Course Code 18UHIC31		Internal 25	External 75

COURSE OUTCOMES

On completion of course, the student will be able to

- learn the advent of Europeans and the establishment of Colonial Rule.
- know the diplomacy and administrative system of the British.
- develop the spirit of Nationalism and patriotism.
- understand the various stages in the freedom movement.
- analyse Legacy of British Rule in India.
- acquire knowledge on Western Influence in India.

Course Code 18UHIC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	S	L	L	M	S
CO 2	S	S	S	L	S	M	L	S	S
CO 3	S	S	S	L	S	S	S	S	M
CO 4	S	S	S		S	S	L	S	S
CO 5	S	S	S		S	M	L	S	S
CO 6	S	S	S	L	S	M	L	L	S

Semester III	HISTORY OF TAMIL NADU (A.D. 1529 – 1800) PAPER-III	Hours/Week: 4	
Core Course 6		Credits : 4	
Course Code 18UHIC32		Internal 25	External 75

COURSE OUTCOMES

On completion of course, the student will be able to

- know the history of Nayaks of Madurai, Tanjore, and Senji.
- understand the contributions of Nayaks to Tamil country.
- learn the administration of Sethupathis and contributions of Marathas to Tamil culture.
- analyse the condition of Tamil Nadu under Nawabs.
- gain knowledge over the revolt of Poligars.
- acquire knowledge over the European settlements and its impact.

Course Code 18UHIC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	L	M	L	M	M
CO 2	S	S	S	M	L	M	L	M	M
CO 3	S	S	S	S	L	M	L	S	M
CO 4	S	S	S	M	L	M	M	M	S
CO 5	S	S	S	M	S	M	S	M	S
CO 6	S	S	S	M	M	M	S	M	S

Semester III	HISTORY OF INDIA UPTO A.D.1858	Hours/Week: 2	
NMEC- 1		Credits : 2	
Course Code 18UHN31		Internal 40	External 60

COURSE OUTCOMES

On completion of course, the student will be able to

- acquire knowledge on the early civilizations and the rise of new religions.
- understand the remarkable events in Ancient and Medieval India.
- gain vivid knowledge on Muslim rule in India.
- analyse the policies and administration of colonial rule in India.
- know the causes and results of Great Revolt.
- appear for the competitive examinations.

Course Code 18UHN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	L		L	S
CO 2	S	S	S	L	M	M	L	M	S
CO 3	S	S	S	L	M	M	M	M	S
CO 4	S	S	S	L	S	S	M	S	S
CO 5	S	S	S	M	S	S	M	S	S
CO 6	S	S	S	S	S	S	S	S	S

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand **the economic development and the various sectors of Indian Economy.**
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	HISTORY OF INDIA (A.D. 1947 – 1997) PAPER IV	Hours/Week: 5	
Core Course 7		Credits : 5	
Course Code 18UHIC41		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- know the various phases in the integration of India.
- acquire knowledge of the policies of Prime Ministers.
- understand the remarkable events from 1980 to 1989.
- analyse the role of India in World Organisations.
- learn the foreign policy of India.
- become an efficient administrator

Course Code 18UHIC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	M	S	L	S
CO 2	S	S	S	L	S	M	S	M	S
CO 3	S	S	S	M	S	M	S	L	S
CO 4	S	S	S	M	S	M	S	L	S
CO 5	S	S	S	L	S	M	S	M	S
CO 6	S	S	S	S	S	S	S	S	S

Semester IV	HISTORY OF TAMIL NADU (AD 1801 – 2006) PAPER-IV	Hours/Week: 4	
Core Course 8		Credits : 4	
Course Code 18UHIC42		Internal 25	External 75

COURSE OUTCOMES

On completion of course, the student will be able to

- know the early revolts and the development of Tamil Nadu under the British.
- learn the contribution of reformers against Socio-religious evils in the society.
- analyse the struggle for social justice.
- know the role of congress party in the upliftment of Tamil Society.
- imbibe the development of Tamil Nadu under DMK and ADMK Ministry.
- understand the development of Modern Tamil Nadu.

Course Code 18UHIC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S		S		M	M	S
CO 2	S	S	S	S	S	L	M	S	S
CO 3	S	S	S	S	S	S	S	S	M
CO 4	S	S	S	S	S	M	M	S	S
CO 5	S	S	S	M	S	M	S	S	S
CO 6	S	S	S	M	M	L	S	M	S

Semester IV	INDIAN NATIONAL MOVEMENT (A.D 1885 – 1947)	Hours/Week: 2	
NMEC– 2		Credits : 2	
Course Code 18UHIN41		Internal 40	External 60

COURSE OUTCOMES

On completion of course, the student will be able to

- understand the National Movement of Pre-Gandhian Era.
- know the various movements of Gandhian Era.
- learn the missions and plans of British towards Independence.
- realise the sacrifice of Martyrs.
- analyse the role of Freedom Fighters in the National Movement.
- appear for competitive examinations.

Course Code 18UHIN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	S	S	M	S
CO 2	S	S	S	M	M	S	S	M	S
CO 3	S	S	S	M	M	S	S	M	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	S	S	S	M	S	S	S	M	S
CO 6	S	M	M	M	M	M	M	M	S

Semester V	DEVELOPMENT OF INDIA (A.D. 1947-2004)- Paper V	Hours/Week: 5	
Core Course 9		Credits : 5	
Course Code 18UHIC51		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- aware of the welfare programmes of the Government.
- understand the growth of Education.
- acquire knowledge on development of Economy.
- know the development of Transport and Communication .
- perceive the Scientific advancement in India .
- Imbibe the emergence of India as a Super Power by competing with World Powers.

Course Code 18UHIC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	M	S	M	M	M
CO 2	S	S	S	L	M	S	S	S	S
CO 3	S	S	S		M	S	S	M	S
CO 4	S	S	S	L	M	S	L	L	S
CO 5	S	S	S	L	S	S	S	M	S
CO 6	S	S	S		S	S	M	L	L

Semester V	HISTORY OF MODERN EUROPE (A.D.1789-1919) Paper -I	Hours/Week: 5	
Core Course 10		Credits : 5	
Course Code 18UHIC52		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the impact of French revolution on World.
- gain knowledge on remarkable events in Europe.
- know the policy of monarch and diplomacy of leaders.
- analyse the role of European powers in World War I.
- learn the peace treaties of European Powers.
- imbibe the democratic ideas of Liberty, Equality and Fraternity.

Course Code 18UHIC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	S	S	S	S	L
CO 2	S	S	S	L	S	S	M	M	L
CO 3	S	S	S	L	S	S	M	S	L
CO 4	S	S	S	L	S	S	M	M	L
CO 5	S	S	S	L	S	S	S	M	L
CO 6	S	S	S	L	S	S	S	S	M

Semester V	ELEMENTS OF HISTORIOGRAPHY	Hours/Week: 5	
Core Course 11		Credits : 4	
Course Code 18UHIC53		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the characteristics of History.
- acquire knowledge of historiography and its concepts.
- know the contribution of historians through the ages.
- evaluate historians' approach towards history.
- understand the methodology of historical writing.
- develop the skill to become good Historians.

Course Code 18UHIC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M		L				S
CO 2	S	M	M	L	L	L	L	M	S
CO 3	S	S	M	L	L	L	L		S
CO 4	S	M	M	L	L		L	M	S
CO 5	S	M	M		L		L		S
CO 6	S	M	M		L	L	L	M	

Semester V	HISTORY OF USA (upto A.D 1865)	Hours/Week: 5	
Core Course 12		Credits : 4	
Course Code 18UHIC54		Internal 25	External 75

COURSE OUTCOMES:

On the completion of course the student will be able to

- acquire knowledge on colonization and its independence.
- understand the unique features of US Constitution and Federal administration.
- analyse the policies of Republicans.
- gain the knowledge of Westward Expansion.
- learn the causes of Civil War and its effects.
- know the concept of democracy.

Course Code 18UHIC54	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	S	M	M	L	L
CO 2	S	S	S		S	S	M	M	L
CO 3	S	S	S		S	S	M	L	L
CO 4	S	S	S	L	L	L	M	M	L
CO 5	S	S	S	L	S	S	M	L	L
CO 6	S	S	S		S	M	M	M	L

Semester V	FUNDAMENTALS OF COMPUTERS	Hours/Week: 4	
DSEC 1		Credits : 4	
Course Code 18UHIE51		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- learn the basics of computer.
- understand the development of Hardware Technologies and languages of computer.
- gain knowledge on Input, Output and Memory units.
- develop the skill in creating, formatting a document.
- acquire skill in using MS Excel and Powerpoint .
- cope up with the Technological advancement.

Course Code 18UHIE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L					L	
CO 2	S	M							
CO 3	S	M							
CO 4	S	M						M	M
CO 5	S	M	L					M	M
CO 6	S	M	L						

Semester V	DESKTOP PUBLISHING	Hours/Week: 4	
DSEC1		Credits : 4	
Course Code 18UHIE52		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the basic concepts of Windows and M.S.Word.
- acquire skill in using MS Excel and Power point.
- know the techniques of managing and printing a publication.
- develop skill in Designing business cards and logos.
- manipulate images using Photoshop.
- get employment opportunities.

Course Code 18UHIE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M						L	L
CO 2	S	M						M	M
CO 3	S	L						M	L
CO 4	S	M	L					M	L
CO 5	S	L						M	L
CO 6								S	S

Semester V	INTERNET AND HTML	Hours/Week: 4	
DSEC1		Credits : 4	
Course Code 18UHIE53		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- acquire basic knowledge on Internet and HTML.
- gain knowledge in working with e-Mail.
- develop skill in creating web pages..
- comprehend the basic features of Web browser .
- create and work on forms.
- with stand herself in the present scenario.

Course Code 18UHIE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M						M	M
CO 2	S	M						M	M
CO 3	S	M						M	M
CO 4	S	L	L					M	M
CO 5	M	L						M	M
CO 6	L							M	M

Semester V	INDIAN ARCHAEOLOGY	Hours/Week: 2	
SEC 2		Credits : 2	
Course Code 18UHS51		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the basic concepts.
- know the contributions of Eminent Archaeologists.
- develop the skill in exploration and excavation.
- acquire knowledge on Recent Excavation.
- imbibe the scientific method of Dating the Artefacts.
- get job opportunity in the Department of Archaeology.

Course Code 18UHS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	M		L	M
CO 2	S	S	S	S	M	M		L	M
CO 3	S	S	S	S	M	M		S	M
CO 4	S	S	S	S	M	M	L	M	L
CO 5	S	S	S	S	M	M	L	L	M
CO 6				S	M	M		S	S

Semester V	MUSEOLOGY	Hours/Week: 2	
SEC 3		Credits : 2	
Course Code 18UHS52		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- acquire knowledge on artefacts.
- develop the research skill.
- know the techniques of preservation and conservation of artefacts.
- aware of arrangement of artefacts in Indian Museum.
- get job opportunity in Government and Private Museum.
- preserve our rich heritage and composite culture.

Course Code 18UHS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	S		L	L	L	M
CO 2	S	M	M	S		L	L	S	S
CO 3	S	M	M	S	L	S	S	S	M
CO 4	S	M	M	S	L	S	L	S	L
CO 5	S	M	M	S	L	L	L	S	S
CO 6	S	M	M	S	L	S	L	S	S

Semester VI	HISTORY OF CHINA AND JAPAN (A.D. 1840-1950)	Hours/Week: 6	
Core Course13		Credits : 5	
Course Code 18UHIC61		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- aware of western influence on China and its sphere of influence.
- understand the remarkable events in History of China.
- gain knowledge on communist principles.
- know the rise of Japan.
- analyze the relation of Japan with World powers.
- understand the Economic recovery of Japan.

Course Code 18UHIC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	S	S	S	M	L
CO 2	S	S	S	M	S	S	S	M	M
CO 3	S	S	S	L	S	S	S	S	L
CO 4	S	S	S		S	S	S	L	L
CO 5	S	S	S	L	S	S	S	S	L
CO 6	S	S	S	L	S	S	S	M	M

Semester VI	HISTORY OF MODERN EUROPE (A.D. 1919-1945) Paper-II	Hours/Week: 6	
Core Course14		Credits : 5	
Course Code 18UHIC62		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- learn the formation of World Organization and its functions.
- acquire knowledge on Revolutions.
- analyse the conditions of Europe during the Inter war period.
- understand the principles of Fascism and Nazism.
- gain knowledge on remarkable events in the history of Europe.
- understand the emergence of Super powers of the World.

Course Code 18UHIC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	M
CO 2	S	S	S		S	S	M	S	M
CO 3	S	S	S		S	S	M	S	M
CO 4	S	S	S	L	S	S	M	S	M
CO 5	S	S	S	S	S	S	S	S	M
CO 6	S	S	S	M	S	S	S	S	M

Semester VI	HISTORY OF SCIENCE AND TECHNOLOGY	Hours/Week: 6	
DSEC 2		Credits : 4	
Course Code 18UHIE61		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the scientific inventions in Renaissance Period.
- know the scientific development in the Age of Revolution.
- gain knowledge over the development of Science in 19th century.
- learn the impact of science and technology.
- understand the contribution of Indian Scientists.
- analyse the role of Scientists in the Space research.

Course Code 18UHIE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	L	S		S		
CO 2	S	M	S	L	S		S		
CO 3	S	M	S	L	S	L	S		
CO 4	S	M	S	L			S		
CO 5	S	M	M	L	S	M	S	L	L
CO 6	S	M	S	L	S		S	L	L

Semester: VI	MODERN POLITICAL THOUGHT	Hours/Week: 6	
DSEC:2		Credits : 4	
Course Code: 18UHIE62		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the historical background of political thought.
- learn the concept of Militant Nationalism.
- know the political concepts through Religion.
- Imbibe the Gandhian ideas of Political thought
- identify the contemporary ideas of political thought.
- get awareness on Indian political thought.

Course Code 18UHIE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S		S	S	S	M	M
CO 2	S	S	S		S	S	S	M	M
CO 3	S	S	S	S	S	S	S	M	M
CO 4	S	S	S	L	S	S	S	S	M
CO 5	S	S	S		S	S	S	M	M
CO 6	S	S	S		S	S	S	S	M

Semester: VI	LIBERAL MOVEMENT	Hours/Week: 6	
DSEC:2		Credits : 4	
Course Code: 18UHIE63		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- learn the theory of absolutism in Europe.
- analyse the ideas of intellectuals for the establishment of World Democracy.
- imbibe the impact of Revolutions on World.
- understand the importance of Democracy.
- acquire knowledge on the various types of Democracy in World.
- protect the principles of Democracy.

Course Code 18UHIE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S		L			M	M
CO 2	S	S	S		L	S		S	M
CO 3	S	S	S		S			M	M
CO 4	S	S	S	L	M	S	L	M	M
CO 5	S	S	S	L	L	S	L	M	M
CO 6	S	S	S			S	L	M	M

Semester: VI	WOMEN STUDIES	Hours/Week: 6	
DSEC-3		Credits : 4	
Course Code: 18UHIE64		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- imbibe the basic theories and objectives of Feminism.
- understand the Status of women in India through the ages.
- analyze the role of organisation and movements for the welfare of women.
- develop the skill and leadership qualities through Government programmes.
- aware of the issues against women and the legal Acts for the protection of Women.
- become as an Empowered Women.

Course Code 18UHIE64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M		M	S	S	M	M	M
CO 2	S	M		M	S	S	M	S	M
CO 3	S	M	S	M	S	S	S	S	M
CO 4	L	M			S	S	S	S	M
CO 5		M	L		S	M	M	S	M
CO 6							M	S	M

Semester: VI	PANCHAYAT RAJ	Hours/Week: 6	
DSEC-3		Credits : 4	
Course Code: 18UHIE65		Internal 25	External 75

COURSE OUTCOMES

On the completion of course the student will be able to

- learn the administration of the Local self-Government.
- know the recommendations of various Committees on Panchayat Raj.
- understand the legislations on Rural Development.
- acquire knowledge on administrative system of Village Panchayats.
- learn the role of Panchayat for the welfare of rural people.
- develop the leadership quality.

Course Code 18UHIE65	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	S	M	M	S	M
CO 2	S	S	M		S	S	S		
CO 3	S	S	M	L	L	S	S		
CO 4	S	S	M	M		S	S	S	M
CO 5	S	S	M	S	L	S	S		
CO 6						M		S	M

Semester: VI	RURAL DEVELOPMENT	Hours/Week: 6	
DSEC-3		Credits : 4	
Course Code: 18UHIE66		Internal 25	External 75

COURSE OUTCOMES:

On the completion of course the student will be able to

- understand the basic concept of Rural Development.
- perceive the various approach of the Rural Development.
- aware of the Rural Health Service of Government.
- know the Rural Welfare Schemes.
- acquire knowledge on area development Programmes.
- gain insight into the development of Rural India.

Course Code 18UHIE66	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M				M		S	M
CO 2	S	M		S					
CO 3	S	M	L			M		S	
CO 4	S	M			S		M		M
CO 5	S	M		S	S		M	M	L
CO 6	S	M	L		S	S	M		M

Semester: VI	INDIAN ARCHITECTURE	Hours/Week: 2	
SEC :4		Credits : 2	
Course Code: 18UHS61		Internal 40	External 60

COURSE OUTCOMES

On the completion of Course the student will be able to

- understand the basic concepts in Indian Architecture.
 - glorify the root of Indian Architecture.
 - imbibe the various styles of Hindu Architecture.
 - acquire knowledge on architectural styles of Muslims.
 - know the Legacy of European Countries to Indian Culture.
- analyse monumental sources in pursuing research.

Course Code 18UHS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S		S	M		L		S
CO 2	S	S		S	S	L	L	L	S
CO 3	S	S		S	M		L	L	S
CO 4	S	S	L	S	M		L	L	S
CO 5	S	S	L	S	S	S	L	L	S
CO 6				S		L		S	S

Semester: VI	TOURISM IN TAMIL NADU	Hours/Week: 2	
SEC :5		Credits : 2	
Course Code: 18UHS62		Internal 40	External 60

COURSE OUTCOMES

On the completion of Course the student will be able to

- understand the basic tenets of Tourism.
- glorify the Heritage sites of Tamil Nadu.
- aware of the protection of Eco-Tourist sites.
- imbibe the Cultural values of Tamil Nadu.
- get employment opportunities.
- know the impact of Tourism.

Course Code 18UHS62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S		S					S
CO 2	S	S	M	S		M	M		S
CO 3	S	S		S		M		S	S
CO 4	S	S		S	L	M	M		S
CO 5								S	S
CO 6			S		S				S

Semester: VI	HISTORY OF VIRUDHUNAGAR	Hours/Week: 2	
SEC :6		Credits : 2	
Course Code: 18UHS63		Internal 40	External 60

COURSE OUTCOMES

On the completion of Course the student will be able to

- know the History of the locality.
- realise the contribution of forefathers to freedom struggle.
- understand the economic growth of Virudhunagar.
- aware of the efforts taken by the philanthropists for the development of education.
- develop the idea of religious toleration.
- imbibe the fame and glory of the area under study.

Course Code 18UHS63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S				L	M		L
CO 2	S	S	S		S	M	M	L	L
CO 3	S	S	S			L	M	M	L
CO 4	S	S	S	M		M	S	L	L
CO 5	S	S		M	L	M	S		L
CO 6				S	L	M	M		L

B.Sc. Mathematics

PROGRAMME SPECIFIC OUTCOMES

- Understands the basic concepts of Advanced Mathematics.
- Acquire strong knowledge in core areas of Mathematics and applications of Mathematics to continue with research.
- Enables the students to investigate and apply mathematical problems and solutions to a variety of contexts related to science.
- Acquire problem solving skills in a broad range of Mathematics.
- Develop abstract Mathematical thinking.
- Communicate Mathematical ideas and arguments both written and orally.
- Equip students with analytic and problem solving skills for careers.

Semester III	STATICS	Hours/Week: 3	
Core Course-5		Credits: 3	
Course Code 18UMTC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- find the resultant of two forces and apply triangle law of forces, Lami's theorem to three forces acting at a point.
- resolve a given force along two perpendicular directions and to determine the resultant of two like and unlike parallel forces.
- determine the condition of equilibrium for three parallel forces and physical significance of moment of a force.
- apply conditions of equilibrium of three forces acting at a point and moment of a force about a fixed line in solving problems.
- apply the trigonometrical theorems to solve any statistical problems.

Course Code 18UMTC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	L
CO 2	S	M	S	S	M	M	M
CO 3	S	M	M	S	M	S	L
CO 4	S	L	S	S	M	M	M
CO 5	S	M	S	S	M	S	L

Semester III	SEQUENCES AND SERIES	Hours/Week: 4	
Core Course-6		Credits: 3	
Course Code 18UMTC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic concepts of sequences and types of sequences with examples.
- find the convergence and divergence of sequences using Cauchy's general principle.
- understand the basic concepts of series and types of series with examples.
- apply different tests for convergence or divergence of a series.
- calculate limit of sequence obtained by combining two or more sequences.

Course Code 18UMTC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	M	S	S	M
CO 2	S	S	M	M	S	M	M
CO 3	S	S	M	M	M	M	M
CO 4	S	S	M	S	L	M	M
CO 5	S	S	M	M	L	L	L

Semester III	OPERATIONS RESEARCH	Hours/Week: 6	
Allied Course -II		Credits: 4	
Course Code 18UAMA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- have an overview of special classes of linear programming problems
- turn real life problems into formation of models
- develop the skills of formulation of linear programming problems and different techniques to solve it.
- allocate scarce sources to optimise and maximize profit .
- analyse the decision making process, explain and predict how individuals behave in a specific strategic situation.

Course Code 18UAMA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	M	M	S	-	-
CO 2	-	S	M	M	-	-	-
CO 3	S	M	M	S	-	-	
CO 4	-	L	M	M	-	-	-
CO 5	-	M	M	M	M	-	-

Semester III	MAT LAB - PRACTICAL	Hours/Week: 2	
SEC 2		Credits: 2	
Course Code 18UMTS31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- get a basic knowledge about MATLAB.
- familiarize with the MATLAB tools and its applications to various mathematical problems.

Semester III	QUANTITATIVE APTITUDE	Hours/Week: 2	
NMEC- 1		Credits: 2	
Course Code 18UMTN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic principles of mathematics for the other major students.
- enhance their analytical ability and computational skills.
- use appropriate arithmetical, and/or statistical methods.
- appear for competitive examinations with more confidence
- solve mathematical problems with in a limited timeframe

Course Code 18UMTN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	-	L	-	-	-	S
CO 2	M	-	M	S	-	-	S
CO 3	M		-	M	-	-	S
CO 4	-	-	-	M	-	-	S
CO 5	-	-	-	M	-	-	S

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand **the economic development and the various sectors of Indian Economy.**
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	DYNAMICS	Hours/Week: 3	
Core Course-7		Credits: 3	
Course Code 18UMTC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- analyse the motion of projected particles in any direction and velocity.
- understand the notions such as greatest height, time of flight and the horizontal range of a projectile.
- solve Simple Harmonic Motion equation and study the geometrical representation of a S.H.M.
- find radial and transverse components of velocity and acceleration.
- identify the Pedal equation of central orbits and find the equation of orbit by using law of force.

Course Code 18UMTC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	S	S	M	S	L
CO 2	S	M	S	S	M	S	L
CO 3	L	-	L	S	S	S	M
CO 4	S	L	S	S	S	M	L
CO 5	S	-	S	S	L	-	-

Semester IV	TRIGONOMETRY AND VECTOR CALCULUS	Hours/Week: 4	
Core Course-8		Credits: 3	
Course Code 18UMTC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- convert a scalar valued function into a vector valued function using the del operator.
- calculate divergence and curl of a vector valued function.
- evaluate double and triple integrals using the concept of Green's Stokes and Gauss theorem.
- expand any trigonometric function in powers of θ from the generalized expansion of trigonometric function.
- identify the hyperbolic functions and find their inverses.

Course Code 18UMTC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	L	L	M	-	-	-
CO 2	S	L	M	M	-	-	-
CO 3	S	L	M	L	-	-	
CO 4	M	L	M	S	-	-	M
CO 5	S	L	L	M	-	-	L

Semester IV	PROGRAMMING IN C	Hours/Week: 4	
Allied Course-II		Credits: 4	
Course Code 18UAMA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the fundamentals of C Programming .
- choose the loops and decision making statements to solve the problem.
- use functions to solve the given problem.
- understand pointers, structures and unions.
- file operations in C programming for a given application.

Course Code 18UAMA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	M	M	M	-	-	S
CO 2	M	M	M	M	-	-	S
CO 3	M	M	L	L	-	-	M
CO 4	M	M	M	L	-	-	M
CO 5	M	M	M	M	-	-	M

Semester IV	C - PRACTICAL	Hours/Week: 2	
Allied Course-II		Credits: 2	
Course Code 18UAMA41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic programming structure of C language
- develop C programs to solve mathematical equations
- implement programs with effective use of C-features including arrays, functions and structures

Semester IV	TRANSFORMS	Hours/Week:2	
SEC-3		Credits: 2	
Course Code 18UMTS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the concept of Fourier transforms and its properties.
- understand the notion of Parseval's identity and other related identities.
- understand the definition and linear property of Z-transforms in discrete system.
- evaluate the inverse Z-transforms using power series and partial fraction methods.
- apply Z-transforms to find the solution of linear difference equations with constant coefficients

Course Code 18UMTS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	L	S	M
CO 2	M	L	M	S	L	L	-
CO 3	S	M	S	S	M	L	-
CO 4	-	S	-	S	L	-	-
CO 5	M	S	S	S	L	-	L

Semester IV	STATISTICS AND OPERATIONS RESEARCH	Hours/Week:2	
NMEC-2		Credits: 2	
Course Code 18UMTN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand in a single effort the significance of the whole using the statistical constants.
- estimate the value of the dependent variable for a given value of the independent variable using the fitted straight line.
- compare the price of a commodity at a particular period with the price of the same commodity at a previous period of time
- make decision in a competitive situation using game theory.
- give an appropriate order for a series of jobs to be done on a finite number of machines

Course Code 18UMTN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	L	-	-	-
CO 2	S	L	M	M	-	-	-
CO 3	S	M	-	S	-	-	-
CO 4	M	-	-	S	-	-	-
CO 5	-	L	-	S	-	-	-

Semester IV	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	Hours/Week:2	
SEC-1		Credits: 2	
Course Code 18UCOS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- appear for various competitive examinations.
- acquire right skills to tackle aptitude problems.
- improve mental calculations.
- improve the speed of solving problems
- solve problems with ease and confidence.

Course Code 18UCOS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	M	S	-	-	S
CO 2	-	-	M	S	-	-	S
CO 3	L	-	M	S	L	-	S
CO 4	-	-	M	S	-	-	S
CO 5	-	-	M	S	-	-	S

Semester III	RESOURCE MANAGEMENT TECHNIQUES	Hours/Week: 4	
Allied Course - I		Credits: 4	
Course Code 18UCSA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- provide an optimal transportation schedule.
- determine an optimum order quantity (EOQ) with the objective of minimizing total inventory cost.
- find out the optimum waiting time.
- find the shortest route in the given network routing problem.
- find the minimum total cost and the minimum project completion time of the given project.

Course Code 18UCSA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	L	L	M	-	-	L
CO 2	S	M	M	L	-	-	M
CO 3	S	L	L	-	-	-	L
CO 4	S	S	M	S	-	-	M
CO 5	S	M	M	M	-	-	M

Semester IV	QUANTITATIVE APTITUDE	Hours/Week: 4	
Allied Course		Credits: 4	
Course Code 18UCSA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- appear for various competitive examinations.
- acquire right skills to tackle aptitude problems.
- improve mental calculations.
- improve the speed of solving problems
- solve problems with ease and confidence.

Course Code 18UCSA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	S	S	-	-	S
CO 2	-	-	M	S	-	-	S
CO 3	-	M	S	S	-	L	S
CO 4	-	-	M	S	-	-	S
CO 5	-	-	-	-	-	-	S

Semester V	MODERN ALGEBRA	Hours/Week: 5	
Core Course-9		Credits: 4	
Course Code 18UMTC51		Internal 25	External 75

COURSE OUTCOMES

On completing this course students will be able to

- get a basic idea on functions which is the root in all the branches of Mathematics.
- understand the algebraic structure of a group which has many important applications in Chemistry and Physics.
- know normal subgroups which is used to construct quotient groups of a given group.
- gain the knowledge about the algebraic system with two binary operations which is very useful in cryptography.
- know the fundamental algebraic structure- field which is widely used in algebra, number theory and many other areas of Mathematics.

Course Code 18UMTC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	L	-	S	S	-
CO 2	S	M	S	-	S	S	-
CO 3	S	-	-	-	S	M	-
CO 4	S	M	S	-	S	S	-
CO 5	S	S	M	-	S	S	-

Semester V	REAL ANALYSIS	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UMTC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- describe fundamental properties of real numbers that lead to the formal development of real analysis.
- know basic properties of closed sets, open sets, compact sets and metric spaces
- gain in-depth knowledge on the properties of real numbers that allows many interconnections with other mathematical areas.
- differentiate between countable and uncountable sets and give examples for them.
- construct rigorous mathematical proofs of basic results in real analysis

Course Code 18UMTC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	S	-	-
CO 2	S	S	M	M	S	-	-
CO 3	S	S	S	M	S	-	-
CO 4	S	S	M	S	S	M	-
CO 5	S	S	M	S	S	M	-

Semester V	NUMERICAL METHODS	Hours/Week: 5	
Core Course-11		Credits: 4	
Course Code 18UMTC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- solve an algebraic or transcendental equation using an appropriate numerical method
- understand the use of interpolation methods to find missing values in given tabulated data.
- select appropriate numerical methods for solving various types of problems in engineering and science.
- comprehend numerical integration and differentiation in solving ODE.
- apply numerical methods to obtain approximate solutions to mathematical problems.

Course Code 18UMTC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	M	M	S	-	-	L
CO 2	S	-	M	M	-	-	L
CO 3	-	M	S	M	-	-	M
CO 4	S	M	S	M	-	-	-
CO 5	M	M	S	S	-	-	L

Semester V	STATISTICS I	Hours/Week: 4	
Core Course-12		Credits: 4	
Course Code 18UMTC54		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- determine the few statistical constants to characterize nature of the curve.
- find the correlation coefficient used to measure the degree of relationship between the variables.
- measure qualities that cannot be measured quantitatively.
- calculate index numbers which is an indispensable tool for economics and business.
- understand the basic concept of probability for uncertain events in our daily life.

Course Code 18UMTC54	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	-	-	S
CO 2	S	S	M	L	-	-	M
CO 3	S	S	M	L	L	-	-
CO 4	S	M	M	M	-	-	M
CO 5	S	M	M	S	M	-	M

Semester V	GRAPH THEORY	Hours/Week: 5	
DSEC Course-1		Credits: 4	
Course Code 18UMTE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- model the real world problems using Graph Theory
- apply the concept of graph connectivity theories in network applications, routing transportation networks, network tolerance etc.
- apply Graph Theory concepts such as Eulerian and Hamiltonicity in the area of networks resulting in games, routing communication and security problems.
- *apply the concept of planarity* in computational geometry and in determining the isomorphism of chemical structures
- execute the graph colouring techniques in real time applications such as Job scheduling, Aircraft scheduling, Time table scheduling etc.

Course Code 18UMTE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	-	M	M	M
CO 2	S	S	M	-	M	M	M
CO 3	S	S	M	M	M	S	M
CO 4	S	S	M	-	M	M	-
CO 5	S	S	S	M	M	M	S

Semester V	AUTOMATA THEORY	Hours/Week: 5	
DSEC-1		Credits: 4	
Course Code 18UMTE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- improve programming skills and software development.
- study various automata such as deterministic and non – deterministic finite state machines, turing machines.
- make connections between theoretical results and regular –expression libraries.
- use standard algorithms to transform automata and languages in various ways.
- Study formal languages of different kinds such as regular and context free languages.

Course Code 18UMTE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	M	-	L	M	-	-
CO 2	M	L	-	-	M	-	-
CO 3	M	L	-	-	M	-	-
CO 4	S	L	-	-	S	-	-
CO 5	S	M	-	-	S	-	-

Semester V	STOCHASTIC PROCESSES	Hours/Week: 5	
DSEC Course-1		Credits: 4	
Course Code 18UMTE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- learn the transition probabilities and their classifications.
- get an idea about Markov chain.
- thoroughly explain the meaning of Markov processes with continuous state space, especially Brownian motion and diffusion processes.
- apply the Poisson process in incoming telephone calls, arrival of customers for services, occurrence of accidents at a certain place etc.
- apply the concept of the birth- death process in Queuing theory.

Course Code 18UMTE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	S	-	M	-	-
CO 2	S	M	S	L	-	-	M
CO 3	S	M	S	-	-	-	M
CO 4	S	M	M	S	-	-	S
CO 5	S	L	M	M	-	-	M

Semester V	SUMMATION OF SERIES	Hours/Week: 2	
SEC-4		Credits: 2	
Course Code 18UMTS51		Internal 40	External 60

COURSE OUTCOMES:

On completion of this course, the students will be able to

- enhance the skill in summing up the various types of series to be applied in higher studies.
- understand the concept of binomial series and use this to find the approximate values
- find the sums of certain exponential series
- understand the use of different forms of logarithmic series
- apply the abstract concept of limits of sequences in applied mathematics.

Course Code 18UMTS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	M	S
CO 2	S	S	S	S	M	M	M
CO 3	S	S	S	S	-	M	S
CO 4	S	S	S	S	L	L	L
CO 5	S	S	M	S	M	M	M

Semester V	MATHEMATICAL MODELLING	Hours/Week: 2	
SEC-5		Credits: 2	
Course Code 18UMTS52		Internal 40	External 60

COURSE OUTCOMES:

On completion of this course, the students will be able to

- assemble a mathematical model for a range of physical situations.
- apply analytical techniques to solve a mathematical model
- frame a first order differential equation for real life problems and solve them.
- draw inferences from models using mathematical techniques including graphs.
- take an analytical approach to problems in day to day life.

Course Code 18UMTS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	S
CO 2	S	S	S	S	S	S	S
CO 3	S	M	S	S	S	S	M
CO 4	S	S	S	M	M	M	M
CO 5	L	M	S	S	S	M	M

Semester V	ARITHMETIC ABILITY	Hours: 0	
Self study paper		Credits: 2	
Course Code 18UMT051		Internal 50	External ----

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic concepts of Quantitative Aptitude.
- acquire satisfactory competency in Aptitude skills.
- improve their employability skills.
- enhance their problem solving skills and reasoning ability.
- compete various exams like CAT, Railway ,GATE, UPSC, TNPSC, Bank etc...

Course Code 18UMT051	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	M	S	-	-	S
CO 2	-	-	M	S	-	-	S
CO 3	-	-	-	-	-	-	S
CO 4	-	-	M	S	-	-	S
CO 5	-	-	M	-	M	-	S

Semester VI	LINEAR ALGEBRA	Hours/Week: 6	
Core Course-13		Credits: 4	
Course Code 18UMTC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the concepts of vector spaces and subspaces.
- recognize the concepts of the span, linear independence, basis, and dimension.
- compute inner products on a vector space and orthogonality in inner product spaces.
- find eigen values and eigen vectors.
- compute the power of a similar matrix.

Course Code 18UMTC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	S	-	-
CO 2	S	S	M	S	S	-	-
CO 3	S	M	M	M	S	-	-
CO 4	S	S	S	M	M	M	-
CO 5	S	S	S	S	M	M	-

Semester VI	COMPLEX ANALYSIS	Hours/Week: 6	
Core Course-14		Credits: 4	
Course Code 18UMTC62		Internal 25	External 75

COURSE OUTCOMES

On completing this course students will be able to

- comprehend and construct analytic functions.
- find the image of two dimensional figures using some transformations.
- know the powerful technique Contour integration, that allows them to calculate certain integrals that are otherwise difficult or impossible to do.
- grasp the idea of convergence of a power series which is useful in Analysis.
- understand the concept of residues which is useful in evaluating the values of certain definite integrals.

Course Code 18UMTC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	L	-	-	M	L
CO 2	S	M	-	M	M	-	-
CO 3	S	M	L	M	-	-	-
CO 4	S	S	-	-	S	M	-
CO 5	S	M	-	M	-	M	L

Semester VI	DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS	Hours/Week: 6	
Core Course-15		Credits: 4	
Course Code 18UMTC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- solve the problems choosing the most suitable method.
- build solutions to differential equations by superposition of known solutions.
- thorough with fundamental concepts of ODE and PDE
- sense the essential difference between ODE and PDE.
- incorporate the concept of Laplace Transform in solving differential equations.

Course Code 18UMTC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	M	S	S	-	-	L
CO 2	L	M	M	M	-	-	-
CO 3	S	M	M	S	-	-	-
CO 4	S	M	M	M	-	-	-
CO 5	-	M	-	S	-	-	-

Semester VI	STATISTICS - II	Hours/Week: 5	
Core Course-16		Credits: 4	
Course Code 18UMTC64		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- distinguish between discrete and continuous random variables.
- apply the binomial distribution in social sciences and poisson distribution to describe the behaviour of rare events.
- know the properties of normal distribution and to find the probability of an event that lies between certain limits.
- test whether there is any significance difference between the sample statistic and the population parameter.
- apply χ^2 -Test to test the population variance, the independence attributes and to test the goodness of fit.
- test the homogeneity of several means using ANOVA technique.

Course Code 18UMTC64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	M	S	L	-	-
CO 2	S	S	M	S	L	-	L
CO 3	S	L	L	M	L	L	L
CO 4	S	S	S	S	S	M	M
CO 5	S	S	S	M	M	-	L
CO 6	S	S	S	M	L	-	L

Semester VI	BOOLEAN ALGEBRA AND LATTICES	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UMTE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- generalize the concept of ordering the elements of the set.
- acquire knowledge in lattices and its properties applicable in cryptography.
- construct the algebraic structure of lattices which are applied in branches of all sciences.
- understand the concept of Boolean algebra which is the mathematical foundation of switching algebra and its application to computers.
- comprehend Conjunctive Normal Form and Disjunctive Normal Form structures which are useful in electrical networks.

Course Code 18UMTE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	M	-	-
CO 2	S	S	M	S	M	M	-
CO 3	S	M	M	S	M	-	-
CO 4	S	S	M	S	M	M	-
CO 5	S	M	M	S	-	-	-

Semester VI	OPTIMIZATION TECHNIQUES	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UMTE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- get solution to the primal problem using its dual, when it is easier to solve.
- solve different types of Integer Programming Problems.
- determine replacement of items, to minimize the maintenance and investment cost in industries.
- calculate economic order quantity which minimizes the total inventory cost and ordering cost.
- understand and analyze various queueing situations.

Course Code 18UMTE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	M	M	-	-	-
CO 2	S	M	M	M	-	-	M
CO 3	S	M	M	S	-	-	M
CO 4	S	S	M	S	-	-	M
CO 5	S	M	M	S	-	-	M

Semester VI	ASTRONOMY	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UMTE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- derive various trigonometric formulas for spherical triangles.
- know about the motion of celestial objects.
- explain how astronomical distance are determined using parallax technique.
- analyze the effect of refraction takes place in celestial bodies.
- understand the Kepler's law of planetary motion, describing the motion of planets around the sun.

Course Code 18UMTE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	S	S	-	-	-
CO 2	S	S	S	M	-	-	-
CO 3	S	S	S	M	-	-	-
CO 4	S	M	M	M	-	-	-
CO 5	S	S	M	M	-	-	-

Semester VI	NUMERICAL METHODS USING C	Hours/Week: 2	
SEC-6		Credits: 2	
Course Code 18UMTS61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- solve algebraic and transcendental equations by using Bisection Method , Regula Falsi Method and Newton Raphson Method.
- solve a system of linear equations using Gauss Elimination method.
- estimate the missing data through interpolation methods.
- develop skills in solving the problems involving numerical differentiation and integration.

B.Sc Physics

PROGRAMME SPECIFIC OUTCOMES

The students of B.Sc. Physics degree Programme will be able to

1. relate conceptual understanding of the physics to real-world situations
2. assimilate experimental skills.
3. be acquainted with various fields of Physics such as Mechanics, Properties of matter, Heat & Thermodynamics, Optics, Electricity and electromagnetism .
4. apply discipline-based and cross-discipline-based knowledge to elucidate a problem.
5. analyse a wide range of physical phenomena with the knowledge acquired from Classical mechanics, Quantum mechanics, Mathematical Physics and Statistical Mechanics.
6. identify their interest in specific academic and research area.
7. function effectively as an individual, and in assorted teams.
8. inculcate ethical principles and discharge social responsibilities in the issues related to energy, environment and nature.
9. get wide range of employability opportunities with their analytical thinking and systematic approach of the subject.

Semester III	OPTICS	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UPHC31N		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get an idea about the geometrical and physical nature of light.
- understand the geometrical aspects of light and to the design of optical systems with an emphasis on image forming systems.
- analyze and understand the phenomenon of interference of light waves.
- gain an insight into the theories of diffraction and comprehend the concepts of polarization of light.
- know about the construction and classification of fibers.
- acquire basic idea about molecular spectroscopy.

Course Code 18UPHC31N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	-	M	M	-	-	L
CO 2	S	S	S	-	M	L	-	-	M
CO 3	S	S	S	S	M	-	L	M	M
CO 4	S	S	S	S	S	M	-	L	M
CO 5	S	S	M	S	-	S	-	M	M
CO 6	S	-	S	-	S	S	-	-	M

Semester III	BASIC ELECTRONICS	Hours/Week: 4	
Allied Course-II		Credits: 4	
Course Code 18UEIA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyze the concepts and working of electronic devices.
- understand the design and function of various solid state devices.
- get an idea about the properties of semiconductors and rectifiers.
- explain the structure and operation of transistor and analyze the various biasing circuits.
- apply the circuit theorems to analyze electronic circuits.
- understand the operation and application of amplifier circuits using transistors

Corse Code 18UEIA31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	S	M	M	M	M	M	M
CO2	S	S	L	M	L	M	M	M	M
CO3	S	S	L	M	M	L	L	M	M
CO4	S	S	-	M	L	L	M	L	M
CO5	S	S	L	M	M	L	L	L	M
CO6	S	S	L	M	M	M	M	M	S

Semester III	SOLAR ENERGY	Hours/Week: 2	
SEC - 2		Credits: 2	
Course Code 18UPHS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamental aspects of renewable energy source and its applications.
- know the basis of solar energy.
- understand the principle of solar thermal gadgets.
- design and estimate thermal efficiency of solar thermal gadgets.
- know about the solar cell classification and selection of materials.
- acquaint with Solar photovoltaic systems, PV Module and PV applications.

Course Code 18UPHS31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	S	M	L	S	L	S	M
CO2	S	M	S	M	L	S	L	S	S
CO3	S	S	S	M	L	S	M	S	S
CO4	S	S	S	M	L	S	S	S	S
CO5	S	M	M	S	L	S	L	M	S
CO6	S	M	S	M	L	S	S	S	S

Semester III	PHYSICS IN EVERYDAY LIFE	Hours/Week: 2	
Course- NMEC-1		Credits: 2	
Course Code 18UPHN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain an insight into the Physics of home appliances used in everyday life.
- get a knowledge about basic principles of fuse and lamp circuits in house.
- understand the principles and working of electrical appliances used in kitchen.
- acquire basic idea about the principles behind and working of commonly used things in bathroom.
- have a foundation of the mechanism of appliances used in living room.

Course Code 18UPHN31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	M	S	-	L	-	S	L
CO2	S	M	M	M	-	L	-	S	L
CO3	S	L	L	M	-	-	-	S	M
CO4	S	L	M	M	-	L	L	S	M
CO5	S	L	M	M	-	L	L	S	M

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		<u>Internal</u> 100	<u>External</u> -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		<u>Internal</u> 100	<u>External</u> -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		<u>Internal</u> 100	<u>External</u> -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand **the economic development and the various sectors of Indian Economy.**
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster.

Semester IV	MODERN PHYSICS	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 18UPHC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of Atomic and quantum mechanics.
- gain an insight into the theories of various atom model.
- understand the concept of Zeeman Effect, Photo electric effect and the characteristic properties of X – Rays.
- know the formalism of wave function and Schrodinger equation.
- solve the Schrodinger equation for various potential functions.
- understand the relativistic variation of length, time and mass

Course Code 18UPHC41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	-	S	M	S	M	L	S	M
CO2	S	L	S	M	S	M	-	M	-
CO3	S	-	S	S	S	M	L	M	M
CO4	S	-	S	S	S	M	L	-	M
CO5	S	-	M	L	M	-	-	-	-

Semester IV	ELECTRONIC DEVICES AND INSTRUMENTATION	Hours/Week: 4	
Allied Course-2		Credits: 4	
Course Code 18UEIA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the operation of electronic instruments and their measuring techniques.
- describe different terminology related to measurements.
- analyze various wave forms with the help of storage oscilloscope.
- know about basic switching devices and their operation in measurements.
- know the applications of various types of transducers

Course Code 18UEIA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	-	L	S	-	S
CO 2	S	S	S	S	L	M	S	M	S
CO 3	S	S	S	S	L	M	M	M	S
CO 4	S	S	M	M	M	M	M	M	S
CO 5	S	S	M	M	L	M	M	M	S

Semester IV	ASTROPHYSICS	Hours/Week: 2	
SEC-3		Credits: 2	
Course Code 18UPHS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the basic laws of Physics to explore the astronomical and astrophysical concepts.
- gain knowledge about the properties of the sun.
- know about characteristics and evolution of stars.
- understand the different types of galaxies.
- have an idea about cosmology.
- know about the fundamentals of Astronomical instruments.

Course Code 18UPHS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	M	M	-	M	L
CO 2	S	-	S	S	S	M	-	M	L
CO 3	S	-	S	M	S	M	-	M	L
CO 4	S	-	M	M	M	L	-	M	M
CO 5	S	-	M	L	L	L	-	-	L

Semester IV	FUNDAMENTALS OF ELECTRONICS	Hours/Week: 2	
NMEC-2		Credits: 2	
Course Code 18UPHN41		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

- understand the basic concepts of electronics.
- know about the concepts of amplifier and oscillator.
- have an idea about modulation.
- get an in depth knowledge about number system.
- explain the Boolean laws and binary address.
- understand the basic concepts of logic gates.

Course Code 18UPHN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	S	M	L	M	M
CO 2	S	M	S	M	S	S	L	M	L
CO 3	S	S	S	S	S	M	M	M	M
CO 4	S	L	S	M	L	S	L	M	L
CO 5	S	L	S	S	S	S	M	M	-

Semester III	ALLIED PHYSICS-I	Hours/Week: 4	
Allied Course- 1		Credits: 4	
Course Code 18UPHA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- gain knowledge about on Mechanics and theory of Relativity.
- know about properties of materials.
- Understand the concept of entropy
- Know the fundamental of electricity

Semester IV	ALLIED PHYSICS-II	Hours/Week: 4	
Allied Course- 2		Credits: 4	
Course Code 18UPHA41		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students shall be able to

- understand the concepts of Refraction of light through prism and aberration in lens.
- acquire the knowledge of interference, diffraction and polarisation.
- know about the basics of analog electronics.
- comprehend the basics of digital electronics

Semester V	NUCLEAR AND PARTICLE PHYSICS	Hours/Week: 4	
Core Course -7		Credits: 4	
Course Code- 18UPHC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire basic knowledge about the properties of nuclei
- explain the different forms of radioactivity, explore theories of nuclear decays and nuclear reactions
- understand the principles of nuclear reactions, the nuclear fission and fusion reactions
- acquire the knowledge of different accelerators& detectors and understanding of cosmic rays
- understand the classification, properties of elementary particles and the concept behind INO

Course Code 18UPHC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	M	S	L	-	-	L
CO 2	S	-	S	M	S	M	M	S	M
CO 3	S	-	S	S	S	M	L	S	M
CO 4	S	-	S	M	S	S	L	M	S
CO 5	S	-	S	M	S	S	M	M	M

Semester V	ANALOG ELECTRONICS	Hours/Week: 4	
Core Course - 8		Credits: 4	
Course Code- 18UPHC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire basic and practical knowledge about oscillators
- understand the concept of multivibrators
- get knowledge about the different types of modulation
- understand the concept of Voltage regulators
- grasp the practical knowledge about Operational Amplifiers

Course Code 18UPHC52 & 18UPHC62P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	M	M	M	M
CO 2	S	S	S	M	S	S	L	M	M
CO 3	S	S	S	S	M	M	L	M	S
CO 4	S	S	S	S	M	S	M	M	S
CO 5	S	S	S	S	S	S	M	M	S

Semester V	CLASSICAL AND STATISTICAL MECHANICS	Hours/Week: 4	
Core Course - 9		Credits: 4	
Course Code 18UPHC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand basic mechanical concepts related mechanical systems
- realize the conservation theorems concerning with linear momentum, angular momentum and energy
- grasp the concept of Lagrangian Formulation
- represent the equations of motion for complicated mechanical systems using the Hamiltonian formulation
- understand the Boltzmann's theorem connecting entropy and probability
- gain the applications of statistical physics

Course Code 18UPHC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	M	S	S	M
CO 2	S	M	S	S	S	M	S	S	M
CO 3	S	-	S	M	S	M	L	-	-
CO 4	S	-	S	M	S	M	M	-	-
CO 5	S	-	S	M	S	M	M	-	M

Semester V	SOLID STATE PHYSICS	Hours/Week: 4	
DSEC - 1		Credits: 4	
Course Code 18UPHE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire the role of solid state physics in the field of physics.
- understand the crystal structure.
- know the different types of bonding in the crystal.
- get an in-depth knowledge about the defects in solids.
- provide a foundation of free electron theory.
- gain knowledge about effective mass and Hall effect.

Course Code 18UPHE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	S	M	M	M	S
CO 2	S	M	S	S	S	S	S	M	M
CO 3	S	L	S	S	S	M	L	M	M
CO 4	S	L	S	S	S	M	L	M	M
CO 5	S	-	S	S	S	-	-	M	M

Semester V	SPECTROSCOPY	Hours/Week: 4	
DSEC - I		Credits: 4	
Course Code- 18UPHE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the interactions of electromagnetic radiation and matter and their applications in spectroscopy.
- identify the transitions between the vibrational energy levels of molecules occur in the infrared region
- get insight into Raman spectroscopy
- apply the techniques and instrumentation to understand electron spectra of diatomic molecules
- analyze the properties of diatomic molecule using Microwave spectroscopy

Course Code 18UPHE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	S	M	S	M	-	M
CO 2	S	-	M	S	S	S	M	L	M
CO 3	S	-	M	S	S	S	M	-	L
CO 4	S	M	M	S	S	S	M	-	-
CO 5	S	-	M	S	S	S	M	M	L

Semester - V	CELLULAR MOBILE COMMUNICATION	Hours/Week: 4	
DSEC - 1		Credits: 4	
Course Code- 18UPHE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire knowledge about mobile Communication
- understand the concepts of digital modulation techniques
- acquire knowledge about mobile propagation
- gain knowledge about digital cellular systems
- know about the mobile communication standards

Course Code 18UPHE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	S	S	M	M	S
CO 2	S	L	M	M	S	M	M	M	M
CO 3	S	-	S	M	M	L	-	M	S
CO 4	S	-	-	M	M	L	L	M	S
CO 5	S	-	-	M	M	L	L	M	S

Semester V	MICROPROCESSOR	Hours/Week: 2	
SEC -5		Credits: 2	
Course Code- 18UPHS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the pinout diagram of Microprocessor 8085
- know the architecture of Microprocessor 8085
- study about the instructions of Microprocessor 8085
- provide a foundation of programming principles using Microprocessor 8085.
- gain knowledge about stack and subroutine.

Course Code 18UPHS51& 18UPHC63P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	M	-	L	M	M	M
CO 2	S	L	-	L	-	M	M	L	M
CO 3	S	S	L	M	L	L	M	M	M
CO 4	S	M	L	M	M	M	M	-	M
CO 5	M	M	-	M	M	L	M	M	M

Semester VI	MATHEMATICAL PHYSICS	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UPHC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the various theorems and its applications in Vectors.
- learn about special type of matrices that are relevant in Physics.
- impart basic Knowledge in Beta, Gamma and Error functions.
- get insight into applications of Fourier series and Integrals
- get familiar with the special functions like Legendre, Bessel and Hermite functions.
- understand the Physics concept behind the Mathematical principle.

Course Code 18UPHC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	S	M	L	-	M
CO 2	M	-	M	S	S	M	M	-	L
CO 3	S	-	M	S	S	M	L	-	L
CO 4	S	-	M	S	S	S	M	-	S
CO 5	M	-	M	S	S	S	M	-	M
CO 6	S	-	S	S	S	S	-	-	S

Semester VI	DIGITAL ELECTRONICS	Hours/Week: 5	
Core Course -11		Credits: 4	
Course Code 18UPHC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand Binary codes and Boolean algebra.
- design arithmetic and logic circuits.
- realize the designing of encoder and decoder
- know the basics of construction of flip-flop
- understand the techniques and designing of counters, Registers and converters

Course Code 18UPHC62 & 18UPHC63P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S	M	L	M	-	S
CO 2	S	S	S	S	S	M	M	-	M
CO 3	S	S	L	M	M	M	L	L	M
CO 4	S	S	M	M	M	M	-	L	M
CO 5	S	S	M	M	S	M	M	L	M

Semester VI	NANO SCIENCE	Hours/Week: 5	
Core Course - 12		Credits: 4	
Course Code 18UPHC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of Nano Science
- get an in-depth knowledge about the synthesis of Nano materials
- study the various characterization techniques of Nano materials
- gain knowledge about the properties of Nano materials
- know the applications of Nanotechnology

Course Code 18UPHC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	M	S	M	S	M
CO 2	S	M	M	S	M	S	M	M	M
CO 3	S	S	M	S	L	S	L	M	M
CO 4	S	M	M	S	M	S	L	M	M
CO 5	S	L	M	S	M	S	L	M	M

Semester VI	MATERIAL SCIENCE	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code 18UPHE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- study properties & uses of dielectric materials.
- realize the basic ideas of conducting materials
- grasp the concept of super conducting material
- understand the basics of new materials
- appreciate the optical of materials

Course Code 18UPHE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	L	S	M
CO 2	S	M	S	S	S	S	L	S	M
CO 3	S	-	S	S	S	S	-	S	M
CO 4	S	-	S	S	S	S	-	S	M
CO 5	S	M	S	S	S	S	L	S	M

Semester VI	MEDICAL PHYSICS	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code 18UPHE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- appreciate the role of Physics in the field of Medicine.
- understand the types of electrodes.
- knowabout the transducers.
- study about ECG and EEG.
- Know about pacemeakers.
- gain knowledge about CT and MRI Scan.

Course Code 18UPHE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	S	L	M	L	-	M
CO 2	S	L	M	M	L	M	-	M	S
CO 3	S	L	M	M	L	M	L	L	M
CO 4	S	L	S	M	-	M	L	S	M
CO 5	S	M	S	M	S	M	M	S	S

Semester VI	MICROCONTROLLER 8051	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code- 18UPHE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire the concept of Microcontroller architecture
- understand the instruction set and develop the programming skills
- acquire practical knowledge about 8051 microcontroller
- acquire knowledge about interfacing concept
- understand the concept of memory interfacing

Course Code 18UPHE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	M	S	L	M	L	M
CO 2	S	M	-	L	M	-	M	-	M
CO 3	S	M	-	L	M	-	L	L	M
CO 4	S	M	-	L	M	-	L	L	M
CO 5	S	M	-	M	S	L	M	L	M

Semester VI	COMMUNICATION ELECTRONICS	Hours/Week: 2	
SEC - 6		Credits: 2	
Course Code- 18UPHS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire basic knowledge about the digital communication systems.
- gain the Digital data transmission and Error control coding.
- understand the concept of Network hardware.
- acquire knowledge about wireless transmission.
- understand the principles of satellite communication

Course Code 18UPHS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	L	M	L	-	M
CO 2	S	M	S	M	-	M	L	-	M
CO 3	S	S	M	M	-	M	M	-	M
CO 4	S	S	M	M	-	M	-	-	M
CO 5	S	S	S	S	M	S	S	L	M

Semester VI	PHYSICS FOR COMPETITIVE EXAMINATION	0 Hours
Extra Credit		Credits: 2
Course Code- 18UPHO61		Internal : 100 Marks

COURSE OUTCOMES

On completion of the course, the students will be able to

- invigorate principle involved in Mechanics Electricity, Atomic and Nuclear Physics
- apply the basic principles of Physics in solving problems
- develop problem solving skill
- excel in competitive examinations

Semester III	OPTICS	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UPHC31N		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get an idea about the geometrical and physical nature of light.
- understand the geometrical aspects of light and to the design of optical systems with an emphasis on image forming systems.
- analyze and understand the phenomenon of interference of light waves.
- gain an insight into the theories of diffraction and comprehend the concepts of polarization of light.
- know about the construction and classification of fibers.
- acquire basic idea about molecular spectroscopy.

Course Code 18UPHC31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	S		M	M			L
CO2	S	S	S		M	L			M
CO3	S	S	S	S	M		L	M	M
CO4	S	S	S	S	S	M		L	M
CO5	S	S	M	S		S		M	M
CO6	S		S		S	S			M

Semester I /III	ALLIED PHYSICS-I	Hours/Week: 4	
Allied Course- 1		Credits: 4	
Course Code 18UPHA11/		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students shall be able to

- gain knowledge about on Mechanics and theory of Relativity.
- know about properties of materials.
- Understand the concept of entropy
- Know the fundamental of electricity

Semester II	ALLIED PHYSICS-II	Hours/Week: 4	
Allied Course- 2		Credits: 4	
Course Code 18UPHA21/ 18UPHA41		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students shall be able to

- understand the concepts of Refraction of light through prism and aberration in lens.
- acquire the knowledge of interference, diffraction and polarisation.
- know about the basics of analog electronics.
- comprehend the basics of digital electronics

Course Code 18UPHC21& 18UPHC21P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	-	M	M	L	M	L
CO 2	S	M	S	L	S	L	M	M	-
CO 3	S	S	S	S	S	M	L	L	M
CO 4	S	M	S	L	S	S	M	L	S
CO 5	S	-	S	S	S	-	M	L	M
CO 6	S	S	S	L	S	L	-	L	S

B.SC Chemistry

PROGRAMME SPECIFIC OUTCOMES

Students of Under Graduate Chemistry Programme will be able to

1. obtain chemical knowledge concerning the fundamentals in the basic areas of Organic, Inorganic, Analytical, Physical and Biological Chemistry.
2. comprehend the structural difference among solids, liquids, gases and solutions.
3. understand the importance of physical chemistry in the areas of atomic structure, magnetic properties, solid state, thermodynamics, phase rule, chemical kinetics and photochemistry.
4. appreciate the potential of inorganic chemistry in the sections of elements of periodic table, coordination chemistry, types of bonding and bio inorganic chemistry.
5. validate the multiple utility of chemistry in the regions of medicinal chemistry, food chemistry and polymer chemistry.
6. acquire the analytical skills in conducting experiments in the areas of inorganic, organic and physical chemistry.
7. comprehend the proper procedures and regulations for safe handling and use of chemical, standard laboratory equipments, modern instrumentation and classical techniques to carry out experiments.
8. use computers in data acquisition, processing and use available software as a tool in data analysis.
9. develop professional, ethical, environmental and social responsibilities.

Semester III	INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY-I	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UCHC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- inculcate the principle of semi-micro qualitative analysis.
- get knowledge in the synthetic utility of organic reagents.
- study the chemistry and uses of aliphatic nitrogen compounds.
- able to get knowledge of alicyclic compounds and conformational analysis.
- gain basic knowledge on theory of dilute solution and colligative properties.
- understand the symmetry aspects in chemical systems.
- comprehend the importance of point group and its classification.
- apprehend the basic concepts of crystallography.

Course Code 18UCHN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	S	-	-	-	M
CO 2	-	-	-	-	-	-	M	-	S
CO 3	-	-	-	-	S	-	-	-	M
CO 4	L	-	-	-	-	-	-	-	M
CO 5	S	-	-	-	-	-	-	-	S

Semester III	FOOD CHEMISTRY	Hours/Week: 2	
Skill Enhancement Course- 2		Credits: 2	
Course Code 18UCHS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- understand the function of food and biological role of vitamins, carbohydrates, proteins, minerals and water.
- acquire a knowledge about cooking and preservation of food.
- learn more about food additives and their role.
- comprehend the food adulterants and their harmful effects.
- gain knowledge about food poison and first aid for food poisoning.

Course Code 18UCHS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	S	-	-	-	-
CO 2	S	-	-	-	S	-	-	-	-
CO 3	S	-	-	-	S	-	-	-	-
CO 4	S	-	-	-	S	-	M	-	-
CO 5	S	-	-	-	-	-	-	-	-
CO 6									
CO 7									

Semester III	INDUSTRIAL CHEMISTRY	Hours/Week: 2	
Non Major Elective Course - 1		Credits: 2	
Course Code 18UCHN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- comprehend the chemistry of fertilizers, milk products, insecticides and pesticides.
- apprehend about polymer industry, petrochemical industry, nuclear power plants and disposal of nuclear power waste.
- prepare soap, detergent and understand chemistry of cleansing action of soap.

Course Code 18UCHN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	S	-	-	-	M
CO 2	-	-	-	-	-	-	M	-	S
CO 3	-	-	-	-	S	-	-	-	M
CO 4	L	-	-	-	-	-	-	-	M
CO 5	S	-	-	-	-	-	-	-	S
CO 6									
CO 7									

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster.

Semester IV	INORGANIC , ORGANIC AND PHYSICAL CHEMISTRY-II	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 18UCHC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- understand the chemistry of d block elements.
- gain knowledge on nuclear chemistry.
- know how different configurations decide the properties and geometry of organic compounds.
- get an idea about the chemistry of carbohydrates.
- comprehend about oils and fats.
- apprehend the theory and concepts of Quantum mechanics and their application to simple systems.

Course Code 18UCHC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	L	-	-	-	M
CO 2	S	-	-	L	M	L	L	-	S
CO 3	-	-	-	-	-	-	-	-	-
CO 4	S	-	-	-	M	-	-	-	L
CO 5	S	L	-	-	S	-	-	-	M
CO 6	S	M	-	-	S	-	-	-	M
CO 7	S	-	M	-	-	-	-	-	-

Semester IV	LEATHER CHEMISTRY	Hours/Week: 2	
Skill Enhancement Course- 3		Credits: 2	
Course Code 18UCHS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- get a brief history of tanning industry and leather manufacturing processes.
- understand various steps involved in processing of leather.
- know about different tanning methods.
- understand the finishing processes of tanning.
- get an insight of pollution caused by tannery industries and prevention.

Course Code 18UCHS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	-	-	M	-	-
CO 2	S	-	-	M	S	-	-	-	-
CO 3	-	-	-	-	S	-	S	-	-
CO 4	-	-	-	-	S	L	S	-	-
CO 5	-	-	-	-	-	-	-		S

Semester IV	DRUGS AND NATURAL PRODUCTS	Hours/Week: 2	
Non Major Elective Course-2		Credits: 2	
Course Code 18UCHN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know the terminologies of drugs
- comprehend about antibiotics.
- apprehend about chemotherapy
- gain knowledge on the biological role of various vitamins and steroids.
- gain knowledge about the uses of terpenoids.
- know the medicinal uses of alkaloids.

Course Code 18UCHN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	S	-	-	-	-
CO 2	M	-	-	-	S	-	-	-	-
CO 3	-	-	-	-	S	-	-	-	-
CO 4	M	-	-	-	S	-	-	-	-
CO 5	S	-	-	-	-	-	-	-	M
CO 6	S	-	-	-	-	-	-	-	M
CO 7	-	-	-	-	-	-	-	-	-

Semester III	GENERAL CHEMISTRY-I	Hours/Week: 4	
Allied Course-II		Credits: 4	
Course Code 18UCHA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know about the periodicity of properties in the long form of the periodic table.
- gain information about the purification of organic compounds.
- know about the classification of organic reagents and reactions.
- learn the types of adsorption , catalyst and colloids.
- gain knowledge about the laboratory reagents and their uses.
- comprehend the ways of expressing the various concentrations of solutions.
- apprehend the types of pollution, their sources , impacts and preventive measures.

Course Code 18UCHA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	S	-	-	-	-	-
CO 2	S	-	-	-	-	M	-	-	-
CO 3	M	-	-	-	-	S	-	-	--
CO 4	M	-	-	-	-	M	-	-	-
CO 5	S	-	-	-	-	-	S	-	-
CO 6	S	-	-	-	-	-	L	-	-
CO 7	S	-	-	-	-	-	-	-	S

Semester IV	GENERAL CHEMISTRY-II	Hours/Week: 4	
Allied Course-II		Credits: 4	
Course Code 18UCHA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know about the chemistry of biomolecules such as carbohydrates, proteins, amino acids and nucleic acids.
- understand the basic processes of metallurgy.
- know about oils and fats.
- gain knowledge on soaps and detergents.
- comprehend the basic concepts of fuels and fertilizers.
- learn about the hardness of water.
- gain knowledge about the basic principles of spectroscopy and their applications.

Course Code 18UCHA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	-	-	-	-
CO 2	M	-	-	-	-	-	-	-	L
CO 3	-	-	-	L	M	-	-	-	-
CO 4	S	-	-	-	-	-	-	-	M
CO 5	M	-	-	-	-	-	-	-	L
CO 6	M	-	-	-	-	-	-	-	M
CO 7	-	M	-	-	-	-	-	M	-

Semester V	ORGANIC CHEMISTRY-II	Hours/Week: 4	
Core Course-7		Credits: 4	
Course Code 18UCHC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire basic knowledge about aromatic compounds.
- empower the knowledge of chemistry of aromatic halogen compounds, phenols, aromatic alcohols and ethers
- know the importance of aromatic aldehydes, ketones and acids
- comprehend about organosulphur and aromatic nitrogen compounds
- explore the chemistry of polynuclear hydrocarbons
- gain knowledge on heterocyclics

Course Code 18UCHC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	L	L	M	-	L
CO 2	S	S	-	-	S	L	M	-	M
CO 3	S	M	-	-	S	L	L	-	-
CO 4	S	L	-	-	M	M	M	-	-
CO 5	S	M	-	-	L	L	M	-	-
CO 6	S	S	-	-	-	M	M	-	L

Semester V	INORGANIC CHEMISTRY-II	Hours/Week: 4	
Core Course-8		Credits: 4	
Course Code 18UCHC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of coordination chemistry
- empower the knowledge of organometallic compounds
- enrich the chemistry of inorganic polymers.
- know the importance of the inner – transition elements
- explore the chemistry of acids, bases and non aqueous solvents.
- gain knowledge on the role of elements in biology

Course Code 18UCHC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	S	S	L	-	-	L
CO 2	S	S	L	S	-	-	-	-	M
CO 3	S	-	-	L	-	M	S	-	-
CO 4	S	S	M	-	-	-	-	-	L
CO 5	S	S	M	-	-	-	-	-	S
CO 6	S	S	M	S	-	-	-	-	S

Semester V	PHYSICAL CHEMISTRY-I	Hours/Week: 4	
Core Course- 9		Credits: 4	
Course Code 18UCHC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the thermodynamic terms – systems – surroundings, reversible and irreversible processes
- understand the second law of thermodynamics, concept of entropy and its applications
- know about the Third law of Thermodynamics
- know the reaction rates and pathways to understand the energy changes involved in chemical reactions
- know the various photochemical processes in the chemical systems

Course Code 18UCHC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	-	S	-	-	M
CO 2	S	S	S	-	-	S	M	M	S
CO 3	S	S	S	-	-	-	-	M	L
CO 4	S	S	S	L	M	S	L	L	L
CO 5	S	L	S	-	S	-	-	-	M

Semester V	Analytical Methods and Introduction to Computers	Hours/Week: 4	
Discipline Specific Elective1(DSEC 1)		Credits: 4	
Course Code 18UCHE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- inculcate the theory and importance of error analysis in chemical analysis
- get knowledge in the methods of analyzing colorimetric methods.
- understand the Principle of thermo gravimetric analysis
- get knowledge of the chromatographic techniques.
- gain basic knowledge on theory of Instrumentation of NMR, UV and IR.
- get skill in drawing chemdiagrams
- acquire knowledge on internet.

Course Code 18UCHE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	S	M	-	-
CO 2	S	-	-	-	-	S	S	-	-
CO 3	S	-	-	-	-	S	M	-	-
CO 4	S	-	-	-	-	M	S	-	-
CO 5	M	-	-	-	-	-	-	S	-

Semester V	TEXTILE CHEMISTRY	Hours/Week: 4	
Discipline Specific Elective1(DSEC 1)		Credits: 4	
Course Code 18UCHE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the classification of natural fibres and their physical and chemical properties.
- know about different synthetic fibres, their manufacture and properties.
- acquire knowledge about scouring and desizing processes.
- clear idea about bleaching technique.
- acquire knowledge about principles of dyeing, synthesis of dyestuffs and fastness properties. Students should be able to dye different fibres and test various fastness properties.

Semester V	AGRICULTURAL CHEMISTRY	Hours/Week: 4	
Discipline Specific Elective1(DSEC 1)		Credits: 4	
Course Code 18UCHE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the soil and its formation
- know the physical properties of soil and other related aspects
- acquire knowledge about chemistry aspects of soil and nitrogen fixing process
- understand the chemistry of nutrients present in soil
- comprehend the chemistry of pesticides, fungicides and herbicides.

Semester V	NANOTECHNOLOGY	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course- 5			
Course Code 18UCHS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire an idea on basic concepts of Nanotechnology.
- get an exposure of the types of nanomaterials
- comprehend about the fabrication and characterization techniques available in literature.
- apprehend the chemical properties of nanomaterials.
- know the applications of nanomaterials

Course Code 18UCHE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	S	M	-	-
CO 2	S	-	-	-	-	S	S	-	-
CO 3	S	-	-	-	-	S	M	-	-
CO 4	S	-	-	-	-	M	S	-	-
CO 5	M	-	-	-	-	-	-	S	-

Semester VI	ORGANIC CHEMISTRY-III	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UCHC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the basic concepts of UV- visible spectroscopy and photochemistry
- get knowledge about IR, NMR and Mass spectroscopy
- acquire knowledge about chemistry of natural products
- comprehend about biomolecules
- understand the importance of reagents in organic synthesis, molecular rearrangements and theory of dyes

Course Code 18UCHC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	-	-	-	M	-	-
CO 2	S	S	S	-	-	-	S	-	-
CO 3	S	S	-	-	-	-	S	S	-
CO 4	S	S	-	-	-	-	L	-	-
CO 5	S	S	-	-	-	-	L	-	-
CO 6	S	S	S	-	-	S	S	S	M

Semester VI	PHYSICAL CHEMISTRY-II	Hours/Week: 5	
Core Course- 11		Credits: 4	
Course Code 18UCHC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the ionic conductivity
- understand types of electrochemical cells
- understand the transformation of chemical energy into electrical energy
- know about electromagnetic spectrum
- understand the theory of rotational spectroscopy and its applications
- learn about IR and Raman spectroscopy
- know the principle and applications of UV- visible spectroscopy

Course Code 18UCHC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	-	-	S	S	-	M
CO 2	S	L	M	-	-	S	S	-	M
CO 3	S	L	M	-	-	S	S	-	M
CO 4	S	S	M	-	L	S	S	S	M
CO 5	S	S	S	-	M	S	S	S	M
CO 6	S	L	L	-	-	L	-	-	M
CO 7	S	S	S	M	L	S	S	S	L

Semester VI	APPLIED CHEMISTRY	Hours/Week: 5	
Core Course- 12		Credits: 4	
Course Code 18UCHC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- inculcate the importance of micro and macro nutrients in fertilizers
- get knowledge in the petro chemicals and their uses
- understand the raw materials required for match industry and their function
- get knowledge about the types of explosives and fuels and their uses.
- gain basic knowledge on the chemistry of corrosion and prevention.
- understand the manufacture of wine, Beer and power alcohol
- comprehend the cement, glass and ceramic industries.

Course Code 18UCHC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	-	-	-	S
CO 2	S	-	-	-	-	M	S	-	S
CO 3	S	-	-	-	-	M	L	-	S
CO 4	M	-	-	-	S	-	S	-	S
CO 5	S	S	-	-	-	-	-	-	S

Semester VI	MEDICINAL CHEMISTRY	Hours/Week:5	
DSEC -2		Credits: 4	
Course Code 18UCHE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- acquire the knowledge on pharmacognosy, pharmacology and medicinal chemistry.
- apprehend the mechanism of drug action.
- get an exposure on metabolic pathway of drugs.
- get an idea about some chemotherapeutic agents.
- gain knowledge on pharmaceutical importance of Inorganic compounds.
- acquire basic knowledge on first aid.

Course Code 18UCHE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	S	-	-	-	-
CO 2	S	-	-	-	S	-	-	-	-
CO 3	S	-	-	-	S	-	-	-	-
CO 4	S	-	-	-	S	-	-	-	-
CO 5	S	-	-	-	-	-	-	-	-
CO 6	-	-	-	-	S	-	-	-	S

Semester VI	MATERIAL CHEMISTRY AND BIO MOLECULES	Hours/Week:5	
DSEC -2		Credits: 4	
Course Code 18UCHE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- acquire knowledge about different types of magnetic and insulating materials.
- understand about modern engineering materials like Metallic glasses, biomaterials and advanced ceramics.
- know the chemistry of proteins and lipids.
- acquire knowledge about nucleic acids and the energy changes involved in the metabolic processes.
- comprehend the chemistry of enzymes and their kinetics.

Semester VI	DAIRY CHEMISTRY	Hours/Week:5	
DSEC -2		Credits: 4	
Course Code 18UCHE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the chemical composition of milk.
- know the techniques of milk processing
- acquire knowledge about various milk products
- understand about different types of special milk.
- comprehend techniques of fermentation of milk and various milk products.

Course Code 18UCHS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	-	L	S	-	S
CO 2	S	-	M	M	-	M	S	-	S
CO 3	S	S	S	-	M	M	S	-	S
CO 4	S	M	-	S	-	-	-	-	S
CO 5	S	L	-	S	-	M	M	-	S

Semester VI	GREEN CHEMISTRY	Hours/Week: 2	
Skill Enhancement Course- 6		Credits: 2	
Course Code 18UCHS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know the need for green chemistry.
- understand the principles of green chemistry.
- acquire knowledge about the concept of atom economy and selectivity.
- design a green synthesis.
- apprehend microwave assisted reactions in water, organic solvents and solid state reactions.
- comprehend about ultra sound assisted reactions.

Course Code 18UCHS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	-	L	S	-	S
CO 2	S	-	M	M	-	M	S	-	S
CO 3	S	S	S	-	M	M	S	-	S
CO 4	S	M	-	S	-	-	-	-	S
CO 5	S	L	-	S	-	M	M	-	S

B.SC Zoology

PROGRAMME SPECIFIC OUTCOME

1. to understand the basic concepts of life science and its applications.
2. to enrich the knowledge of students about the organization of living organisms and their ecological, physiological and evolutionary significance.
3. to analyze the elemental forces responsible for the regulatory process and functioning of organisms at cellular and molecular level.
4. to acquire basic skills in analytical tools and to promote the scientific thinking of students.
5. to acquire skills to culture commercially valuable species and analyze its significance.
6. to motivate the students for self employment in various branches of biology in a scientific way.
7. to provide basic knowledge in the field of research.
8. to promotes awareness about the health and betterment of mankind.
9. to update their knowledge about recent and advanced techniques in different branches of life science and their applications.

Semester III	CELL AND MOLECULAR BIOLOGY	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UZYC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know the structure of cells, the basic unit of living organisms.
- comprehend the significant role of cell and cell organelles.
- understand the interaction of cell organelles.
- gain practical knowledge about the advanced laboratory methods.
- apprehend the key role of stem cells.
- acquire knowledge about uncontrolled cell division in cancer cells.

Course Code 18UZYC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	-	-	L	-	-
CO 2	-	-	S	-	-	-	-	-	-
CO 3	-	-	S	-	-	-	-	-	-
CO 4	-	-	-	M	-	-	L	-	-
CO 5	-	-	S	-	-	-	-	-	M
CO 6	-	-	M	-	-	-	-	-	L

Semester III	AQUACULTURE	Hours/Week: 2	
SEC -2		Credits: 2	
Course Code 18UZYS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- understand the basic concepts of aquaculture.
- gain knowledge about the culture techniques of commercially valuable species and its economic importance.
- introduce protein rich food fishes and their by-products for the betterment of human health.
- learn the method of culturing freshwater, marine and brackish water fish.
- know the commercial methods for preservation of fish.
- provide self –employment opportunities for the student learners.

Course Code 18UZYS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	-	M	M	S	-
CO 2	M	S	-	-	S	S	M	-	-
CO 3	S	-	-	-	M	S	L	S	S
CO 4	M	-	-	S	-	-	-	-	-
CO 5	L	-	-	-	M	-	S	S	M
CO 6	L	-	-	-	M	S	-	S	-

Semester III	APPLIED ZOOLOGY	Hours/Week: 2	
NME -1		Credits: 2	
Course Code 18UZYN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- know the important scopes of the subject in various fields.
- gain the knowledge about the Mushroom cultivation and rearing of Animals (Silk worm, Honey bee & Fishes).
- provide employment opportunities.

Course Code 18UZYN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	S	S	S	S	S
CO 2	S	S	M	S	S	S	M	S	S
CO 3	S	-	-	M	S	S	-	M	L

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.
-

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	DEVELOPMENTAL BIOLOGY	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 18UZYC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the events in the process of development of organisms.
- study the role of various cellular movements during embryonic development.
- become familiar with the recent techniques in the field of embryology.
- know about physiological changes in women.
- analyze the cause of congenital anomalies and its preventive measures.
- gain knowledge about development of a healthy family and society.

Course Code 18UZYC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	-	-	-	-	-	-
CO 2	-	-	S	M	-	-	M	-	M
CO 3	-	-	-	-	-	-	S	-	S
CO 4	-	S	-	M	-	-	M	-	-
CO 5	S	-	-	-	-	-	M	S	S

Semester IV	BEEKEEPING	Hours/Week: 2	
SEC -3		Credits: 2	
Course Code 18UZYS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- study the basic concepts of science and for the improvement of ecosystem by introducing honeybee as pollinating agent.
- learn the basic concepts of apiculture and candidate sp. for beekeeping.
- know the culture techniques of honeybees by adopting the scientific methods.
- promote self employment skills for individual as well as community development.
- study the handling behavior and culture techniques of bees.
- promote entrepreneur skills and motivate the student learners to avail financial assistance from government as well as non government organizations to promote beekeeping as cottage industry.

Course Code 18UZYS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	S	S	M	S	M
CO 2	-	-	S	S	M	-	-	M	-
CO 3	-	-	-	-	-	S	-	M	-
CO 4	-	-	M	-	-	-	M	-	S
CO 5	-	-	-	-	M	S	-	-	-
CO6					M	S		S	S

Semester IV	ANIMAL SCIENCE	Hours/Week: 2	
NME -2		Credits: 2	
Course Code 18UZYN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the harmful and beneficial microorganisms.
- know the value of commercially important animals.
- learn the adverse effects of harmful animals.
- gain knowledge about the beneficial products obtained from animals.

Course Code 18UZYN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	-	-	-	-	-
CO 2	-	-	-	-	S	S	-	-	-
CO 3	-	M	-	-	-	-	-	-	-
CO 4	-	-	-		M	L	-	-	-

Semester V	BIOCHEMISTRY	Hours/Week: 4	
Core Course- 7		Credits: 4	
Course Code 18UZYC51		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- learn the definition for biomolecules, pH and buffer.
- acquire knowledge about classification about enzymes and vitamins and its biological importance.(K3)
- know the classification of carbohydrate and its metabolism.
- apply acquired knowledge about the metabolic disorders of protein.
- examine the primary and secondary structure of protein.
- understand the β - oxidation theory of saturated fatty acids.

Course Code 18UZYC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	-	-	L	S	-	M
CO 2	S	-	S	-	-	-	S	S	-
CO 3	M	S	S	-	-	-	M	S	-
CO 4	M	S	S	M	-	-	-	S	-
CO 5	M	-	S	-	-	-	L	-	-
CO 6	M	S	S	-	-	-	L	M	-

Semester V	ANIMAL PHYSIOLOGY	Hours/Week: 4	
Core Course-8		Credits: 4	
Course Code 18UZYC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the types of nutrients, feeding mechanism and digestion process.
- know the structure and working mechanism of various organs and system in our body.
- realize the significance of regulatory mechanisms and rhythms in animals.
- study the basic principles of animal physiology, chemical and physical properties of living matter.
- understand the endocrinology and reproductive system in man.

Course Code 18UZYC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	-	-	-	S	M
CO 2	S	S	S	M	-	-	-	-	-
CO 3	S	S	S	M	L	-	L	S	L
CO 4	S	S	S	M	-	-	L	S	M
CO 5	S	S	S	L	-	-	L	S	-

Semester V	EVOLUTION	Hours/Week: 4	
Core Course-9		Credits: 4	
Course Code 18UZYC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the basic concepts on the biochemical origin of life.
- acquire the knowledge about the evidences of evolution which explains ancestry of animals.
- know the different theories which explain evolutionary trends.
- learn the different types of evolution.
- comparative analysis about mimicry and colouration.
- study the importance of variations and speciation in evolution.
- understand the fossils and human family tree.
-

Course Code 18UZYC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	M	-	-	L	-	-
CO 2	M	S	-	-	-	-	-	-	-
CO 3	S	S	M	M	-	-	M	-	L
CO 4	M	S	M	M	-	-	M	-	L
CO 5	M	S	-	M	-	-	M	-	M
CO 6	S	S	S	S	M	-	-	-	L
CO 7	S	S	S	S	-	-	M	-	M

Semester V	IMMUNOLOGY	Hours/Week: 4	
DSE Course		Credits: 4	
Course Code 18UZYE51		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- understand the basic mechanism of immunity and factors responsible to protect our body against pathogens.
- study the structure and functions of lymphoid organs and demonstrate the role of various immune cells in our immune system.
- acquire the basic mechanism of antigen and antibody interaction and its application in clinical fields to test the efficiency of pathogens related to diseases.
know the diseases as a result of different mechanism of pathogenes would be examined.
- create awareness about the types of vaccines that helps to boost our immune system to make the judgment.
- learn the techniques and its applications in diagnosis of emerging diseases for providing alternative solutions in the field of research and its development.

Course Code 18UZYE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	-	-	-
CO 2	-	S	-	-	-	-	-	-	-
CO 3	-	S	-	S	-	-	-	-	-
CO 4	-	-	S	-	-	-	M	M	-
CO 5	-	-	S	-	-	-	-	S	-
CO 6	-	-	-	S	-	-	S	-	S

Semester V	ENVIRONMENTAL BIOTECHNOLOGY	Hours/Week: 4	
DSE Course		Credits: 4	
Course Code 18UZYE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the basic concepts about major environmental pollutants
- understand the pollution control methods to improve the quality of environment.
- gain knowledge about the monitoring of wastes using biological methods.
- get awareness about the conversion of wastes into useful products.
- learn the role of bio fuels as eco-friendly products.

Course Code 18UZYE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	-	-	-
CO 2	-	-	-	L	-	-	L	S	M
CO 3	-	-	-	M	S	-	L	M	M
CO 4	-	-	-	M	-	-	L	M	L
CO5	-	-	-	-	-	-	L	M	S

Semester V	AGRICULTURAL MICROBIOLOGY	Hours/Week: 4	
DSE Course		Credits: 4	
Course Code 18UZYE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the relationship between the plant, microorganisms and the environment.
- aware of the developments and technologies in Botany and to introduce microbiology and societal perceptions to the students on Plant and its relation to microbes.
- know the importance and application of biofertilizers.
- prepare biofertilizers.
- recognize the techniques of making composting process.

Course Code 18UZYE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	-	-	M	M	L
CO 2	S	S	S	M	L	S	M	-	M
CO 3	M	S	L	S	M	S	M	-	M
CO 4	S	S	L		S	S	S	-	M
CO 5	S	M	L	S	S	S	S	-	M

Semester V	SERICULTURE	Hours/Week: 2	
SEC		Credits: 2	
Course Code 18UZYS51		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

- understand the scope of sericulture.
- identify the types of silk and silkworm.
- learn about the moriculture.
- gain the knowledge on construction of silk rearing unit.
- acquire knowledge on the symptoms and control measures of silkworm diseases
- to promote the yield and quality of silk.
- know the importance of byproducts of sericulture.
- aware about the CSB and NERTPS for avail funding to form a sericulture unit.

Course Code 18UZYS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	M	S	S	S	S	M
CO 2	S	M	-	-	S	S	S	S	L
CO 3	S	L	-	M	M	S	M	S	S
CO 4	S	-	-	S	S	S	S	S	S
CO 5	M	L	M	M	-	S	M	S	S
CO 6	L	-	L	S	S	S	S	S	S
CO 7	L	-	-	-	-	S	-	S	S

Semester V	FUNDAMENTALS OF COMPUTER	Hours/Week: 2	
SEC		Credits: 2	
Course Code 18UZYS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- work with computer by understanding the basic concepts, characteristics and components of a computer.
- state the main ideas on operating systems in computer through acquired knowledge. create the Word document, would be useful for their job and research.
- analyze the features and advantages of MS Spread sheet by applying the tools in calculation and its presentation as diagrams and graphics.
- prepare the power point preparation for their seminars and research work presentation in the class as well in the conferences.
- know the importance of Computer in day to day life while using the computer.
- maintain an internet account using the computers and would get information related to science and technology from all around the world.

Course Code 18UZYS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	-	S	S	M	S
CO 2	S	-	-	S	-	S	-	M	S
CO 3	S	-	-	-	-	S	-	M	S
CO 4	S	-	-	S	-	S	L	S	S
CO 5	M	-	-	S	-	S	L	S	S
CO 6	M	-	-	S	-	S	S	S	S
CO 7	M	M	-	S	-	S	S	S	S

Semester VI	MICROBIOLOGY	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UZYC61		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- acquire knowledge about the significant role of microorganisms in everyday life.
- understand the isolation and culture techniques of microbes.
- analyze and distinguish food poisoning and food spoilage.
- understand the transmission of diseases caused by microbes.
- learn the techniques of promoting soil fertility using microbes.

Course Code 18UZYC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	-	-	-	-	-	-	-
CO 2	-	-	-	S	-	-	M	-	-
CO 3	-	-	-	-	-	-	-	S	-
CO 4	-	-	-		-	-	-	S	-
CO 5	-	-	-	M	-	L	L	-	M

Semester VI	BIOTECHNOLOGY	Hours/Week: 5	
Core Course-11		Credits: 4	
Course Code 18UZYC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the basic concepts of rDNA technology.
- know the recent application of rDNA to improve human health.
- understand the importance of plant and animal culture for their future research work.
- acquire knowledge about molecular techniques and their applications.
- comprehend the nanotechnology tools to minimize the occurrence of diseases and pollution by validating its significance.
- familiarize the Biotechnological processes used in industries.

Course Code 18UZYC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	S	S	S	S	S
CO 2	M	M	S	S	S	S	S	S	S
CO 3	M	S	S	M	S	S	S	S	S
CO 4	L	L	S	S	S	M	S	S	S
CO 5	S	M	S	S	-	-	S	S	S
CO 6	-	M	M	S	S	M	S	S	S

Semester VI	GENETICS AND BIOSTATISTICS	Hours/Week: 5	
Core Course- 12		Credits: 4	
Course Code 18UZYC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- demonstrate the genetic basis of Mendelian inheritance.
create awareness about hereditary diseases and stating main ideas and its mechanism about the transmission.
- know the importance of hereditary elements as it transmits the hereditary disease from generation to generation.
- attain an insight on statistical methods for analysis of data.
- provide alternative solution to solve the problems and minimize the risk of genetically related diseases.
- evaluate the hereditary patterns for genetic disorders and apply the acquired
- knowledge to solve the problems related to genes.

Course Code 18UZYC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	-	-	-	-	-	-
CO 2	-	S	-	-	-	-	-	-	-
CO 3	-	-	-	-	-	-	-	S	-
CO 4	-	-	-	S	-	-	-	M	-
CO 5	-	-	-	-	-	-	S	-	-
CO 6	S	-	S	-	-	-	-	S	-

Semester VI	ECOLOGY	Hours/Week: 5	
DSE Course		Credits: 4	
Course Code 18UZY61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the basic concepts related to the medium in the environment.
- explain the biological effects of light and temperature in habitats.
- identify the importance of cycling of nutrients in the environment.
- relate the interaction of living organisms in the ecosystem.
- analyze and identify the various effects of pollution and its abatement.
- identify the threats of biodiversity and evaluate the management strategies for conservation.

Course Code 18UZY61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	-	S	L
CO 2	S	S	-	M	-	-	M	M	L
CO 3	M	S	-	L	-	M	L	L	M
CO 4	S	S	-	-	-	-	-	M	L
CO 5	M	M	L	S	-	-	S	S	S
CO 6	S	S	M	S	-	-	M	S	S

Semester VI	ENTOMOLOGY	Hours/Week: 5	
DSE Course		Credits: 4	
Course Code 18UZYE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- classify the insects by learning basic concepts of entomology.
- know the developmental stages of insects from the acquired knowledge in metamorphosis.
- understand the Beneficial and helpful insects by comparing the uses of insects.
- identify the various pests and its methods of pest control in the agricultural field
- provide the alternative solution to solve the problems and minimize the risk of diseases
- caused by the insects from gained information on control measures of house hold pest and disease causing insects.

Course Code 18UZYE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	M	M	S	M	M	-
CO 2	S	S	-	M	M	S	M	-	-
CO 3	S	S	S	S	-	S	S	S	S
CO 4	S	S	S	S	-	S	L	S	S
CO 5	L	-	L	S	-	S	S	S	S

Semester VI	INDUSTRIAL BIOTECHNOLOGY	Hours/Week: 5	
DSE Course		Credits: 4	
Course Code 18UZYE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the valuable industrial products produced by the microorganism by fermentation.
- isolate industrially important microorganism
- improve the strain genetically by using various techniques.
- design the fermentor used industrially to carryout fermentation.
- isolate the microbial fermentation product after fermentation.
- create awareness about safety regulations followed in industries.

Course Code 18UZYE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	M	M	M	M
CO 2	L	M	M	M	L	L	L	L	L
CO 3	M	L	M	-	S	S	M	M	M
CO 4	M	L	L	S	S	S	M	-	M
CO 5	-	-	-	M	M	M	M	-	-
CO 6	-	-	-	M	M	M	M	M	M

Semester VI	POULTRY SCIENCE	Hours/Week: 2	
SEC		Credits: 2	
Course Code 18UZYS61		Internal 40	External 60

COURSE OUTCOME (CO)

On completion of the course, the students will be able to

- know the importance of poultry keeping as a profitable cottage industry.
- know the nutritive value of egg and meat.
- study the rearing methods of chick.
- learn the techniques to manage chicks for various seasons.
- know the preparation of poultry feeds.
- manage the diseased chicks.

Course Code 18UZYS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	M	-	-	-
CO 2	-	-	-	-	-	-	-	S	-
CO 3	-	-	-	-	S	M	-	-	-
CO 4	-	-	-	-	S	M	L	-	M

Semester VI	LAB IN EVOLUTION, GENETICS AND BIOSTATISTICS	Hours/Week: 3	
Core Practical-4		Credits: 3	
Course Code 18UZYC62P		Internal 40	External 60

Course Code 18UZYC62P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	-	-	-	-	-	-
CO 2	-	S	-	-	-	-	-	-	-
CO 3	-	-	-	-	-	-	-	S	-
CO 4	-	-	-	S	-	-	-	M	-
CO 5	-	-	-	-	-	-	S	-	-
CO 6	S	-	S	-	-	-	-	S	-

Semester VI	LAB IN MICROBIOLOGY AND BIOTECHNOLOGY	Hours/Week: 2	
Core Practical-5		Credits: 2	
Course Code 18UZYC63P		Internal 40	External 60

Course Code 18UZYC63P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	S	S	S	S	S
CO 2	M	M	S	S	S	S	S	S	S
CO 3	M	S	S	M	S	S	S	S	S
CO 4	L	L	S	S	S	M	S	S	S
CO 5	S	M	S	S	-	-	S	S	S
CO 6	-	M	M	S	S	M	S	S	S

Semester V	DIETETICS FOR WOMEN	Hours/Week: 2
EXTRA CREDIT COURSE		Credits: 2
Course Code 18UZY051		Internal 100

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of an adequate diet and the importance of meal planning.
- know the factors affecting the nutrient needs during the life cycle for women.
- Gain knowledge about dietary management in common ailment.

Semester VI	LIFE STYLE DISEASES	Hours/Week: 2
EXTRA CREDIT Course		Credits: 2
Course Code 18UZY061		Internal 100

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the causes, symptoms and dietary management of life style diseases.
- plan therapeutic diets for life style diseases.
- gain knowledge about diet counseling to patients and family.

B.SC Home Science

PROGRAMME SPECIFIC OUTCOMES

The students of B.Sc Home Science – Nutrition and Dietetics programme will be able to

- hone their professional and entrepreneurial skills in the areas such as Food Science, Nutrition Science, Dietetics, Human Development, Textiles and Clothing, Family Resource Management, Food Service Management, Community Nutrition, Family Dynamics, Extension Education and Computer.
- apply the scientific principles involved in various branches of Home Science to promote holistic health among the people.
- apply the concepts of nutritional sciences in dietetic and clinical interventions
- use their knowledge in cookery, diet planning, diet counseling, food preservation, bakery and confectionary, nutritional assessment improve the food and nutrition security and over all status of the community.
- cultivate critical thinking and research skills.
- acquire scientific skills necessary for career options in institutions, industries and organizations in the field of Home Science or for economic empowerment in self in particular and community in general and entrepreneurial skills required for economic empowerment.
- transfer their experience gained in science and technology from the laboratory to the community.
- inculcate moral values and ethics for sound health and holistic living.
- recognize the role of governmental and non-governmental organizations in promoting the health and nutrition of the people.

Semester III	DIETETICS I	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UHSC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the meaning, principles, factors influencing meal planning and the importance of food guide pyramid.
- understand the physiological changes and complications occur during pregnancy and role of hormones in lactation, composition and nutritive value of breast milk.
- plan and preparation of balanced diet for adults doing various occupations, socio economic levels, physiological state and various stages of lifecycle of both genders.
- calculate the RDA for the prepared menu for the normal and special conditions.
- assess the causes, preventive measures and treatment for various nutritional problems which will improve the health status of the individuals and the community.
- Develop the skills to get placement in hospitals, fitness centers and diet counseling centers.

Course Code 18UHSC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	-
CO 2	S	M	M	S	S	M	S	S	-
CO 3	S	S	S	S	S	S	S	S	-
CO 4	S	S	S	S	S	S	M	S	-
CO 5	S	S	S	S	S	S	M	S	-
CO 6	L	S	S	M	L	L	L	S	-

Semester III	ALLIED BIOLOGY – HUMAN PHYSIOLOGY	Hours/Week: 4	
Allied II		Credits: 4	
Course Code 18UBHA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the structure and physiology of Human beings
- understand the organs of the body and their functions
- be familiar with the different systems of the body.

Semester III	ENTREPRENEURSHIP DEVELOPMENT	Hours/Week: 2	
Skill Enhancement Course- 2		Credits: 2	
Course Code 18UHSS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the concept, types, role and qualities of an entrepreneur to promote entrepreneurship.
- analyze the environmental and legal aspects relating to small scale industry and procedure involved in setting up small scale units.
- recognize the role of entrepreneurial programmes and financial institutions to promote entrepreneurship.
- design a project report and project appraisal to apply for starting a new business and empower to become an entrepreneur.

Course Code 18UHSS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	M	M	M	-
CO 2	S	S	-	-	-	M	M	M	-
CO 3	S	S	-	-	-	M	M	M	-
CO 4	S	S	-	-	-	M	-	M	-
CO 5	S	S	-	-	-	M	-	M	-

Semester III	BASIC FOOD SCIENCE	Hours/Week: 2	
NMEC-1		Credits: 2	
Course Code 18UHSN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the functions of food and food groups in relation to health and nutrition
- comprehend the different methods of cooking and food preservation
- understand the composition and nutritive value of different foods.
- assess the adulterants used in foods.
-

Course Code 18UHSN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	S	M	M	-
CO 2	S	S	M	S	M	S	S	S	-
CO 3	S	M	M	M	M	S	M	M	-
CO 4	S	S	M	S	M	S	S	S	-

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	DIETETICS II	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 18UHSC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- acquire knowledge on etiology, clinical manifestations, metabolic aberrations and complications linked with adverse food reactions.
- identify the symptoms associated with a few common acute and chronic diseases and their physiological significance.
- provide knowledge on the principles involved in the nutritional and dietary management of diseases.
- gain knowledge on foods that can be given and avoided in the diseased conditions.
- develop the skills in modification and preparation of regular or normal diet to suit the diseased conditions.
- transfer the techniques of diet modification from laboratories to field for overall health dynamic and ensure professional carrier opportunities in hospitals, food industries and research institutions.

Course Code 18UHSC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	-
CO 2	S	S	S	S	L	M	S	S	-
CO 3	S	S	S	S	M	S	S	S	-
CO 4	S	S	S	S	S	S	S	S	-
CO 5	S	S	S	S	S	S	S	S	-
CO 6	S	S	S	S	S	S	S	S	-

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Semester IV	ALLIED BIOLOGY - FUNCTIONAL FOODS AND NUTRACEUTICALS	Hours/Week: 4	
Allied - II		Credits: 4	
Course Code 18UBHA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the physical and chemical properties of the food constituents.
- acquire knowledge on sources of functional foods and nutraceuticals.
- understand the role of functional foods, nutraceuticals and dietary supplements in health and disease.
- become familiar with the recent advances and research in the field.

Semester IV	INTERIOR DESIGN	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course - 3 Course Code 18UHSS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the elements and principles of interior design to promote aesthetic sense.
- apply the colour qualities and its principles in interior decorations.
- acquire knowledge on accessories used for the interior decoration.
- obtain skills in applying the elements and principles in furniture and flower arrangement.
- attain job opportunities as interior decorators and become an entrepreneur
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Course Code 18UHSS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	S	M	M	-
CO 2	S	S	M	S	M	S	S	S	-
CO 3	S	M	M	M	M	S	M	M	-
CO 4	S	S	M	S	M	S	S	S	-
CO 5	S	M	M	M	M	S	M	M	-
CO 6	-	-	-	-	-	-	-	-	-

Semester IV	BASIC NUTRITION AND DIETETICS	Hours/Week: 2	
NMEC-2		Credits: 2	
Course Code 18UHSN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the vital link between nutrition and health and realize the functions of nutrients in day today life.
- acquire knowledge on definition, classification, food sources, and functions of vitamins and minerals.
- gain the knowledge on Recommended Dietary Allowances for the various nutrients needed for the various stages of lifespan.
- attain knowledge on the principles and dietary modifications for the normal and the diseased persons
- provide diet counseling to the members of the family and the community.

Course Code 18UHSN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	M	S	M	M	-
CO 2	S	S	M	S	M	S	S	S	-
CO 3	S	M	M	M	M	S	M	M	-
CO 4	S	S	M	S	M	S	S	S	-
CO 5	S	M	M	M	M	S	M	M	-
CO 6									

Semester: V	FOOD MICROBIOLOGY	Hours/Week:4	
Core course - 7		Credits: 4	
Course Code 18UHSC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- explain the classification and characteristics of microorganisms in food.
- summarize the spoilage causing microorganisms associated with different foods.
- recommend the methods to control microbial growth.
- categorize the food borne diseases and also find the transmission route, symptoms and prevention of food borne pathogens.
- assess the role of microbes in fermentation and how it influences the quality of various food products.
- promote job opportunities in food laboratories.

Course Code 18UHSC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	L	-	-	M	S	S	-
CO 2	S	M	M	M	L	M	S	S	-
CO 3	S	S	S	M	L	M	S	S	-
CO 4	S	M	S	M	M	M	S	S	-
CO 5	S	S	S	L	M	M	S	S	-
CO 6	S	M	S	S	S	S	S	M	-

Semester V	FOOD PRESERVATION AND BAKERY	Hours/Week: 4	
Core Course - 8		Credits: 4	
Course Code 18UHSC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the meaning, objectives and importance of food preservation.
- utilize the role of ingredients , basic principles, methods used for food preservation and bakery.
- apply the food standards in food preservation and bakery.
- acquire skills in preparing food products by using food preservation and baking techniques.
- apply the baking and preservation techniques in the field of research
- obtain placement in food industries and set up small scale food industries.

Course Code 18UHSC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	S	M	S	S	-
CO 2	S	S	S	-	S	M	S	S	-
CO 3	S	S	S	-	S	S	S	S	-
CO 4	S	S	S	-	S	S	S	S	-
CO 5	S	S	S	-	S	S	S	S	-
CO 6	S	S	-	-	S	-	-	-	-

Semester: V	HUMAN DEVELOPMENT	Hours/Week:4	
Core course - 9		Credits: 4	
Course Code 18UHSC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principles and factors influencing growth and development
- know the different stages in life span, the domains of growth and development and care taken at each stage.
- acquire knowledge and skills regarding the objectives, importance and programme planning of early childhood education which provide career options in preschools/crèche and government programmes.
- understand the various methods of child study, the values of play and types of discipline in achieving positive human relationship.
- identify the causes, treatment and preventive measures of behavior problems of children and for the children with special needs.

Course Code 18UHSC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	M	S	M	L	S	-
CO 2	S	S	S	M	M	M	M	S	-
CO 3	S	S	S	L	M	M	M	-	-
CO 4	S	M	M	L	L	S	L	L	-
CO 5	S	S	M	-	-	M	-	L	-

Semester V	FAMILY RESOURCE MANAGEMENT	Hours/Week: 4	
DSEC-1		Credits: 4	
Course Code 18UHSE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- recognize the concept of management process and its value, goals and standards.
- utilize the resources and decision making techniques to meet the goals of the standard of living.
- realize the importance of money management and types of income.
- promote the skills in improving the family income by following the principles of investments.
- utilize the time and energy in an efficient and effective way to overcome the fatigue.
- promote the professional competency to grab the career options and enhance the entrepreneurial skills to engage in business venture.

Course Code 18UHSE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	-	-	-	-	-
CO 2	S	S	S	-	-	L	L	S	-
CO 3	S	S	S	-	-	L	L	L	-
CO 4	S	S	S	-	-	M	L	L	-
CO 5	S	S	S	-	-	S	L	L	-
CO 6	S	S	S	-	-	L	L	L	-

Semester V	BIOSTATISTICS	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UHSE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principle concept of statistics.
- identify the suitable sample by using various sampling methods for the selection of the sample for research.
- collect data relating to variables which will be examined.
- compute central tendency and dispersion using descriptive tools.
- Interpret correlation and regression results accurately and effectively.
- promote skills in analyzing data which will be helpful for carrier options.

Course Code 18UHSE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	L	L	L	S	M	L	-
CO 2	L	-	L	-	-	S	-	-	-
CO 3	L	L	-	-	-	M	-	-	-
CO 4	L	L	-	-	-	M	L	L	-
CO 5	L	L	-	-	-	S	L	S	-

Semester V	TEXTILE TESTING	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UHSE53		Internal 25	External 75

COURSE OUTCOME

On completion of the course, students will be able to

- recall the primary and secondary properties of textile fibres
- make use of the textile skills in fibre testing.
- discover the method suitable for physical testing of fibre, yarn and fabric.
- assess the properties of dyed and finished fabrics.
- predict the changes occur in textiles and fabric properties during textile processing.

Semester V	FOOD SAFETY AND QUALITY CONTROL	Hours/Week: 2	
Skill Enhancement Course -4		Credits: 2	
Course Code 18UHSS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principles and methods of food quality control.
- inspect the types of hazards which affect food safety.
- analyze the various adulterants present in different foods.
- predict the role of food regulation and standards at the national and international levels.
- develop and implement an effective system for food safety using HACCP standards.

Course Code 18UHSS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	M	S	S	S
CO 2	S	M	M	M	S	M	S	S	S
CO 3	S	S	M	L	S	M	S	S	S
CO 4	M	M	M	L	M	S	S	S	S
CO 5	M	-	-	-	M	-	L	M	S

Semester V	PUBLIC NUTRITION AND HYGIENE	Hours/Week: 2	
Skill Enhancement Course -5		Credits: 2	
Course Code 18UHSS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the fundamental concept of community nutrition, health and hygiene.
- realize and enunciate health and nutrition problems, causes, consequences and its preventive measures.
- promote rational thinking, problem solving capacity to face the community nutrition problems
- develop the skills in organizing and assessing data related to health and nutritional status of an individual, groups and population and transfer lab knowledge and skills to disseminate health and nutritional messages to the rural people for promoting holistic health
- recognize the role of international and national policies and programmes to combat malnutrition among the people and acquire job opportunities in Governmental and Non-governmental organizations.

Course Code 18UHSS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	S	S	-
CO 2	S	M	S	S	S	S	S	S	-
CO 3	M	M	S	M	M	S	S	S	-
CO 4	M	S	S	S	S	S	S	S	L
CO 5	S	-	S	M	M	L	M	M	S

Semester VI	NUTRITIONAL BIOCHEMISTRY	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UHSC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basis of buffer systems in relation to health.
- know the biological importance of pH, buffer and water in human nutrition.
- acquire knowledge on structure and functions of biomolecules.
- analyze the physical and chemical properties of the food constituents which help in maintaining the quality of food.
- obtain knowledge regarding metabolic process of macronutrients.
- comprehend the metabolic disorders of macromolecules.
- realize the role of biomolecules in human health.

Course Code 18UHSC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	-
CO 2	S	L	S	S	S	S	S	L	-
CO 3	S	L	S	S	S	S	S	L	-
CO 4	S	L	S	S	S	S	S	L	-
CO 5	M	M	S	S	S	S	S	M	-
CO 6	S	M	S	S	S	S	S	S	-

Semester VI	INTERNSHIP	Hours/Week: 5	
Core Course 11		Credits: 4	
Course Code 18UHSC62		Internal 50	External 50

COURSE OUTCOME

On completion of the course, students will be able to

- gain practical experience in the management of the dietary department and patient counseling for a period of one month.

Semester: VI	EXTENSION EDUCATION	Hours/Week:5	
Core course - 12		Credits: 4	
Course Code 18UHSC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the concept, scope, objectives, principles, philosophy of extension education and types of education.
- promote professional competent in communications, models and its components and also make use of current information technologies when communicating with individuals, groups and public.
- impart knowledge and skills for selecting extension methods and aids appropriate for different aspects of Home Science extension education.
- develop an ability to design a programme for planning, implementing and evaluating the Home Science extension programme.
- assist in solving the rural problems by taking the solution from the laboratory and research centres to the rural people and explore th
- e programmes available for the development of rural people.
- empower to become a good leader in local bodies through studying the Panchayat Raj system exist in our country and also make to fit in various government welfare sectors.

Course Code 18UHSC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	S	S	-
CO 2	S	S	S	S	S	M	S	S	-
CO 3	S	S	S	M	M	M	S	S	-
CO 4	M	S	M	S	M	S	M	M	M
CO 5	S	S	M	M	M	S	S	M	M
CO 6	L	S	L	-	L	S	L	M	S

Semester: VI	TEXTILES AND CLOTHING	Hours/Week:5	
DSEC - 2		Credits: 4	
Course Code 18UHSE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge in various types of fiber, properties, manufacturing process and identification of textile fibres.
- acquire professional competency and skills in converting fiber into yarn, fabric and non-woven materials.
- make familiar about the basic and special finishes applied to grey goods.
- understand the concept of different types of dye, methods of dyeing and printing, traditional textiles to enhance the appearance of the fabric.
- assist to assess knowledge on inventory, selection and care of clothing for wardrobe.
- create employability in the textile industries.

Course Code 18UHSE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	-	M	M	M	-
CO 2	S	S	S	-	-	M	M	M	-
CO 3	S	S	S	-	-	M	M	M	-
CO 4	S	S	S	-	-	M	M	M	-
CO 5	S	S	S	-	-	M	M	M	-
CO 6	S	S	L	-	-	M	M	M	-

Semester VI	FOOD TOXICOLOGY	Hours/Week:5	
DSEC - 2		Credits: 4	
Course Code 18UHSE62		Internal 25	External 75

Course outcomes

On completion of the course, students will be able to

- understand the basic concepts and principles of food toxicology
- distinguish between toxins in animal and plant food stuffs.
- identify the toxicants formed during processing of foods.
- evaluate the effect of toxins on human health.
- determine the toxicants in food

Course Code 18UHSE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	-	-	M	L	M	-
CO 2	S	S	M	-	-	M	M	S	-
CO 3	S	-	M	-	-	-	-	M	-
CO 4	S	-	M	-	-	-	-	M	-
CO 5	M	M	-	-	-	-	-	M	M

Semester: VI	FRONT OFFICE MANAGEMENT	Hours/Week:5	
DSEC- 2		Credits: 4	
Course Code 18UHSE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- explain the concept of food service operation, organizational structure of front office department and its role and its duty.
- classify the guest cycle and reservation system.
- examine check in and checkout procedures in front office management.
- assess the guest relation services and safety, security measures followed in front office.
- compile the accounting procedures and in front office operations.

Semester: VI	FAMILY DYNAMICS	Hours/Week: 2	
Skill Enhancement Course - 6		Credits: 2	
Course Code 18UHSS61		Internal 40	External 60

Course outcomes

On completion of the course, students will be able to

- realize the functions of family as a basic institution
- acquaint the concept, goals and areas of adjustment in marital relationship in adherence to the marriage laws.
- understand the dynamics of family crises.
- gain knowledge on family planning methods and population education.
- recognize the welfare and rehabilitation policies and programmes to bring harmonious relationship among the family members and acquire job opportunities in family welfare and counseling centers.

Course Code 18UHSS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	M	L	L	S	S	-
CO 2	L	L	M	L	L	M	L	L	-
CO 3	L	M	L	L	L	M	M	M	-
CO 4	S	M	M	M	M	M	S	S	-

B.SC Biochemistry

PROGRAMME SPECIFIC OUTCOMES

1. Provide the basic principles of Biochemistry along with biology and Chemistry
2. Apply the principles of Biochemistry to other subjects such as Biotechnology, Food Science, Nutrition, Microbiology, Genetics, Molecular Biology etc.
3. Create professionals in research laboratories, clinical laboratories and in various fields of Science.
4. Apply the acquired conceptual knowledge by connecting disciplinary and interdisciplinary aspects of Biochemistry.
5. Propose the technological knowhow in domains of Biochemistry for their application in industry and research.
6. Analyze the knowledge gained in Biochemistry for lifelong learning.
7. Understand the current developments in the different areas of Biochemistry.
8. Share social and environmental consciousness with their fellow citizens.
9. Organize and deliver relevant applications of knowledge through the effective written, verbal, graphical/virtual communications.

Semester III	IMMUNOLOGY	Hours/Week: 5	
Core Course -5		Credits: 5	
Course Code 18UBCC31N		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic principles on immunology.
- identify the chemical nature of antigens
- understand the structure, properties and functions of immunoglobulin types
- recognize about Immunoglobulin and Ag-Ab interactions.
- gain knowledge on application of Immunology in the field of medicine.
- acquire knowledge on tissue transplantation

Course Code 18UBCC31N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	L	S	M	-	L
CO 2	S	L	M	L	L	S	-	L	L
CO 3	S	L	M	L	L	S	M	L	M
CO 4	S	S	S	M	S	S	S		M
CO 5	S	S	S	M	S	S	S	L	M
CO 6	S	L	S	M	S	S	S	L	M

Semester III	NUTRITION	Hours/Week: 2	
SEC -2		Credits: 2	
Course Code 18UBCS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the food groups
- impart knowledge of major nutrients.
- gain knowledge on energy needs, total energy requirement
- make an awareness of Nutritional importance of protein foods.
- interpret nutritional requirements of various stages of human life.
- create awareness on nutritional challenges of the future.

Course Code 18UBCS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	L	-	S	S	S	L
CO 2	M	L	M	L	L	S	-	M	M
CO 3	-	-	S	M	M	M	-	M	L
CO 4	M	-	M	M	M	S	-	S	M
CO 5	-	-	M	-	-	S	-	S	L
CO 6	-	-	S	M	M	M	L	L	-

Semester III	WOMEN AND HEALTH	Hours/Week: 2	
NME -1		Credits: 2	
Course Code 18UBCN31		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

- create an awareness about the female physiology
- acquire knowledge on female hormones
- observe the problems associated with menstruation.
- understand the Complications associated with pregnancy
- create awareness on Cancers in women
- create awareness on Sexually transmitted diseases

Course Code 18UBCN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	-	S	M	S	L
CO 2	S	S	-	S	-	S	M	S	L
CO 3	S	S	-	S	-	S	M	S	L
CO 4	S	S	-	S	-	S	M	S	L
CO 5	S	S	-	S	-	S	M	S	L
CO 6	S	S	-	S	-	S	M	S	L

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	FOOD SCIENCE	Hours/Week: 5	
Core Course -6		Credits: 5	
Course Code 18UBCC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- accomplish knowledge on the importance of food
- acquire knowledge on food preservation
- acquire knowledge on beverages
- identify the nutritional value of meat, poultry and fish
- get awareness on Food adulteration
- understand the food laws and standards
-

Course Code 18UBCC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	S	-	-	S	M	M	L
CO 2	-	-	M	-	M	M	S	S	M
CO 3	M	L	S	-	S	S	S	M	L
CO 4	M	L	S	-	S	S	S	M	L
CO 5	S	S	M	L	S	S	M	M	L
CO 6	S	-	S	-	-	M	M	M	-

Semester IV	BIOSTATISTICS	Hours/Week: 2	
SEC -3		Credits: 2	
Course Code 18UBCS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop effective methods of data analysis and interpretation.
- introduce statistical methodology for the evaluation of health risks.
- execute Knowledge On Tabulation Diagrammatic
- understand the measures of central Tendency
- impart knowledge on measures of Symmetry
- acquire knowledge on Probability

Course Code 18UBCS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	M	S	S
CO 2	S	M	M	S	L	S	-	-	M
CO 3	S	M	M	S	L	S	-	-	M
CO 4	S	M	M	S	L	S	-	-	M
CO 5	S	M	M	S	M	S	-	-	M
CO 6	S	M	M	S	M	S	-	-	M

Semester IV	LIFE STYLE ASSOCIATED DISORDERS	Hours/Week: 2	
NME -2		Credits: 2	
Course Code 18UBCN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the health problems associated with modern life style.
- make awareness on the impact of modern lifestyle on health.
- create Diabetes mellitus and Cardio vascular system
- gain knowledge on digestive system
- understand the respiratory system
- create awareness on problems associated with excretory system

Course Code 18UBCN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	M	S	S
CO 2	S	M	M	S	L	S	-	-	M
CO 3	S	M	M	S	L	S	-	-	M
CO 4	S	M	M	S	L	S	-	-	M
CO 5	S	M	M	S	M	S	-	-	M
CO 6	S	M	M	S	M	S	-	-	M

Semester IV	BIOCHEMISTRY PRACTICAL II BIOCHEMICAL ANALYSIS OF METABOLITES	Hours/Week: 2	
Core Course		Credits: 2	
Course Code 18UBCC41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- quantify the Glucose content of food samples.
- define lactose content in milk sample
- find out fructose content of the honey sample.
- analyze protein content in food sources.
- find out the mineral content of food samples
- determine the vitamin content of the food stuffs.

Semester V	MOLECULAR BIOLOGY	Hours/Week: 4	
Core course: 7		Credits: 4	
Course Code 18UBCC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- study about the History and the basic principles of molecular Biology.
- learn about the central dogma of molecular Biology.
- know about mutagenesis
- learn the ways of gene transfer in organisms.
- understand the concepts of operon
- study the Translation and Post translational regulation

Course Code 18UBCC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	L	L	L	L	-
CO 2	S	S	S	S	L	M	-	L	-
CO 3	S	S	L	M	L	S	-	M	L
CO 4	S	S	M	L	S	S	-	L	-
CO 5	S	S	M	M	S	M	L	L	-
CO 6	S	S	S	M	M	M	S	L	L

Semester V	MICROBIOLOGY	Hours/Week: 4	
Core course: 8		Credits: 4	
Course Code 18UBCC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- know about the basic classification and characteristic features of microbes
- gain knowledge on mode of nutrition and reproduction of bacteria
- get awareness on the use of microbes for producing nutrients for mankind.
- acquire knowledge on the applications of microbiology in various industries.
- understand the etiology of infectious diseases.
- get awareness on the infectious diseases, their diagnosis and treatment options

Course Code 18UBCC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	-
CO 2	S	S	S	M	M	S	S	L	L
CO 3	S	S	S	M	M	S	S	M	-
CO 4	S	S	S	M	M	S	S	L	L
CO 5	S	S	S	M	M	S	S	L	-
CO 6	S	S	S	M	M	S	S	M	S

Semester V	PHARMACOLOGY	Hours/Week: 4	
Core course: 11		Credits: 4	
Course Code 18UBCC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- learn the basic principles of pharmacology
- understand the absorption, distribution, metabolism and elimination of drugs in the human system.
- get a clear picture on the action of drugs on human systems
- acquire knowledge on the mechanism of drug action
- be aware of adverse drug reactions
- acquire Knowledge on Drug designing and development

Course Code 18UBCC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	M	M	M	S	M	S
CO 2	S	S	S	M	M	M	S	M	M
CO 3	M	L	S	L	M	M	S	M	L
CO 4	M	S	S	S	M	L	S	L	L
CO 5	M	S	S	S	S	M	S	S	M
CO 6	S	S	S	M	M	M	S	L	L

Semester V	HUMAN PHYSIOLOGY	Hours/Week: 4	
DSEC -1		Credits: 4	
Course Code 18UBCE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- understand the Anatomy and functions of Digestive, Excretory and circulatory System of man
- realize the structure, composition, functions of blood.
- understand the physiology of respiration.
- know the Anatomy of male and female reproductive organs
- recognize Structure and functions of neuron.
- understand Structure and physiology of eye and ear

Course Code 18UBCE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	M	S	L	L	S
CO 2	S	S	S	M	M	M	S	M	M
CO 3	S	M	S	M	M	M	S	M	S
CO 4	S	S	S	M	M	M	S	M	S
CO 5	S	M	S	M	S	M	S	L	L
CO 6	S	S	S	M	L	L	S	M	L

Semester V	GENETICS	Hours/Week: 4	
DSEC -1		Credits: 4	
Course Code 18UBCE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- understand the pivotal role of Mendelian concepts in the development of the science.
- know the basic concepts that are essential to understand the inheritance of genetics
- acquire knowledge on sex chromosomes and sex determination
- understand Genetic mapping.
- get awareness on Chromosomal aberrations and significance of mutation.
- know the genotype frequency and population genetics

Course Code 18UBCE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	L	L
CO 2	S	S	M	M	M	S	S	L	L
CO 3	S	S	M	M	M	S	S	M	M
CO 4	S	S	M	M	M	S	M	M	M
CO 5	S	S	M	M	M	L	L	L	L
CO 6	S	S	M	M	M	M	L	L	L

Semester V	MOLECULAR BIOPHYSICS	Hours/Week: 4	
DSEC -1		Credits: 4	
Course Code 18UBCE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- understand the Structure of atom-Models, theories and bonding
- know about Physicochemical properties of water
- gain Knowledge on Redox potential
- acquire knowledge on Acid-Base theories
- understand Thermodynamics of Biological system
- learn Bioenergetics

Course Code 18UBCE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO1	S	S	S	M	M	M	S	L	L
CO 2	S	S	S	M	S	M	S	L	L
CO 3	S	S	S	M	M	M	S	L	L
CO 4	S	S	S	S	M	L	L	S	L
CO 5	S	S	S	S	M	M	S	L	L
CO 6	S	S	S	S	M	L	S	L	L

Semester V	BIOINFORMATICS	Hours/Week: 2	
SEC-4		Credits: 2	
Course Code 18UBCS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- know about the sequence data bases for proteins and nucleic acids
- gain knowledge on usage of Matrix in bioinformatics
- impart knowledge about alignment algorithms
- study about the basics of computers.
- know about sequence alignment
- know about different packages

Semester V	MOLECULAR BASIS OF NON- INFECTIOUS HUMAN DISEASES	Hours/Week: 2	
SEC-5		Credits: 2	
Course Code 18UBCS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- Learn about the nutritional components in diet
- Gain awareness about nutritional deficiency disorders
- Acquire knowledge on metabolic and life style associated disorders.
- Gain awareness about Cancer and its types, causes, characteristics and stages
- Know protein folding and removal of misfolded proteins
- Understand the significance inborn errors of metabolism

Course Code 18UBCS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	M	S	S	M	L
CO 2	S	S	S	M	M	S	S	M	L
CO 3	S	S	S	M	M	S	M	S	-
CO 4	S	S	S	S	S	S	S	S	-
CO 5	S	S	M	M	L	S	L	M	-
CO 6	S	S	S	S	M	S	M	M	-

Semester V	ENVIRONMENTAL STUDIES	Hours/Week: 2
SEC-5		Credits: 2
Course Code 18UGES51		Internal 100

COURSE OUTCOMES

On completion of the course the students will be able to

- to understand the social aspects of the environment, the present condition of the earth and the impact of human activities locally and globally.
- to realize the need for sustainable development, a key to the future of mankind.
- to create awareness on environmental crisis and management
- to manage environmental hazards and present possible disasters.
- to develop a population that is totally aware of environment and its associated problems.
- to develop attitudes and skills for the solution of current problems.

Semester VI	BIOTECHNOLOGY	Hours/Week: 5	
Core Course-12		Credits: 4	
Course Code 18UBCC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Learn about the technique of genetic engineering in plants and animals.
- Understand the cloning vectors and cloning methods.
- Learnt about the synthesis and applications of recombinant proteins.
- Acquire knowledge on the design and operation of fermenters.
- Get awareness on biodegradable plastics.
- Gain knowledge on production of novel proteins.

Course Code 18UBCC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	M
CO 2	S	S	S	S	S	S	S	M	M
CO 3	S	S	S	S	S	S	S	M	M
CO 4	S	M	S	S	S	S	M	M	M
CO 5	S	M	S	S	S	S	M	M	M
CO 6	S	M	S	S	S	S	M	M	M

Semester VI	PLANT BIOCHEMISTRY	Hours/Week: 5	
Core Course-13		Credits: 4	
Course Code 18UBCC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Gain knowledge about the basic structure and properties of plant pigments.
- Understand how light energy is captured and used to provide chemical forms of energy to power the functions of cells and whole plants.
- Know about the importance of mineral nutrients to the plant growth. Understand the symbiotic and asymbiotic N₂ fixation and sulphur assimilation taking place in plants.
- Know about the role phytohormones and its applications in agriculture.
- Know about the physiology of plant reproduction and about the importance of day light (photoperiodism) and Chilling effect (vernalization) on reproduction and germination.
- Acquire knowledge about the technique of plant tissue culture and its application in agriculture and agrotech.

Course Code 18UBCC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	L	L	M
CO 2	S	M	S	M	S	S	L	L	M
CO 3	S	S	S	S	S	S	L	L	M
CO 4	S	S	S	S	S	S	M	M	M
CO 5	S	S	S	S	S	S	L	L	M
CO 6	S	S	S	S	S	S	M	L	M

Semester VI	CLINICAL BIOCHEMISTRY	Hours/Week: 5	
Core Course-14		Credits: 4	
Course Code 18UBCC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Know the clinical aspects of various metabolic disorders.
- Understand the inborn errors of metabolic disorders.
- Understand the biochemical mechanisms responsible for metabolic disorders.
- Know the pathophysiological processes behind the metabolic disorders
- Acquire the awareness on common infectious diseases
- Acquire knowledge on endocrine disorders.

Course Code 18UBCE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	M	S	S	S	M	L
CO 2	M	M	S	M	S	M	S	S	M
CO 3	S	S	S	M	M	L	S	L	M
CO 4	S	S	S	S	M	M	S	S	M
CO 5	M	S	S	M	M	M	S	S	L
CO 6	S	S	S	M	M	S	S	M	L

Semester VI	CLINICAL BIOCHEMISTRY	Hours/Week: 3	
Core Course Practical-3		Credits: 3	
Course Code 18UBCC61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- Handle the Instruments and apparatus used for clinical laboratory investigations
- impart practical knowledge on laboratory procedures
- Gain knowledge on the Normal and abnormal constituents of urine
- Learn the procedures to analyze the blood samples for the biochemical parameters
- Learn the procedures to analyze the Urine samples for the biochemical parameters
- Estimate various enzymes from various biological fluids.

Course Code 18UBCC61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	S	M	M	M	S	L	L
CO 2	S	S	S	M	M	M	M	L	L
CO 3	M	S	S	M	M	M	M	M	L
CO 4	M	S	S	M	M	M	M	L	L
CO 5	M	S	S	M	M	M	M	L	L
CO 6	S	S	S	S	S	S	M	L	L

Semester VI	MICROBIOLOGY	Hours/Week: 3	
Core Course Practical-4		Credits: 3	
Course Code 18UBCC62P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- Understand the working principle of different laboratory equipments used in microbiological laboratories
- Do basic microbiological techniques and biochemical assays to identify the type of microbial species.
- Understand the microbial growth kinetics and understanding different physiological phenomenon
- Understand about microbial hematology and can test blood grouping and calculate ESR.
- Assess the quality of water.
- Understand the basic principle and procedure of advanced microbial and immunological techniques which are related to advanced research works.

Course Code 18UBCC62P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	M	L	M
CO 2	S	S	S	S	S	S	S	M	M
CO 3	S	S	S	S	S	S	S	L	M
CO 4	S	S	S	S	L	S	L	L	M
CO 5	S	L	S	L	S	S	L	M	M
CO 6	S	S	S	S	S	S	S	L	M

Semester VI	BIOINFORMATICS	Hours/Week: 2	
Core Course Practical-5		Credits: 2	
Course Code 18UBCC63P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- Know about the retrieval of nucleic acid and protein sequences.
- Understand the usage of alignment techniques
- Gain knowledge in the proteomics field
- Predicting trans membrane regions
- Study about the structure prediction of proteins
- Learn molecular visualization

Course Code 18UBCC63P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	S	L	-	S
CO 2	S	S	M	S	M	S	L	-	S
CO 3	S	S	M	S	M	S	L	-	S
CO 4	S	S	M	S	S	S	L	-	S
CO 5	S	S	M	S	S	S	L	-	S
CO 6	S	S	M	S	S	S	L	-	S

Semester VI	MOLECULAR DIAGNOSTICS	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UBCE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Understand the molecular basis of diseases.
- Learn various molecular diagnostic tools available for these diseases.
- Acquire the knowledge on transmission mechanisms of single gene disorders.
- Gain knowledge on applications of karyotyping procedures.
- Know the tissue matching procedures.
- Understand the progress and developments in animal cell culture techniques.

Course Code 18UBCE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	S
CO 2	S	S	S	M	S	S	S	S	M
CO 3	S	M	S	M	S	S	S	L	M
CO 4	S	M	S	M	S	S	S	L	M
CO 5	S	M	S	M	S	S	S	M	M
CO 6	S	M	S	M	S	S	S	L	M

Semester VI	BIOFERTILIZERS AND BIOPESTICIDES	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UBCE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Understand the benefits of biofertilizers
- Identify the symbiotic and non symbiotic bacterial biofertilizer
- Do the mass cultivation and field application of *rhizobium*, *azospirillum*, *azotobacter* and *azolla*.
- Understand the importance of growth and yield of crop plants.
- Identify the types of mycorrhizal fungi
- To know the methods applied for control of pathogen
- Describe the biological pest control agents.

Course Code 18UBCE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	L	M	S	L	M	S
CO 2	S	L	M	L	M	S	L	M	S
CO 3	S	S	M	S	S	S	L	M	S
CO 4	S	L	M	M	M	S	L	M	S
CO 5	S	S	M	M	S	S	L	M	S
CO 6	S	L	M	M	S	S	L	M	S

Semester VI	TOXICOLOGY	Hours/Week: 5	
DSEC -2		Credits: 4	
Course Code 18UBCE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- Understand the route and site of exposure of xenobiotics
- Get awareness on xenobiotics exposure in humans, tolerance and addiction
- Learn the mechanism of toxicity
- Understand detoxification of toxicants.
- Know about the toxic effects of metals and pesticides
- Analyse BOD and COD

Course Code 18UBCE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	M	S	S	S	M	L
CO 2	M	M	S	M	S	M	S	S	M
CO 3	S	S	S	M	M	L	S	L	M
CO 4	S	S	S	S	M	M	S	S	M
CO 5	M	S	S	M	M	M	S	S	L
CO 6	S	S	S	M	M	S	S	M	L

Semester VI	MEDICAL LAB TECHNOLOGY	Hours/Week: 2	
SEC-6		Credits: 2	
Course Code 18UBCS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- Know about the significance of blood and urine analysis
- Gain awareness about common infectious diseases, causes and prevention.
- Acquire knowledge on Laboratory procedures to diagnose diseases.
- Gain knowledge about the basic functions in clinical lab test and their interpretations.
- Know various clinical laboratory tests to diagnose diseases
- Understand the significance of various test and interpretation in diseased conditions.

Course Code 18UBCS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	L	-	S
CO 2	S	S	M	S	S	S	L	-	S
CO 3	S	S	M	S	S	S	L	-	S
CO 4	S	S	M	S	S	S	L	-	S
CO 5	S	S	M	S	S	S	L	-	S
CO 6	S	S	M	S	S	S	L	-	S

B.Sc., Microbiology

PROGRAMME SPECIFIC OUTCOMES

On the completion of B.Sc., Microbiology the students will be able to

- Understand the basic concepts in various disciplines of Microbiology including Biotechnology, Biochemistry, Genetics, Molecular biology, Virology and Immunology.
- Diagnose various diseases and their transmission, treatment, control and preventive methods with the help of biotechnological, immunological & nanotechnological techniques.
- Explain the elaborate description of the taxonomic classification of microbes, metabolic processes and their molecular mechanisms.
- Analyze the cell structure, functions and their relationships among the microorganisms, humans, plants, animals and environment.
- Understand the various structural and enzymatic properties of microbes in fermentation engineering and will employ them for developing human/environment friendly products and processes.
- Develop the knowledge to handle various basic and analytical instruments used in microbiology laboratories for analyzing microbial diversity and molecular mechanisms.
- Interpret the applications of biological sciences with molecular techniques to manipulate biological systems and produce products.
- Analyze the molecular data using newly emerging disciplines of Microbiology such as nanobiotechnology and bioinformatics methods.
- Acquire the fundamental knowledge, entrepreneurial aspects and recent updates of various disciplines of life sciences.

Semester III	MOLECULAR BIOLOGY	Hours/Week: 5	
Core Course - 6		Credits: 5	
Course Code 18UMBC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- relate the important terms in molecular biology and the significance of central dogma in cells
- understand the structure and functional properties of genes in living organisms at molecular level
- gain ideas about enzymes, genetic code and wobble hypothesis in cell regulation
- acquire conceptual strategies of replication, transcription and translation process of genetic materials
- predict the regulation of genome organization and gene expression in bacterial cell
- criticize the knowledge of formally facing problems and its rectification with modern Techniques

Course Code 18UMBC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	L	-	-	-	-	-
CO 2	-	-	-	S	M-	-	-	-	-
CO 3	L	-	-	-	-	M	-	-	-
CO 4	M	-	-	-	-	M	-	-	L
CO 5	L	-	-	-	-	L	-	-	-
CO 6	-	-	-	L	L	M	-	S	S

Semester III	MEDICAL LAB TECHNOLOGY	Hours/Week: 2	
Non Major Elective Course - 1		Credits: 2	
Course Code 18UMBN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the components of blood and their functions.
- know the procedure to collect, handle and dispose blood samples in laboratory.
- understand the procedures and preparations routinely followed in blood bank.
- learn the types of hematological tests preferable for basic blood analysis.
- get skills to analyze the level of compounds in blood by routine biochemical tests.

Course Code 18UMBN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	S	-	L	-	-	L
CO 2	L	S	-	-	-	S	-	-	M
CO 3	L	L	-	-	-	S	-	-	M
CO 4	L	S	-	L	-	S	M	-	S
CO 5	L	S	-	L	-	S	M	-	S

Semester III	ENZYMOLOGY & ENZYME TECHNOLOGY	Hours/Week: 2	
Skill Enhancement Course - 2		Credits: 2	
Course Code 18UMBS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts and role of enzymes in metabolism.
- describe the nomenclature and classification of enzymes.
- gain knowledge on enzyme kinetics, allosteric enzymes and isoenzymes.
- apply the basic techniques for extraction, purification and assay of enzymes.
- illustrate the various methods of immobilization and commercial applications of enzymes

Course Code 18UMBS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	-	M	-	-	-	L
CO 2	L	-	S	-	-	-	-	-	L
CO 3	-	-	L	-	M	L	L	-	L
CO 4	-	-	-	-	L	M	L	-	M
CO 5	-	-	-	-	S	S	M	-	L

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster.

Semester IV	MICROBIAL GENETICS	Hours/Week: 5	
Core Course - 8		Credits: 5	
Course Code 18UMBC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- recognize the terms and techniques related to genetics and its significance
- get elaborate information about genetic materials and the mechanism of genetic exchange in bacteria
- emphasis the skills of understanding the mutagens, types of mutation and the screening procedures to detect mutations
- acquire knowledge about DNA damage and repair mechanism in bacteria
- gather some novel ideas of mapping of genetic materials using tiny elements.

Course Code 18UMBC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	L	-	-	-	-	-	-
CO 2	S	-	L	-	-	-	-	-	M
CO 3	L	L	-	-	-	-	-	-	M
CO 4	-	-	L	M	-	M	-	-	L
CO 5	L	-	-	-	L	M	-	-	L

Semester IV	APPLIED MICROBIOLOGY	Hours/Week: 2	
Non Major Elective Course - II		Credits: 2	
Course Code 18UMBN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the beneficial aspects of microorganisms in agriculture and environment.
- interpret about spoilage and preservation of food.
- understand the applications of microorganisms in industries to produce various products.
- enlist and explain the mode of action of antimicrobial drugs.
- define the role of microorganisms and their contamination problems in various environmental substances.

Course Code 18UMBN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	L	S	L	-	L	-	S
CO 2	M	L	-	L	M	M	-	-	L
CO 3	M	-	L	L	S	S	S	-	L
CO 4	L	S	S	M	M	L	-	S	S
CO 5	M	-	M	S	S	M	L	-	L

Semester IV	MUSHROOM TECHNOLOGY	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course - 3			
Course Code 18UMBS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the morphology and lifecycle of various mushrooms.
- acquire knowledge on mushroom cultivation strategies and economics of mushroom production.
- gain knowledge on various mushroom diseases.
- apply the basic techniques for preservation and processing of mushrooms.
- describe the nutritional and medicinal values of mushrooms.

Course Code 18UMBS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	L	M	-	L	-	-	L
CO 2	L	-	L	-	-	-	-	-	S
CO 3	-	-	L	L	-	-	-	-	L
CO 4	-	-	-	-	L	M	-	-	M
CO 5	-	-	-	M	-	-	-	-	M

Semester V	CLINICAL MICROBIOLOGY	Hours/Week: 4	
Core Course – 9		Credits:4	
Course Code 18UMBC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire knowledge about the medically important microbes and infectious diseases
- know the defense system, normal flora and mechanism of pathogenesis in human body.
- understand the etiology, prophylaxis and diagnosis methods of various infectious diseases.
- analyze the features of newly emerged viral diseases.
- learn different approaches, current techniques and tools used to identify pathogens.

Course Code 18UMBC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	S	-	M	-	-	L
CO 2	L	S	S	S	L	L	-	-	M
CO 3	L	S	S	M	L	M	-	-	L
CO 4	M	S	M	M	-	L	-	-	S
CO 5	L	S	M	M	-	M	-	-	S

Semester V	IMMUNOLOGY	Hours/Week: 4	
Core Course – 10		Credits:4	
Course Code 18UMBC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of innate and adaptive immunity.
- describe the various cell types and organs involved in the immune response.
- apply the basic techniques for identifying antigen and antibody interactions.
- illustrate the adverse effect of immune system including allergy, hyper sensitivity and autoimmunity.
- describe the immunological response against transplantation and tumor.

Course Code 18UMBC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	-	-	-	-	-	-	M
CO 2	L	L	-	L	-	-	-	-	-
CO 3	-	S	L	-	-	M	-	-	M
CO 4	L	M	S	L	-	L	-	-	L
CO 5	-	S	M	-	-	L	-	-	L

Semester V	BIOINFORMATICS	Hours/Week: 4	
Core course – 11		Credits:4	
Course Code 18UMBC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the parts and uses of the computer in data abstraction and how to integrate these sources through networks.
- make use of information stored in biological data and its retrieval method.
- assume the method of identification of gene location, structure prediction and classification.
- assess the knowledge about organizing the data and how to relate with the family based on evolutionary changes.
- understand the difficulty in an efficient manner to develop tools that aid in analysis of data and also interpret the results in an accurate and meaningful way.
- develop skills about the theoretical uses of biologically relevant data bases for making new creativity with bioinformatics tools

Course Code 18UMBC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	L	-	-	L	M	S	S
CO 2	-	-	L	-	-	L	S	S	S
CO 3	-	-	M	-	-	-	S	S	S
CO 4	-	-	M	L	-	-	-	S	M
CO 5	-	-	L	-	-	-	S	S	L
CO 6	-	-	M	-	-	-	-	S	S

Semester V	VIROLOGY	Hours/Week: 4	
DSEC - 1		Credits:4	
Course Code 18UMBE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic structure and principles of viral taxonomy.
- apply the basic techniques of cultivation, purification and assay of viruses.
- describe the structure and replicative cycle of animal, plant and bacteriophages.
- illustrate the interaction of virus-host and mechanism of diseases.
- gain knowledge on pathogenesis of viral infection and their inhibition by antiviral therapy and vaccination.

Course Code 18UMBE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	M	L	-	-	-	-
CO 2	L	-	-	-	-	S	-	-	L
CO 3	L	L	L	L	L	-	-	-	-
CO 4	M	S	S	S	-	-	-	-	-
CO 5	-	S	L	L	M	L	L	-	L

Semester V	DIAGNOSTIC MICROBIOLOGY	Hours/Week: 4	
DSEC - 1		Credits: 4	
Course Code 18UMBE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the role of Microbiology laboratory for the analysis of various clinical specimens.
- understand the collection and handling procedures need to analyze body fluids.
- learn the types of hematological tests and current diagnostic procedures for identifying diseases.
- get skills for analyzing blood by routine biochemical tests.
- acquire knowledge to the novel techniques implied for diagnosing mycotic and parasitic infections.

Course Code 18UMBE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	-	S	L	-	L
CO 2	L	M	-	-	-	S	-	-	L
CO 3	L	M	-	L	-	S	L	-	M
CO 4	L	M	L	-	L	S	-	-	L
CO 5	L	S	L	M	-	S	-	-	S

Semester V	VERMITECHNOLOGY	Hours/Week: 4	
DSEC - 1		Credits: 4	
Course Code 18UMBE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- characterize the chemical profile of humic substances and their biological activities.
- describe the structure of vermibed that provides ideal conditions for worms.
- relate the types of composting to the types of crops & promotes its use in agriculture.
- understand the compounds rich in humic substances for soil amendment.
- develop an integrated and environmentally sound organic waste management system with sustainable methods.

Course Code 18UMBE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	L	S	L	S	-	S
CO 2	L	-	-	-	L	L	L	-	M
CO 3	M	-	-	M	L	-	M	-	S
CO 4	L	-	L	L	M	L	L	-	M
CO 5	M	-	-	L	M	L	M	-	S

Semester V	COSMETIC MICROBIOLOGY	Hours/Week: 2	
Skill Enhancement Course - 4		Credits:2	
Course Code 18UMBS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the history and the formulation of cosmetic products in ancient as well as recent days
- get information about the uses of plants and its derived products in cosmetic industry
- knowledge about sanitation and preservative measures to control the microbial contamination in cosmetic products.
- understand cosmetic regulations and setup tests as necessary to help cosmetic companies.
- create the awareness of cosmetics preparation, uses of cosmetic products and how to overcome the impacts in cosmetic formulations

Course Code 18UMBS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	L	M	-	S	-	M
CO 2	-	-	--	L	-	-	S	-	M
CO 3	M	M	-	M	S	-	M	-	M
CO 4	L	M	-	M	-	-	S	-	S
CO 5	L	-	-	L	S	-	S	-	M

Semester V	PHARMACEUTICAL MICROBIOLOGY	Hours/Week: 2	
Skill Enhancement Course - 5		Credits:2	
Course Code 18UMBS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the sources of drug and their formulations during production
- understand the mechanism of drug action from absorption to expelling process
- compare the informations based on drug action and its resistance in humans as well as microbes to apply novel techniques for the identification drug structure and its interaction sites.
- infer the prime factor of drug receptor and its adverse effects with interaction of drug
- compile knowledge about drug quality evaluation and the novelty introduced in drug designing process

Course Code 18UMBS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	-	-	M	-	S	-	-
CO 2	-	L	-	L	L	-	S	M	M
CO 3	-	-	L	L	M	-	S	S	M
CO 4	-	-	L	-	L	-	M	M	M
CO 5	-	-	-	-	-	-	M	S	S

Semester VI	SOIL&AGRICULTURAL MICROBIOLOGY	Hours/Week: 5	
Core Course – 15		Credits: 4	
Course Code 18UMBC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the distribution and role of soil microbes in agriculture improvement.
- develop set of skills to recognize plant diseases and inhibiting plant pathogens.
- understand the nature of soil and microbes in determining soil fertility through the production of plant growth promoting substances.
- analyze various interactions between plant and microbes especially rhizosphere, Phyllosphere and mycorrhizae.
- learn the significance of biotechnological methods and current research in agriculture.

Course Code 18UMBC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	L	S	L	-	M	-	L
CO 2	L	S	S	M	L	L	-	-	L
CO 3	L	-	L	S	S	-	M	-	-
CO 4	L	L	M	S	L	M	L	-	-
CO 5	S	L	-	S	L	M	S	-	S

Semester VI	INDUSTRIAL MICROBIOLOGY	Hours/Week: 5	
Core Course – 16		Credits: 4	
Course Code 18UMBC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the design of various fermenters and types of fermentation process.
- describe the various factors that influence the fermentation process.
- gain knowledge on screening strategies and strain improvement techniques of industrially important microbes.
- describe the large-scale fermentation and downstream processing.
- grasp the knowledge on commercial production of fermentation products.

Course Code 18UMBC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	L	L	L	-	L
CO 2	-	-	-	-	S	L	M	-	S
CO 3	-	-	-	-	S	L	S	-	M
CO 4	-	-	-	-	M	L	M	-	S
CO 5	-	-	-	-	S	L	S	-	S

Semester VI	BIOTECHNOLOGY	Hours/Week: 5	
Core course 17		Credits:4	
Course Code 18UMBC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- recall the basic concepts of various biotechnology related terms
- gain experimental ideas of gene transfer methods and molecular techniques involved in gene manipulation
- understand the issues related to plant nutrition and quality improvement, then the production of edible vaccines, therapeutic drugs by transgenic modifications
- identify the basics of gene modification and the significance of transgenic plants and animals
- interpret the bioethical and biosafety issues related to patenting of products
- acquire some information about the impact of novel strategies in the field of biotechnology

Course Code 18UMBC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	-	L	M	-	M	M	M
CO 2	L	L	-	L	M	S	S	M	M
CO 3	M	-	-	M	S	S	S	M	M
CO 4	L	-	L	M	M	L	S		S
CO 5	-	-	-	M	S	-	M	M	S
CO 6	-	-	-	-	M	-	M	M	S

Semester VI	ENVIRONMENTAL MICROBIOLOGY	Hours/Week: 5	
DSEC - 2		Credits: 4	
Course Code 18UMBE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- describe the diversity of microorganism and microbial communities inhabiting a multitude of habitats and occupying a wide range of ecological habitats.
- understand the various biogeochemical cycles- carbon, nitrogen, phosphorous cycles and microbes involved.
- apply the principles of environmental microbiology to understand and solving environmental problems- bioremediation and bioleaching.
- gain knowledge on biodegradation of xenobiotics.
- determine the sanitary quality of water and sewage treatment methods employed in waste water treatment.

Course Code 18UMBE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	M	S	-	L	-	-	-
CO 2	-	-	L	M	-	L	-	-	-
CO 3	-	-	M	M	M	-	-	-	L
CO 4	-	-	M	M	S	-	-	-	L
CO 5	-	-	L	L	S	L	-	-	S

Semester VI	FOOD MICROBIOLOGY	Hours/Week: 5	
Discipline Specific Elective 2		Credits:4	
Course Code 18UMBE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- study the beneficial role of microbes and its characteristics in food and food products
- get information about intrinsic and extrinsic factors role in survival of microbes
- find out the causatives of spoilage in food and the preservation methods
- learn the methods of isolation, detection and confirmation tests employed in food industry
- develop basics of food safety and regulation procedures for detecting food quality
- acquire information about recent day's food manufacturing and preservation practices

Course Code 18UMBE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	S	L	-	-	-	-
CO 2	L	-	-	M	M	-	-	-	-
CO 3	-	-	-	L	S	-	M	-	-
CO 4	-	-	-	L	M	L	-	M	M
CO 5	-	-	-	-	S	-	M	-	S
CO 6	-	-	-	-	L	-	M	-	S

Semester VI	BIOCONTROL	Hours/Week: 5	
DSEC - 2		Credits: 4	
Course Code 18UMBE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- explain the history, theory, practice and science of biological control.
- evaluate the scientific studies and concepts related to biological control.
- assess the current and future roles of biological control with in context of agricultural and natural ecosystem.
- understand the types of biocontrol and biological control agents of insects and their biology.
- apply the ecological principles of biological control of plant pests by parasitoids, predators, pathogens and entomopathogenic nematodes to manage pest problems.

Course Code 18UMBE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	L	-	L	-	-	-	L
CO 2	L	L	M	M	-	-	-	-	-
CO 3	-	L	-	M	L	-	L	-	M
CO 4	M	L	M	L	-	-	L	-	L
CO 5	-	M	-	L	M	L	M	-	M

Semester VI	NANOBIOTECHNOLOGY	Hours/Week: 2	
SEC - 6		Credits: 2	
Course Code 18UMBS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- review the basics and applications of nanobiotechnological devices.
- characterize, classify and produce nanoparticles.
- analyze the applications of nanomaterials as nanomedicine in drug delivery systems.
- retrieve the mode of impact, toxic effects and environmental risks of nanomaterials.
- understand the role of nanomedicine for treating diseases by novel aspects.

Course Code 18UMBS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	-	L	L	S	M	S	S
CO 2	L	M	-	L	-	M	L	M	M
CO 3	L	M	-	L	-	M	M	S	S
CO 4	L	L	-	M	-	-	M	M	M
CO 5	L	S	-	-	-	L	M	M	S

B.Sc. Biotechnology

PROGRAMME SPECIFIC OUTCOMES

On completion of the course B.Sc., Biotechnology the students will be able to

- understand the fundamental concepts in various disciplines of Biotechnology such as Biochemistry, Microbiology, Genetics, Molecular biology etc.
- apply the core concepts in applied areas like Plant biotechnology, Animal biotechnology, Industrial biotechnology and Recombinant DNA technology etc.
- understand the principles and handling of various instruments used in biotechnology laboratory and to equip the practical skills of molecular and genome based techniques like DNA isolation, plasmid isolation, Gene cloning etc.
- understand the potentials of microbial, plant and animal systems and employ them for the biotechnological product development, ecofriendly techniques for the bioconversion of wastes and abating pollution .
- analyse the organization of plant, animal and microbes from cellular level upto genome level and their inter relationship.
- appreciate the development of novel therapeutics, immunological techniques, gene therapy for emerging diseases
- acquire knowledge on stem cell technology, Nanotechnology, Bioinformatics to pursue higher studies and updated with recent developments in biotechnology
- identify careers in biotechnology domains like Pharmaceutical, Food Industry, production of agricultural inputs like biofertilizers, Forensics, medical coding etc,
- understand the IPR, ethical and environmental concerns and its application in Biotechnological techniques for product development.

Semester III	MICROBIOLOGY	Hours/Week: 4	
Core Course-6		Credits: 4	
Course Code 18UBOC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Understand the classification and characteristics of microorganisms
- Study in detail about the growth of microorganisms and their nutritional requirements.
- Acquire skills on various sterilization techniques
- Identify the microbes using biochemical techniques
- Understand the bacterial growth kinetics
- Demonstrate and evaluate interactions between microbes, hosts and environment
- Appreciate the role of microbes in human health care and agriculture

Course Code 18UBOC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	L	-	-	S	-
CO 2	S	S	L	S	-	-	-	S	-
CO 3	S	S	S	-	-	-	-	L	-
CO 4	S	S	M	M	-	-	-	-	-
CO 5	S	L	L	M	-	-	-	M	-
CO 6	M	L	L	-	-	-	-	-	M
CO 7	S	S	L	M	M	L	-	L	-

Semester III	BIOFERTILIZER TECHNOLOGY	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course-II		Internal	External
Course Code 18UBOS31			
		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

- Classify the potential organisms to be used as Biofertilizers.
- Learn about the mass production of biofertilizers.
- Study the biochemical mechanism of nitrogen fixation
- Understand the genetics of nitrogen fixation
- Know the recycling of wastes into manure
- Understand the Impact of organic inputs like compost, vermicompost and panchakavya
- Explore the marketability, quality control in Biofertiliser production

Course Code 18UBOS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S	L	-	-	S	-
CO 2	S	S	L	S	M	S	-	S	-
CO 3	S	M	-	S	M	-	-	S	-
CO 4	S	S	-	M	M	L	-	M	-
CO 5	L	S	-	S	L	L	L	M	M
CO 6	S	S	M	S	-	M	-	S	M
CO 7	L	L	-	-	-	M	-	S	S

Semester III	INFECTIOUS DISEASES	Hours/Week: 2	
Non Major Elective-I		Credits: 2	
Course Code 18UBON31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the ubiquitous nature and characteristics of pathogens
- know about the causes of various infectious Diseases
- understand the host pathogen relationship
- acquire knowledge on diagnostic techniques
- enhance the knowledge on pathogenesis, preventive methods and treatment of communicable diseases.
- acquire knowledge on deadly diseases

Course Code 18UBON31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	L	-	M	-	S	-
CO 2	M	M	M	M	L	-	-	-	-
CO 3	S	L	-	M	M	-	-	-	-
CO 4	L	L	S	M	-	M	L	M	-
CO 5	S	S	L	-	-	M	L	L	-
CO 6	-	-	-	-	L	S	L	-	-

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III& IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III& IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	RECOMBINANT DNA TECHNOLOGY	Hours/Week: 4	
Core Course-8		Credits: 4	
Course Code 18UBOC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Describe the main principles, methods for preparation and cloning of DNA in various organisms
- Study about the types of enzymes which is used to produce recombinants
- Learn about the vectors and the transfer of DNA into the host cell
- Learn the methods of DNA sequencing.
- Know about the recombinant products
- Express clearly about the gene amplification and methods for analysis of DNA, such as hybridization, restriction analysis and gene expressions.
- Apply genetic and biotechnological techniques to manipulate genetic materials to develop novel and improved products.

Course Code 18UBOC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	S	L	S	L	L
CO 2	S	S	S	-	-	L	L	-	S
CO 3	-	S	S	M	S	L	L	-	M
CO 4	L	S	S	-	S	L	L	-	-
CO 5	-	S	M	M	S	M	-	-	M
CO 6	S	S	S	L	S	-	L	-	M
CO 7	-	M	S	S	M	S	S	L	S

Semester IV	MUSHROOM CULTIVATION	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course-3		Internal	External
Course Code			
18UBOS41		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

- Identify and distinguish the edible mushrooms from poisonous ones.
- Understand the basic needs and to design a mushroom farming system
- Utilize the agrowastes into value added product
- Acquire skills on cultivation practice of edible mushrooms.
- Know the nutritional & medicinal value of Mushrooms.
- Prepare value added products from mushroom
- Become an entrepreneur

Course Code 18UBOS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	L	-	L	-	-	-	-	-
CO 2	L	M	L	S	-	-	-	S	L
CO 3	-	M	-	S	-	M	-	S	L
CO 4	L	L	L	L	-	-	-	-	-
CO 5	-	M	-	L	-	L	-	L	-
CO 6	M	L	S	S	-	-	-	S	M
CO 7	-	-	-	-	-	-	-	-	M

Semester IV	ORGANIC FARMING	Hours/Week: 2	
Non Major Elective- 2		Credits: 2	
Course Code 18UBON41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basics and importance of organic farming
- classify the types of organic farming
- understand the transition from chemical farming to organic farming system
- apply organic inputs like biofertilizers, biocontrol agents for plant production and protection
- know the standards for organic products and organic certification process
- explore the marketing and export potential of organic products

Course Code 18UBON41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	S	-	L	-	S	M
CO 2	-	-	-	L	-	-	-	-	-
CO 3	S	M	-	S	-	L	-	-	L
CO 4	L	S	-	S	L	S	-	S	M
CO 5	M	-	-	S	-	L	-	L	S
CO 6	-	-	-	S	-	L	-	S	S

Semester V	ANIMAL BIOTECHNOLOGY	Hours/Week: 4	
Core Course- 9		Credits: 4	
Course Code 18UBOC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Know the basics of animal cell culture
- Study the requirements to set up an animal cell culture
- Understand stem cell culture and its applications
- Learn about animal bioreactors and production techniques
- Have knowledge about rearing of transgenic animals
- Inspect the need for bioethics in animal biotechnology
- Analyse the dangers of releasing GEOs
- Discuss patenting of biotechnological products

Course Code 18UBOC51	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	M	S	L	M	M	S	-
CO2	M	S	M	S	M	M	S	L	-
CO3	M	M	S	S	L	S	M	S	M
CO4	L	S	M	M	M	M	S	M	L
CO5	-	L	L	M	L	M	M	L	S
CO6	S	M	L	L	-	S	M	L	S
CO7	-	L	L	M	-	L	M	S	S

Semester V	IMMUNOLOGY AND IMMUNOTECHNOLOGY	Hours/Week: 4	
Core Course- 10		Credits: 4	
Course Code 18UBOC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the history and scope of Immunology
- the students would be aware of immune system, structure and functions.
- to know about the various immunological techniques.
- to aware about the allergic reactions.
- to get the knowdge about the production of vaccine
- the students would be aware of tumour, allergy and hypersensitivity reactions

Course Code 18UBOC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	S	M	-	-
CO 2	L	-	-	-	-	S	L	L	-
CO 3	-	-	L	-	-	S	M	-	-
CO 4	L	-	-	-	L	M	-	-	-
CO 5	S	M	M	-	-	S	S	S	L
CO 6	L	-	-	-	L	L	L	S	-

Semester V	PLANT BIOTECHNOLOGY	Hours/Week: 4	
Core Course- 11		Credits: 4	
Course Code 18UBOC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- to understand the basic principles of plant tissue culture
- apply various tissue culture techniques for plant micropropagation
- analyse the organization of plant genome
- understand the significance of protoplast fusion technology in plant breeding programme
- have thorough knowledge on molecular marker aided plant breeding
- analyse the various gene transfer techniques in the development of genetically modified plants.
- develop GM plant varieties for pest resistance, stress tolerant and improved nutrient quality

Course Code 18UBOC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	-	M	L	L	L	-
CO 2	S	M	L	-	L	-	-	L	-
CO 3	S	S	-	-	S	L	-	-	-
CO 4	M	M	L	-	L	-	-	-	-
CO 5	M	M	M	-	L	L	-	L	-
CO 6	S	M	M	L	M	M	-	M	M
CO 7	L	-	M	-	L	-	-	M	S

Semester V	NANOBIOTECHNOLOGY	Hours/Week: 4	
Discipline Specific Elective 1		Credits: 4	
Course Code 18UBOE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts and historical aspects of nanotechnology
- understand the different physical, chemical and biological methods of synthesis of nanoparticles
- characteristic analysis of nanoparticles using UV spectrometry, microscopic techniques such as SEM, TEM and X-ray diffraction
- applications of nanoparticles in anticancer, antiangiogenic, drug delivery and imaging
- understand the scope of nanomedicine in near future

Course Code 18UBOE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	-	-	S	-	-
CO 2	L	S	S	L	-	M	S	L	-
CO 3	-	L	S	-	-	-	S	S	-
CO 4	-	L	-	-	L	S	S	S	M
CO 5	L	-	-	-	-	M	S	M	M

Semester V	GENOMICS AND PROTEOMICS	Hours/Week: 4	
Discipline Specific Elective - 2		Credits: 4	
Course Code 18UBOE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have a clear understanding of Genomes and proteomes
- define the various nucleotide sequencing methods
- analyze the transcriptomes and microarrays
- determine protein interactions using a computer
- discover new drugs and identify drug targets
- gain information about metabolomics

Course Code 18UBOE52	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	L	L	M	S	-	L	M	L
CO2	M	M	M	L	M	L	S	M	L
CO3	L	S	S	S	M	M	M	L	-
CO4	M	S	M	S	S	M	S	M	M
CO5	S	S	S	S	L	M	M	S	S
CO6	L	L	-	L	M	S	S	M	-

Semester V	MARINE BIOTECHNOLOGY	Hours/Week: 4	
Discipline Specific Elective 3		Credits: 4	
Course Code 18UBOE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge on Diversity of Marine living organisms
- explore the potentials of marine organisms for the production of bioactive compounds in healthcare and cosmetics
- understand the significance of marine microflora
- understand the ecological importance of oceanic habitat
- appreciate and admire artistic beauty of marine seaweeds and their cultivation
- be familiar with the application of Biotechnology for the remediation of polluted marine environment.
- develop improved varieties of fish for disease resistance using gene manipulation techniques.

Course Code 18UBOE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	L	-	-	-	-	-
CO 2	-	-	S	L	-	M	M	L	-
CO 3	L	L	-	S	-	-	-	-	-
CO 4	M	L	L	M	M	-	-	-	S
CO 5	-	-	-	-	-	S	-	S	-
CO 6	L	L	-	S	L	-	L	L	M
CO 7	-	L	S	-	L	L	-	-	L

Semester V	MEDICAL CODING AND CLINICAL RESEARCH	Hours/Week: 2	
Skill Enhancement Course- 4		Credits: 2	
Course Code 18UBOS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basics of medical coding
- know the basics of drug discovery process
- understand the different phases of clinical trials
- awareness of the regulations of clinical research
- understand the recent developments in clinical research
- analyse the ethical issues regarding clinical research

Course Code 18UBOS51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	-	-	-	S	-
CO 2	S	S	S	-	-	S	S	M	M
CO 3	M	-	M	-	-	S	-	L	-
CO 4	-	-	-	-	-	L	-	L	-
CO 5	-	-	-	L	-	-	S	M	-
CO 6	-	-	-	-	-	-	-	L	S

Semester V	HERBAL TECHNOLOGY	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course- 5			
Course Code 18UBOS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the importance of herbs in therapeutics
- collect and Identify various herbal drugs
- gain knowledge on Ayurvedic and Siddha systems of medicine
- use herbs to cure ailments
- screen drugs for phytochemicals or adulterants

Course Code 18UBOS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	-	-	M	S	M	L	-
CO 2	S	M	M	L	S	M	-	L	L
CO 3	S	M	M	L	M	M	-	S	M
CO 4	S	S	L	M	L	M	L	M	M
CO 5	S	S	S	M	L	L	S	M	S

Semester VI	BIOINFORMATICS	Hours/Week: 5	
Core Course - 14		Credits: 4	
Course Code 18UBOC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand basic research methods in bioinformatics.
- collect biological data, submission and retrieval it from databases and design databases to store the information.
- demonstrate the bioinformatics databases, perform text-and sequence-based searches, and analyze the results.
- experiment pair wise and multiple sequence alignment and will analyze the secondary and tertiary structures of protein sequences.
- understand the data structure and interpret the information.
- carry out gene and protein expression patterns and modeling cellular interactions and processes.

Course Code 18UBOC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	L	-	S	L	S
CO 2	M	L	S	S	M	-	S	L	M
CO 3	-	-	S	-	L	-	S	L	M
CO 4	L	L	-	L	L	-	S	L	-
CO 5	-	S	S	-	M	L	S	L	-
CO 6	-	M	L	L	L	S	S	S	-

Semester VI	ENVIRONMENTAL BIOTECHNOLOGY	Hours/Week: 5	
Core Course- 15		Credits: 4	
Course Code 18UBOC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the alternate energy sources
- learn about waste water treatment procedures
- acquire theoretical and practical skills in biodegradation methodology
- perceive the production of biofuels
- compare biomining and bioleaching processes
- make use of biochips and biosensors
- gain knowledge on production and applications of bioplastics

Course Code 18UBOC62	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	L	-	L	L	S	M	S	M
CO2	S	S	M	S	M	L	M	S	S
CO3	M	S	S	S	S	M	S	S	S
CO4	S	M	M	-	L	S	M	S	M
CO5	L	-	M	M	S	L	S	L	M
CO6	M	S	S	-	M	M	M	S	L
CO7	S	L	L	-	M	S	S	M	L

Semester VI	INDUSTRIAL BIOTECHNOLOGY	Hours/Week: 5	
Core Course- 16		Credits: 4	
Course Code 18UBOC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the methods of cell culture under various conditions and strain improvement methods.
- understand the various components of fermenter and their operation.
- get the knowledge of control theory for industrial fermentation control.
- know about the upstream and downstream processes.
- be aware of the overall industrial bioprocess
- manipulate the process to the requirement of the industrial needs.
- know the bulk production of commercially important modern Bioproducts, Industrial Enzymes.

Course Code 18UBOC63	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	L	M	L	M	-	S	L	M	-
CO2	S	L	S	M	L	M	L	L	L
CO3	M	S	M	L	L	L	M	S	-
CO4	S	M	S	L	M	M	M	M	M
CO5	M	L	L	M	M	L	S	S	M
CO6	L	S	M	S	M	S	S	M	S
CO7	M	S	M	S	S	S	S	S	S

Semester VI	HUMAN PHYSIOLOGY	Hours/Week: 5	
Discipline Specific Elective 4		Credits: 4	
Course Code 18UBOE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- the students know about the dialysis and excretion.
- gain an indepth analysis of the internal organs and their working mechanisms.
- understand about importance of hormones and their role in health
- perceive the respiration and functioning of lungs.
- have awareness on the ultra structure and activities of muscles.

Course Code 18UBOE61	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	L	M	S	M	M	L	M	L
CO2	L	M	L	L	S	L	L	L	-
CO3	M	S	L	M	M	S	M	M	M
CO4	S	S	M	S	S	M	M	L	-
CO5	S	M	M	L	M	L	M	-	M

Semester VI	PHARMACEUTICAL BIOTECHNOLOGY	Hours/Week: 5	
Discipline Specific Elective 5		Credits: 4	
Course Code 18UBOE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the principles of molecular and cellular biology to explain the genetic basis of variability in drug response.
- understand the fate of any drug on human organ system
- gain knowledge on drug discovery
- be aware of the routes of administration of any drug.
- acquire knowledge on bulk manufacturing of drug
- apply good manufacturing practices

Course Code 18UBOE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	M	-	S	-
CO 2	M	M	M	-	M	S	M	M	L
CO 3	L	M	M	M	L	S	L	M	L
CO 4	L	L	M	S	M	S	M	S	L
CO 5	L	L	M	M	L	S	L	S	M
CO 6	L	L	M	M	L	M	M	M	-

Semester VI	MEDICAL BIOTECHNOLOGY	Hours/Week: 5	
Discipline Specific Elective 6		Credits: 4	
Course Code 18UBOE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- discuss the scope and role of medical biotechnology in the healthcare industry
- understand the molecular basis of human diseases.
- discuss the modern diagnostic techniques for disease diagnosis.
- analyze the applications of Biotechnology in Medical Research.
- explain about the Nucleic acid based therapy for treatment of genetic disorders.
- be familiar with the current development in medical biotechnology.
- apply the Biotechnological methods in artificial reproductive technology.

Course Code 18UBOE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	-	M	S	L	M	-
CO 2	S	S	M	M	M	M	L	L	-
CO 3	S	L	M	-	-	M	-	M	-
CO 4	M	M	L	-	L	S	S	M	-
CO 5	S	L	L	-	L	M	M	M	-
CO 6	L	S	M	-	L	S	S	M	-
CO 7	L	S	M	-	L	M	M	S	M

Semester VI	DNA FINGER PRINTING	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course- 6			
Course Code 18UBOS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamentals and the History of fingerprinting
- apply Fingerprinting technique in forensics
- understand the basics of DNA fingerprinting
- apply DNA fingerprinting in Agriculture, genetics and in forensics
- analyse the Case studies and applications

Course Code 18UBOS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	-	-	L	S	-
CO 2	-	L	M	-	-	-	L	S	-
CO 3	L	-	L	-	S	-	-	L	-
CO 4	-	L	-	L	-	L	-	S	-
CO 5	L	L	S	-	M	-	-	-	-

B.Sc. Costume Design And Fashion

PROGRAMME SPECIFIC OUTCOMES

The students of B.Sc Costume Design and Fashion programme will be able to

- empower the blend of technical and professional knowledge with their skills in the field of fashion, textiles and apparel industry.
- make use of different fibers, looms, formation of fabric structure, dyeing, printing, finishes and advanced technology in textile field.
- attain skills required for designing, draping, pattern making, grading and constructing various model apparels for different age groups.
- familiarize with the essence of the traditional textiles, embroideries and costumes to develop new creations and innovations.
- hone their skills in designing, constructing, ornamenting and show-casing of design collection and accessories
- acquire knowledge and skills in illustrating, designing fashionable apparels with different textures, colours and suitable accessories for various persons using CAD and CAM.
- identify problems in the apparel and textile domain and to provide techno-economic solutions focusing on the need of the industry and society.
- gain knowledge in export and business etiquettes to be followed in textile and apparel industry
- explore sustainability in design development to become successful entrepreneurs.

Semester III	PATTERN DRAFTING AND CONSTRUCTION FOR KIDS' WEAR	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 18UCFC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- acquire skills in fashion illustrating and designing of kids' wear.
- understand the knowledge of basic drafting procedure for kids 'wear.
- apply knowledge with suitable method of cutting and fabric laying.
- construct a garment with suitable features and trims for kids' wear.
- analyze the estimation of cloth and to calculate the cost for kids' garment.
- acquire skills to become an entrepreneur.

Course Code 18UCFC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	S	S	-	M	S
CO 2	S	-	S	-	S	L	L	-	S
CO 3	S	-	S	-	S	L	L	-	S
CO 4	S	-	S	L	S	-	-	-	S
CO 5	S	L	S	-	M	-	M	L	S
CO 6	S	-	S	S	S	S	-	M	S

Semester III	FASHION DESIGNING	Hours/Week: 4	
Allied Course – II		Credits: 4	
Course Code 18UCFA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- apply knowledge of fashion forecasting and various fashion events.
- design garments by using elements and principles of design.
- familiarize with color aspects that are needed for garment designing.
- understand and implement the new technologies related to design development in the field of textiles.
- design dress for person, in accordance with their personality.

Course Code 18UCFA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	M	M	-
CO 2	S	L	S	S	S	S	-	-	S
CO 3	S	M	S	S	S	S	L	-	S
CO 4	S	S	S	S	S	S	L	-	S
CO 5	S	M	S	S	S	S	L	-	S

Semester III	FASHION MERCHANDISING	Hours/Week: 2	
SEC– 2		Credits: 2	
Course Code 18UCFS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- demonstrate the concept, importance, process and types of merchandising in an apparel industry.
- indicate the responsibilities, objectives and strategies of apparel merchandising.
- apply comprehensive ability in creating and presenting textile products in fashion industries.
- analyze the concept of various fashion cycles involved in buying and exporting apparels.

Course Code- 18UCFS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	L	-	M	M	S	S	S
CO 2	S	L	S	L	S	L	S	S	S
CO 3	S	M	M	M	S	S	M	S	S
CO 4	S	-	-	-	-	-	S	S	S

Semester III	BASICS OF FASHION	Hours/Week: 2	
NMEC-1		Credits: 2	
Course Code 18UCFN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- apply the elements of design on apparels
- acquire knowledge about the principles of design on apparels.
- identify and create different motifs from traditional to trendy in textile field.
- understand the concepts of fashion evaluation and fashion forecasting.
- create dresses suitable for abnormal figures.

Course Code-18UCFN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	S	S	-	-	S
CO 2	S	L	S	S	S	S	-	-	S
CO 3	S	M	S	S	S	S	-	-	S
CO 4	S	-	L	L	S	L	L	-	S
CO 5	S	M	S	S	S	S	-	-	S

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester : III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits: 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	FABRIC STRUCTURE AND DESIGN	Hours/Week: 5	
Core Course - 6		Credits: 5	
Course Code 18UCFC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge about the different types of loom and also the process involved in it.
- understand the objectives and operating principles from basic to fancy weaves.
- attain knowledge about the manufacturing process of knitting and non woven fabrics and its importance in selection of fabric.
- recognize the different types of weave and develop the ability to judge the quality of fabric.
- establish themselves as entrepreneurs in the field of textiles.

Course Code 18UCFC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	L	-	-	-	-	-
CO 2	L	S	M	-	M	-	L	L	-
CO 3	L	M	M	-	-	M	-	-	-
CO 4	-	S	-	-	-	-	-	-	-
CO 5	-	M	M	-	-	-	-	-	S
CO 6	S	-	-	-	M	-	M	S	S

Semester IV	FASHION AND CLOTHING PSYCHOLOGY	Hours/Week: 4	
Allied Course – II		Credits: 4	
Course Code 18UCFA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- attain knowledge about the basic of colour, dimensions, categories and its characteristics.
- gain knowledge about the different types of home furnishing materials and their care and maintenance.
- acquire knowledge on the selection of draperies and curtains for different types of doors and windows.
- trace knowledge on suitability of home furnishing linens for different end use.
- application of its importance in day to day life.

Course Code 18UCFA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	M	S	M	M	-	S
CO 2	S	-	-	-	L	-	-	-	M
CO 3	-	-	-	-	S	-	-	S	S
CO 4	S	M	S	M	L	L	-	L	S
CO 5	M	M	S	S	M	-	-	-	S

Semester IV	INTERIOR DESIGNING	Hours/Week: 2	
NMEC-2		Credits: 2	
Course Code 18UCFN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- attain knowledge about the basic of colour, dimensions, categories and its characteristics.
- gain knowledge about the different types of home furnishing materials and their care and maintenance.
- acquire knowledge on the selection of draperies and curtains for different types of doors and windows.
- trace knowledge on suitability of home furnishing linens for different end use.
- application of its importance in day to day life.

Course Code 18UCFN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	S	S	S	-	M	S
CO 2	M	L	-	S	S	L	-	M	S
CO 3	M	M	M	S	S	L	-	M	M
CO 4	S	S	L	M	S	L	-	M	S
CO 5	S	S	M	S	S	M	M	M	M

Semester V	PATTERN DRAFTING AND CONSTRUCTION FOR ADULT WEAR I	Hours/Week: 4	
Core Course – 7		Credits: 4	
Course Code 18UCFC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- formulate skills in fashion illustration and designing for adult wear.
- illustrate basic drafting and constructing methods for various garments.
- create various blocks using basic blocks for different measurements.
- make use of stitching procedure for the designed adult wear.
- estimate the required fabrics and its cost needed for the designed adult wear.
- generate skills to become an entrepreneur.

Course Code 18UCFC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	S	S	L	-	S
CO 2	S	L	S	S	S	S	L	-	S
CO 3	S	L	S	S	S	S	L	-	S
CO 4	S	L	S	S	S	M	L	-	S
CO 5	S	L	S	S	S	M	-	-	S
CO 6	S	S	S	S	S	M	-	M	S

Semester V	DRAPING TECHNIQUES	Hours/Week: 4	
Core Course – 8		Credits: 4	
Course Code 18UCFC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the human body proportion and apply its principles in designing the garments.
- attain skills in basic and advanced techniques involved in draping.
- create design development for various body proportions.
- obtain skills to create various blocks in draping.
- gain knowledge about the factors involved for the proper shape and fit of the garment.
- acquire skills of draping a garment from conception to final construction.

Course Code 18UCFC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	-	M	-	-	S
CO 2	S	-	S	S	-	M	-	-	S
CO 3	S	-	S	S	-	M	-	-	S
CO 4	S	-	S	S	M	M	-	-	S
CO 5	S	-	S	S	L	M	M	-	S
CO 6	S	-	S	S	M	M	-	-	S

Semester V	TEXTILE WET PROCESSING	Hours/Week: 4	
Core Course 9		Credits: 4	
Course Code 18UCFC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- acquire knowledge on preparatory and pre preparatory process of wet processing.
- attain knowledge on bleaching, dyeing and printing processes.
- know the various dyeing machineries and printing machineries.
- understand the different methods and styles of printing techniques.
- understand the importance and applications of various finishes needed for fabric ornamentation.
- acquire the finishing skills needed to work in textile industries.

Course Code 18UCFC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	M	L	-	M	S	-
CO 2	S	S	S	M	L	L	L	L	L
CO 3	S	S	-	-	M	S	M	M	-
CO 4	S	S	L	-	S	M	-	-	-
CO 5	S	S	L	S	S	L	M	M	-
CO 6	S	S	L	-	-	-	S	M	M

Semester V	FASHION AND APPAREL MARKETING	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UCFE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the concept of marketing and behavior of consumer in an apparel industry.
- gain knowledge about the types and trends in marketing environment.
- attain knowledge about the functions and process involved in marketing.
- impart knowledge about fashion advertising and its types and techniques followed in an apparel marketing.
- Understand the fundamentals of basic advertising agencies and budgeting techniques in apparel marketing.

Course Code 18UCFE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	L	M	M	L	S	S	S
CO 2	S	-	-	L	L	L	S	S	S
CO 3	S	-	M	-	-	-	S	S	S
CO 4	S	-	-	-	S	L	S	S	S
CO 5	S	-	-	-	S	L	S	S	S

Semester V	COSTUMES AND TEXTILES OF THE WORLD	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCFE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- indicate the cultural, social and psychological aspects of textiles and costumes.
- show the world fashion art.
- categorize the styles of apparel and its accessories pertaining to various countries.
- locate the significance of historical background of textiles and fashion.

Course Code 18UCFE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	L	L	S	L	L	-	-	L
CO 2	L	L	L	S	M	L	-	-	L
CO 3	M	L	M	S	S	L	-	-	M
CO 4	M	L	L	S	L	L	-	-	M

Semester V	GARMENT COSTING	Hours/Week: 4	
DSEC -1		Credits: 4	
Course Code 18UCFE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- impart knowledge among the students with the requirements and the types of garment costing.
- gain knowledge about the principles of costing in an apparel industry.
- attain knowledge about the cost estimation of raw materials and production cost involved in an apparel industry.
- acquire knowledge about the importance of cost control system and preparation of cost sheet.
- understand the theory of garment costing in an apparel industry.

Course Code 18UCFE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	-	M	L	S	S	S
CO 2	S	M	M	-	S	L	S	S	-
CO 3	S	-	-	L	S	L	S	S	-
CO 4	S	-	-	-	-	-	S	S	-
CO 5	S	-	-	-	-	-	S	S	-

Semester V	TECHNICAL TEXTILES	Hours/Week: 2	
SEC-5		Credits: 2	
Course Code 18UCFS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the different forms of technical textiles.
- acquire knowledge about the new trends of fibers used in technical textiles.
- obtain knowledge about the types of fibers and its applications used in the field of smart textiles and medical textiles.
- impart knowledge about the application of textiles in geo-field.
- familiarize with high performance textiles.

Course Code 18UCFS52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	-	S	-
CO 2	S	S	L	L	M	M	L	S	-
CO 3	S	S	L	L	M	M	L	S	-
CO 4	S	S	L	L	M	M	L	S	-
CO 5	S	S	L	L	M	M	L	S	-

Semester VI	PATTERN DRAFTING AND CONSTRUCTION FOR ADULT WEAR II	Hours/Week: 5	
Core Course – 10		Credits: 4	
Course Code 18UCFC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- formulate skills in fashion illustration and designing for adult wear.
- generalize the drafting procedure for garment construction.
- prepare basic blocks to create various styles by using different measurements.
- estimate the required fabrics needed for the designed adult wear.
- calculate the cost for the designed adult wear.
- generate skills to become an entrepreneur.

Course Code 18UCFC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	-	M	S
CO 2	S	-	S	S	S	M	L	-	S
CO 3	S	-	S	S	S	S	-	-	S
CO 4	S	-	S	S	S	L	-	L	S
CO 5	S	L	S	S	S	-	-	M	S
CO 6	S	S	S	S	S	S	S	S	S

Semester VI	COMPUTER AIDED DESIGNING	Hours/Week: 5	
Core Course – 11		Credits: 4	
Course Code 18UCFC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic concept of CIM, and its applications in a garment industry.
- extend knowledge about the pattern making, cutting, spreading and grading by using CAM.
- interpret the knowledge of tools and colour graphics in coral draw software.
- impart knowledge about the usage of technological software used in textile and apparel industry.
- utilize the different applications of software like CAD and CAM used for fabric designing and surface enrichment.
- attain the abilities and capabilities in design development and applying computer software in the field of garment manufacturing.

Course Code 18UCFC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	L	-	M	S	L	L	L
CO 2	M	-	M	-	M	S	L	L	M
CO 3	L	-	M	-	M	S	L	M	S
CO 4	S	-	M	-	M	S	M	L	M
CO 5	M	-	M	-	M	S	L	-	M
CO 6	L	-	M	-	S	S	M	M	S

Semester VI	TRADITIONAL COSTUMES AND INDIAN TEXTILES	Hours/Week: 5	
Core Course – 12		Credits: 4	
Course Code 18UCFC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- recognize the historical textiles and costumes in India.
- identify the different textiles and costumes of various states in India.
- indicate the traditional Indian textile design of printing and dyeing of each region to contemporary form.
- analyze the various traditional embroideries of India.
- relate the cultural heritage of India with the traditional costumes and textiles.
- create global design products with new technology and traditional craft.

Course Code 18UCFC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	S	L	L	-	-	L
CO 2	M	M	-	S	L	L	-	-	L
CO 3	S	S	L	S	M	M	-	-	M
CO 4	S	-	-	S	S	-	-	-	S
CO 5	S	L	-	S	L	L	-	-	M
CO 6	S	M	M	S	M	S	L	-	S

Semester VI	APPAREL QUALITY AND MANAGEMENT	Hours/Week: 5	
DSEC 2		Credits: 4	
Course Code 18UCFE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- acquire knowledge about the benefits and functions of quality control in apparel industries.
- obtain knowledge about the merchandising standards and specifications involved in apparel industry.
- familiarize with inspection of quality control from raw materials to finished garments.
- understand the quality control for packaging, warehousing and shipping in apparel industries.
- analyze the functions of production control, analysis and cost control management.

Course Code 18UCFE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	S	S	-
CO 2	S	S	-	-	M	-	M	S	-
CO 3	S	S	M	-	S	-	M	S	-
CO 4	S	S	-	-	-	-	M	S	-
CO 5	S	S	M	-	-	M	S	S	-

Semester VI	FOREIGN TRADE TECHNIQUES	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code 18UCFE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the procedures, rules and documentation related to export business.
- demonstrate the methods of payment used in foreign trade.
- become familiar in the pre shipment inspection and post shipment formalities in shipment.
- gain skills to start an export business and understand the policies of the government.
- acquire knowledge on export correspondence and negotiation.

Course Code 18UCFE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	S	S	-
CO 2	S	-	-	-	-	-	S	S	-
CO 3	S	-	-	-	-	-	S	S	-
CO 4	S	-	-	-	-	-	S	S	-
CO 5	S	-	-	-	-	-	S	S	-

Semester VI	FASHION RETAILING AND MERCHANDISING	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code 18UCFE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- analyze the concept of retail merchandising from basic to advance level.
- recognize and identify the retail locations at global market.
- impart knowledge about the brands and private labels used in the market sectors.
- familiarize with the financial aspects of merchandising
- plan to design the store layout.

Course Code 18UCFE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	S	-	M	S	M
CO 2	S	-	-	-	M	-	M	S	M
CO 3	S	-	-	-	-	-	-	S	M
CO 4	S	-	-	-	-	-	M	S	M
CO 5	S	-	-	-	S	-	-	S	M

B.Sc. Computer Science

PROGRAMME SPECIFIC OUTCOMES

1. **PSO1: Knowledge in Computer Science:** Familiarity and practical competence in a broad range of programming languages, open source platforms, Computer hardware and various other domains of Computer Science.
2. **PSO2: Problem analysis and Development of solutions:** Ability to analyze a real time problem, identify and formulate the computing requirements appropriate to give an efficient and effective solution.
3. **PSO3: Computing Knowledge:** Ability to apply knowledge of computing sciences as an algorithmic thinker and a data-fluent innovator who will thrive in a rapidly changing field by providing solutions to real world problems.
4. **PSO4: Programming Skill:** Ability to implement the solutions as efficient programs.
5. **PSO5: Intrapersonal and Interpersonal Skills:** Ability to implement and evaluate the software and hardware systems, software components and software processes as a member and leader in a team, hone managerial skills in multidisciplinary areas and projects.
6. **PSO6: Modern tool usage:** Ability to acclimatize new computing technologies for attaining expertise and to use the acquired knowledge, skills to explore modern tools necessary for computing environment.
7. **PSO7: Vertical Mobility:** Acquisition of core knowledge in diverse areas of Computer Science that sets a pathway to pursue higher studies in Computer Science.
8. **PSO8: Employability Skills:** Capability to use knowledge of modern computer languages and technologies for their successful career in Computer industries
9. **PSO9: Entrepreneurial Talents:** Capacity to create platforms to become an entrepreneur.

Semester III	PROGRAMMING WITH JAVA	Hours/Week: 4	
Core Course 5		Credits: 4	
Course Code 18UCSC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- write Java application programs using proper program structuring.
- identify classes, objects, members of a class and relationships among them.
- demonstrate the concepts of polymorphism, inheritance and package.
- understand the execution of multiple tasks concurrently within the same program (Thread Concept)
- write Java programs to implement error handling techniques using exception handling.
- understand Applet concepts.

Course Code 18UCSC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	L	-	L	-	-
CO 2	M	M	-	M	L	-	L	-	-
CO 3	M	M	M	S	L	-	M	S	-
CO 4	M	M	L	S	M	M	M	M	M
CO 5	M	S	-	S	M	-	M	M	M
CO 6	M	M	L	S	M	M	S	M	M

Semester III	COMPUTER ORGANIZATION	Hours/Week: 4	
Core Course 6		Credits: 3	
Course Code 18UCSC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- the basics of computer hardware and how software interacts with computer hardware.
- how computers represent and manipulate data.
- a simple computer design including data format, instruction format, instruction set, addressing modes, bus structure, input/output, memory, Arithmetic/Logic unit, control unit, address, data flow and instruction flow.
- computer arithmetic like Addition, Subtraction and Multiplication
- basics of Instruction Set Architecture (ISA) – MIPS
- Multiprocessor architecture

Course Code 18UCSC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	-	-	L	-	-
CO 2	S	-	S	-	-	-	M	-	-
CO 3	S	-	-	L	M	M	S	-	-
CO 4	-	-	M	S	-	S	M	L	-
CO 5	M	-	-	-	M	-	S	S	-
CO 6	S	-	-	-	-	-	M	S	-

Semester III	PROGRAMMING USING JAVA LAB	Hours/Week: 4	
Core Course 7		Credits: 2	
Course Code 18UCSC31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- implement Object Oriented Programming Concepts (class, constructor, overloading)
- develop programs applying Inheritance concept
- create Java packages and interfaces
- implement Multithreading concept in Java for simultaneous execution of more than one task at the same time
- implement exception handling for creating robust Java programs
- develop programs using Applets

Course Code 18UCSC31P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	L	M	-	-	L	-	-
CO 2	M	M	M	M	-	-	M	L	-
CO 3	M	M	S	M	L	-	M	M	-
CO 4	M	M	S	S	M	L	M	S	S
CO 5	S	S	S	S	M	M	M	S	S
CO 6	S	S	S	S	M	M	M	S	S

Semester III	RESOURCE MANAGEMENT TECHNIQUES	Hours/Week: 4	
Allied Course 3		Credits: 4	
Course Code 18UCSA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have an overview of special classes of linear programming problems.
- have a conceptual understanding of the role that management science plays in the decision making process.
- Solve real life problems by formulating models to be solved using L.P.P.
- Implement speedy service delivery reducing the clients' waiting period.
- use critical path analysis to solve real life project scheduling time and timely delivery.

Semester III	INTRODUCTION TO COMPUTERS AND OFFICE AUTOMATION	Hours/Week: 2	
Non Major Elective Course 1		Credits: 2	
Course Code 18UCSN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- demonstrate fundamental knowledge of Windows 2007.
- become conversant with Microsoft Office Word 2010.
- know how to prepare and format a word document.
- develop an formal business letter using Mail merge.
- have a comprehensive knowledge of worksheet and its uses in Microsoft Office Excel 2010.
- get familiarized with the use of basic functions and formulas in Microsoft Office Excel 2010.

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	WEB PROGRAMMING	Hours/Week: 4	
Core Course 8		Credits: 4	
Course Code 18UCSC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the applications of Internet.
- write well-structured, easily maintainable JavaScript code following accepted good practice.
- use JavaScript to create web pages with interactivity.
- write programs with basic functions in JavaScript.
- use JavaScript Objects efficiently.
- use PHP and SQL to create Forms for database manipulation.

Course Code 18UCSC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	-	-	-	-	-
CO 2	-	-	S	S	M	-	M	-	L
CO 3	S	-	-	S	S	-	M	L	M
CO 4	S	-	S	S	-	-	-	M	M
CO 5	S	-	S	S	-	-	M	M	S
CO 6	-	S	-	S	-	S	S	S	S

Semester IV	WEB PROGRAMMING LAB	Hours/Week: 4	
Core Course 9		Credits: 2	
Course Code 18UCSC41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the importance of the web as a medium of communication
- write JavaScript code that works in all major browsers
- design and implement websites with good aesthetic sense of designing and latest technical knowledge
- apply a structured approach to identify needs and functionality of a website.

Corse Code 18UCSC41P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	-	-	M	-	-
CO 2	S	-	-	S	-	-	M	-	L
CO 3	S	-	-	S	-	-	-	M	S
CO 4	S	L	-	S	-	-	L	S	S

Semester IV	QUANTITATIVE APTITUDE	Hours/Week: 4	
Allied Course 4		Credits: 4	
Course Code 18UCSA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- equip themselves with the relevant skills to appear for various competitive examinations.
- acquire right skills to tackle aptitude problems.
- improve mental calculations.
- improve the speed of solving problems
- solve problems with ease and confidence.

Semester IV	SOFTWARE ENGINEERING	Hours/Week: 2	
Skill Enhancement Course 4		Credits: 2	
Course Code 18UCSS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts and major issues of software engineering
- comprehend the basic principles of software development life cycle.
- realize the benefits of software analysis, design, testing efforts
- cognize the significance of verification techniques.

Course Code 18UCSS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	-	-	-	-	S	L	-
CO 2	-	-	-	-	S	-	S	L	-
CO 3	-	S	-	-	-	-	M	L	-
CO 4	-	-	-	-	M	-	S	-	L

Semester IV	PYTHON PROGRAMMING LAB	Hours/Week: 1 T + 1P	
Skill Enhancement		Credits: 2	
Course 5			
Course Code 18UCSS41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the basics of Python programming
- implement various data structures provided by Python library including string, list
- manipulate set using operators and methods
- understand and use built-in functions of Visual Python

Course Code 18UCSS41P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-		S	-	S	-	S	-
CO 2	L	-	S	-	-	S	-	S	M
CO 3	S	S	S	-	-		-	-	-
CO 4	-	-	S	S	-	S	S	S	M

Semester IV	INTRODUCTION TO INTERNET AND HTML 5	Hours/Week: 2	
Non Major		Credits: 2	
Elective Course Course Code 18UCSN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get acquainted with different Internet services and Governance
- comprehend the basic features of Web Browser
- publicize their messages through E-mail
- create web page and apply various formatting on text
- develop application using Forms.

Semester V	DATABASE MANAGEMENT SYSTEM CONCEPTS	Hours/Week: 5	
Core Course10		Credits: 5	
Course Code 18UCSC51N		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamental concepts for designing, using and implementing the Database System Applications.
- acquire knowledge of database design, E-R Model and functional dependencies.
- master the basics of SQL and construct queries with SQL.
- be familiar with the issues of transaction processing and concurrency control.
- get focused on failure classification and ways to recover the transaction system.
- transform the knowledge obtained on client-server architectures for any database system.

Course Code 18UCSC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	-	-	M	-	M	L	-
CO 2	M	M	-	-	M	-	M	M	-
CO 3	M	M	M	M	M	-	M	M	L
CO 4	M	M	M	S	M	-	M	M	L
CO 5	M	S	S	S	M	L	M	S	M
CO 6	M	S	S	S	M	L	M	S	M

Semester V	SYSTEM SOFTWARE CONCEPTS	Hours/Week : 5	
Core Course 11		Credits : 5	
Course Code 18UCSC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the learners will be able to

- understand the relationship between system software and machine architecture.
- know the design and implementation of assemblers, macro processors, loaders, linkers and compilers.
- understand the process of scanning and parsing of a program.
- understand the processing of a HLL program for execution on a computer system.
- have clear knowledge about system software like assemblers, loaders, linkers, macro processors and compilers.

Course Code 18UCSC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	S	M	S	L	-
CO 2	M	-	-	-	S	M	S	L	-
CO 3	M	-	-	L	S	-	S	-	-
CO 4	M	-	-	M	S	-	S	-	-
CO 5	M	-	-	M	S	-	S	-	-

Semester V	COMPUTER NETWORKS	Hours/Week: 5	
Core Course 12		Credits: 5	
Course Code 18UCSC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will

- be able to understand the basic concepts and mechanisms underlying the Computer Network and to enumerate the layers of reference models.
- get acquainted with design issues, error detection and correction and protocols in Data Link Layer.
- enrich their knowledge of Routing Algorithms used in Network Layer.
- identify the basic services and protocols in transport and application layer.
- be conversant with the services of Application Layer and to understand the concepts of www.

Course Code 18UCSC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-		-	L	-	L	M	-
CO 2	-	-	S	-	L	L	M	M	-
CO 3	-	-	S	-	-	M	S	M	-
CO 4	L	M		-	-		M	M	-
CO 5	-	-	M	-	-	L	S	S	M

Semester V	DATABASE MANAGEMENT SYSTEMS LAB	Hours/Week: 5	
Core Course 13		Credits: 2	
Course Code 18UCSC51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of basic SQL queries and basic operations.
- determine and analyse the concept of nested queries.
- get trained in applications using cursors, triggers, functions, procedures, exception handling.
- develop applications using Forms in VB.Net.

Course Code 18UCSC51P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	M	M	M	-	M	L	L
CO 2	M	M	M	M	M	L	M	L	L
CO 3	M	S	M	S	S	M	M	S	M
CO 4	M	S	S	S	M	M	M	S	M

Semester V	MOBILE APPLICATIONS DEVELOPMENT	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCSE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge of Android Programming Environment.
- enhance their knowledge of Java and XML to develop Android applications.
- familiar with the concept of UI components and SQLite Database.
- know how to implement GUI concepts in Android Platform.
- build any application for Android operation system devices.

Course Code 18UCSE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	-	-	-	-	M	M	-
CO 2	S	M	M	-	-	-	M	M	-
CO 3	S	S	M	M	-	-	M	M	L
CO 4	S	S	M	S	-	-	M	S	S
CO 5	S	S	M	S	-	M	M	S	S

Semester V	INTRODUCTION TO MICROPROCESSORS	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCSE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- describe the internal architectures, pin diagrams and timing diagrams of 8086/8088 Microprocessors.
- demonstrate the working of 8086/8088 Microprocessors along with pins, their functions and their addressing modes.
- understand Assembly Language Programming very well.
- develop assembly language programs using various programming tools.
- know about various Input / Output devices.
- demonstrate the working of various chips for Input and Output purposes.
- have the knowledge of various advanced Microprocessors.

Course Code 18UCSE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	-	S	S	-
CO 2	S	-	-	-	M	-	S	M	-
CO 3	-	S	-	M	S	-	-	-	-
CO 4	-	S	-	S	M	-	-	-	-
CO 5	M	-	S	-	M	-	S	-	-
CO 6	M	-	-	-	M	-	S	L	M
CO 7	M	-	-	-	M	-	S	-	-

Semester V	COMPUTER GRAPHICS	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCSE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the application fields of Computer Graphics like film special effects, simulation, games, medical imagery.
- understand how graphical input and output devices work.
- analyse how primitive graphical objects are generated in the computer.
- realize the significance of various clipping operations.
- apprehend the concepts of interactive picture construction techniques.

Course Code 18UCSE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	-	-	M	-	-	-	-
CO 2	M	S	M	M	-	-	-	-	-
CO 3	M	M	M	-	-	-	-	-	-
CO 4	S	-	S	S	-	-	-	-	-
CO 5	M	-	L	-	-	-	L	-	-

Semester V	MOBILE APPLICATIONS DEVELOPMENT LAB	Hours/Week: 4	
DSEC 2		Credits:2	
Course Code 18UCSE51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- have the knowledge of Android Programming Environment.
- gain basic idea of XML and using it to develop an Android application.
- familiarize themselves with the concept of UI components and SQLite Database.
- implement GUI concepts in Android Platform.
- build any application for Android devices.

Course Code 18UCSE51P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	-	-	-	S	-
CO 2	M	S	S	S	S	-	-	-	-
CO 3	M	-	-	S	-	S	M	M	S
CO 4	M	-	S	S	-	S	M	S	S
CO 5	S	-	M	S	-	S	S	S	S

Semester VI	MICROPROCESSORS LAB	Hours/Week: 4	
DSEC 2		Credits: 2	
Course Code 18UCSE52P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with the architecture and Instruction set of Intel 8086 microprocessor
- provide practical hands on experience with Assembly Language Programming
- set up programming strategies and select proper mnemonics and run their program on the training boards.
- improve programming logic and concepts of 8086 microprocessor
- gain knowledge about conversions
- develop ALP for 8 bit and 16 bit Arithmetic operations using 8086 microprocessor

Course Code 18UCSE52P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	M	-	-	-	-
CO 2	-	S	-	S	S	-	-	-	-
CO 3	-	-	-	S	M	-	S	-	-
CO 4	-	-	-	S	-	-	M	-	M
CO 5	-	S	S	S	-	-	-	-	-
CO 6	-	S	S	S	-	-	-	-	-

Semester V	COMPUTER GRAPHICS LAB	Hours/Week: 4	
DSEC 2		Credits: 2	
Course Code 18UCSE53P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the algorithmic concepts necessary for programming computer graphics.
- demonstrate various line drawing, circle drawing, ellipse drawing algorithms.
- learn and illustrate the transformation of graphical images and pictures.
- create interactive graphics applications using one or more graphics application programming interfaces.
- understand and demonstrate 2D transformation techniques.
- Demonstrate computer graphics animation.

Course Code 18UCSE53P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	S	M	-	-	-	L	L
CO 2	M	M	S	M	-	-	-	L	-
CO 3	M	M	S	S	-	-	-	L	-
CO 4	M	M	S	S	-	M	-	L	L
CO 5	M	M	S	S	-	M	-	L	-
CO 6	M	-	-	L	-	-	-	L	-

Semester VI	COMPUTER ALGORITHMS	Hours/Week: 5	
Core Course 14		Credits: 5	
Course Code 18UCSC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the learners will be able to

- understand the concepts of Divide and Conquer technique and have the skills to write efficient procedures like sorting, searching etc.
- understand the concepts of Dynamic Programming and have the knowledge to solve problems like shortest paths problem, travelling salesperson problem, etc.
- understand the concepts of Greedy techniques and acquire the knowledge to develop optimal procedures for problems like minimum spanning tree construction, single source shortest paths, Huffman code, etc.
- understand the concepts of backtracking techniques and have the knowledge to solve problems like N-queens problem, Sum of subsets problem, Graph coloring.
- determine and develop the optimal algorithms for any given problems.
- learn to compare and analyse the algorithms based on time complexity.

Course Code 18UCSC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	S	S	M	-	M	M	-
CO 2	M	-	S	S	M	-	M	M	-
CO 3	-	-	S	S	M	-	M	M	-
CO 4	-	-	S	S	M	-	M	M	-
CO 5	-	-	S	S	S	-	M	M	-
CO 6	-	-	S	S	S	-	M	M	-

Semester VI	OPERATING SYSTEM CONCEPTS	Hours/Week: 5	
Core Course 15		Credits: 5	
Course Code 18UCSC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the structure and services of operating system and system calls.
- experiment with various CPU scheduling algorithms.
- comprehend deadlock and memory management strategies.
- realize virtual memory concepts.
- illustrate the various file management strategies.
- understand the Computer System Structure.
- explain about disk management.

Course Code 18UCSC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	L	-	S	-	-
CO 2	M	-	L	-	S	-	S	-	-
CO 3	L	-	-	-	S	-	S	L	-
CO 4	L	-	-	-	S	-	S	L	-
CO 5	L	-	-	-	L	-	S	-	-
CO 6	L	-	-	-	L	-	S	-	-
CO 7	L	-	-	-	S	-	S	L	-

Semester VI	INTRODUCTION TO DATA MINING	Hours/Week: 5	
Core Course 16		Credits: 5	
Course Code 18UCSC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamental concepts of Data Warehousing, Data Mining applications.
- understand the concepts of Data Cube Implementation and OLAP.
- know how to apply pre-processing methods on raw data.
- discover interesting patterns from large amounts of data to analyse and extract patterns to solve problems, make predictions of outcomes.
- know how to apply the concepts of Data Mining techniques for clustering, association, and classification.
- select and apply proper Data Mining algorithms to build analytical applications

Course Code 18UCSC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	S	-	-
CO 2	S	-	-	-	-	M	M	-	-
CO 3	S	M		-	-	-		-	-
CO 4	S	-	S	-	-	-	M	M	-
CO 5		S	-	L	S	-	S	M	-
CO 6	S	S	-	-	S	-	S	M	M

Semester VI	OPERATING SYSTEM LAB	Hours/Week: 4	
Core Course 17		Credits: 2	
Course Code 18UCSC61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- build C program for basic UNIX commands.
- choose the best CPU Scheduling for the given problem instance.
- know the difference in implementation of file and memory allocation algorithms.
- identify the performance of page replacement algorithm.
- simulate file organisation and disk scheduling algorithms.

Course Code 18UCSC61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	M	-	-	M	M	-
CO 2	M	M	L	M	-	-	M	M	-
CO 3	M	M	-	M	-	-	M	M	-
CO 4	S	M	M	S	L	-	M	M	-
CO 5	S	M	M	S	L	-	M	M	-

Semester VI	INTRODUCTION TO CLOUD COMPUTING	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCSE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the need for cloud computing.
- comprehend virtualization concept in cloud.
- get an idea of security threats in cloud.
- know the available web services.
- find new avenues of applications of cloud.
- gain knowledge of Mobile Cloud Computing.

Course Code 18UCSE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	L	-	-	-	M	-	-
CO 2	M	-	-	-	M	-	M	L	-
CO 3	S	-	-	-	-	-	S	L	-
CO 4	S	-		-	-	-	S	M	-
CO 5	M	-	S	-	-	-	S	L	-
CO 6	-	-	M	-	-	-	M	M	-

Semester VI	INTRODUCTION TO INTERNET OF THINGS	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCSE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- familiar with the concept of IoT.
- identify the components of IoT devices and communication technologies.
- discriminate between M2M and IoT technologies.
- realize the significance of various IoT architectures.
- develop portable IoT applications for real-world situations using Python.

Course Code 18UCSE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	S	S	-	M
CO 2	-	-	M	-	M	-	-	S	M
CO 3	-	-	S	-	-	-	M	M	-
CO 4	M	-		-	-	S	-	S	-
CO 5	S	-	S	S	-		-	-	M

Semester VI	INTRODUCTION TO BIG DATA	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCSE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of Big Data and its careers opportunities.
- comprehend the use of Big Data in Business Context.
- think critically in making decisions based on data analytics.
- understand how to create, review, and manipulate data-sets in R.
- create graphs and perform few statistical tests using R.

Course Code 18UCSE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	L	-	-	-	-	S	S
CO 2	S	-	-	-	L	-	-	L	M
CO 3	S	-	M	-	-	-	L	-	M
CO 4	S	L	L	L	-	L	M	M	M
CO 5	S	L	L	L	-	L	S	L	L

Semester V	COMPUTER ALGORITHMS LAB	Hours/Week: 4	
DSEC 4		Credits: 2	
Course Code 18UCSE61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- Write efficient programs for sorting, searching by implementing the concepts of Divide and Conquer technique.
- develop optimal procedures for Binomial Coefficients, shortest paths by using the concepts of Dynamic Programming.
- develop efficient procedures for minimum spanning tree construction, single source shortest paths by implementing the concepts of Greedy techniques.
- to solve problems like N-queens problem, Graph coloring by using backtracking techniques.
- learn to compare and analyse the algorithms based on time complexity.

Course Code 18UCSE61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	S	S	M	-	M	M	L
CO 2	-	-	S	S	M	-	M	M	L
CO 3	-	-	S	S	M	-	M	M	L
CO 4	-	-	S	S	M	-	M	M	L
CO 5	-	-	S	S	S	-	M	M	L

Semester VI	MATHEMATICAL APPLICATIONS LAB	Hours/Week: 4	
DSEC 4		Credits: 2	
Course Code 18UCSE62P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- manipulate Vectors and Matrices.
- create various Graphical Plots.
- perform Differentiation and Integration on symbolic variables.
- apply mathematics on Images.
- apply Edge filters on Images.
- work with images in GUI environment.

Course Code 18UCSE62P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	S	-	S	-	-	-
CO 2	-	-	-	-	-	S	S	M	-
CO 3	-	-	S	S	-	S	-	-	-
CO 4	-	M	S	S	-	S	-	-	M
CO 5	-	-	S	S	M	S	-	L	S
CO 6	-	-	M	S	L	S	-	L	L

Semester VI	DATA SCIENCE LAB	Hours/Week: 4	
DSEC 4		Credits: 2	
Course Code 18UCSE63P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand basic R programming concepts including vectors, list, arrays matrices and functions etc.
- import, review, manipulate and summarize datasets in R.
- familiarize with how various statistics like mean, median etc can be collected for data exploration in R.
- use R graphics and tables to visualize results of various statistical operations on data.
- Perform subsetting operations on data frame.

Course Code 18UCSE63P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	M	-	S	M	-	-
CO 2	-	-	-	S	-	S	-	-	L
CO 3	-	-	-	S	-	S	M	S	L
CO 4	S	-	S	S	-	S	S	M	S
CO 5	-	-	S	S	-	S	-	-	-

Semester VI	PHP and MYSQL LAB	Hours/Week: 1 T + 1 P	
SEC 6		Credits: 2	
Course Code 18UCSS61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- use PHP functions and string functions.
- get with COOKIES and SESSIONS.
- design the web page.
- create and manage database.
- recognize passing of parameters from HTML to PHP.

Course Code 18UCSS61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	-	-	-	-	-
CO 2	S	-	-	S	-	-	S	-	-
CO 3	S	-	-	S	-	L	M	S	-
CO 4	S	-	-	S	-	S	M	S	M
CO 5	S	-	-	S	-	-	-	S	M

B.Sc. Information Technology

PROGRAMME SPECIFIC OUTCOMES

PSO1:Acquiring the Knowledge of Components of Information Technology: Obtain the knowledge of the components of Information Technology incorporating Hardware, Software, Database and Network to manage the hardware and software components in a computer independently.

PSO2:Understanding the Current Technology:Gain Ability to familiarize the latest trends in technological development and thereby applying standard Software Engineering practices and strategies in software project development using opensource platforms to deliver a best quality product.

PSO3: Applying Modern Tools on Developing Solutions: Create, select, and apply appropriate techniques, resources and IT tools including current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, Networking, Web systems and technologies with an understanding of the limitations.

PSO4:Enhancing Communication and Team Work Skills:As an individual and as a member or a leader in diverse teams learns by working cooperatively, creatively and responsibly.

PSO5:Acquiring Knowledge in Programming Languages:Impart knowledge of software managed in a computer to analyse and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics and networking to apply for computer-based systems of varying complexity.

PSO6:Career Development:Emerge as an entrepreneur to provide software based solutions by applying the knowledge of technology, ethics, management principles and soft skills to carry out societal IT projects in assorted environments.

PSO7: Contribution for the Society Needs: Impart the knowledge of modern computer languages and technologies for the welfare of society by contributing team work skills and multidisciplinary techniques to the computer industries.

PSO8:Integrating Higher Education: Acquire a solid foundation on Information Technology by producing a pathway to pursue higher education.

PSO9: Life Long Learning:Recognize the need to engage in lifelong learning through continuing education and research in the broadest context of technological changes.

Semester III	DATABASE MANAGEMENT SYSTEMS	Hours/Week: 4	
Core Course - 3		Credits: 4	
Course Code 18UITC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the fundamentals of data models.
- conceptualize and depict a database system using ER diagram.
- make a study of SQL and relational database design.
- understand the internal storage structures using different file.
- understand the indexing techniques that helps in physical DB design.
- know the fundamental concepts of transaction processing, concurrency control techniques and recovery procedure.

Course Code 18UITC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	S	L	S	M
CO 2	S	-	-	M	S	S	S	S	M
CO 3	S	-	-	-	S	S	S	S	S
CO 4	S	-	-	M	S	S	S	S	S
CO 5	S	-	-	-	S	L	S	S	S
CO 6	S	-	L	M	S	M	S	S	S

Semester III	OPERATING SYSTEMS	Hours/Week: 4	
Core Course - 4		Credits: 3	
Course Code 18UITC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn about different types of system and OS structure.
- know about the processes and their scheduling algorithms
- understand the concept of deadlock and process synchronization
- gain knowledge on memory management
- stress the importance of mass storage structure
- implementing the concept of file system

Course Code 18UITC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	L	-	L	S	S	M
CO 2	S	-	-	M	-	M	S	S	S
CO 3	S	-	-	L	-	M	-	S	S
CO 4	S	-	-	M	-	S	S	S	S
CO 5	S	-	-	L	-	M	S	S	S
CO 6	S	-	-	M	-	L	S	S	S

Semester III	NUMERICAL METHODS	Hours/Week: 4	
Allied Course -3		Credits: 4	
Course Code 18UITA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- provide the students an understanding the basic principles of numerical methods.
- introduce various difference operators to enable the students to apply them in interpolation, numerical differentiation and Integration.
- apply the various numerical methods in solving algebraic equations.
- introduce various difference operators to enable the students to apply them in interpolation, numerical differentiation and integration.

Course Code 18UITA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO1	-	-	-	L	M	-	M	S	S
CO 2	-	L	-	M	-	-	M	S	S
CO 3	-	L	-	M	-	-	L	S	S
CO 4	-	L	M	M	M	M	-	S	S
CO 5	-	L	M	M	M	M	-	S	S

Semester III	SPREADSHEET	Hours/Week: 2	
NMEC 1		Credits: 2	
Course Code 18UITN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- use spreadsheet software to manage financial data
- work with formulas and functions
- develop professional-looking worksheets
- create charts and graphs
- preview and print worksheets
- format data and cells

Course Code 18UITN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	M	-	S	S
CO 2	S	-	-	-	L	M	-	M	M
CO 3	S	-	-	-	L	L	-	M	M
CO 4	S	-	-	-	L	L	-	S	S

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester: III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	PHP and MYSQL	Hours/Week: 4	
Core Course - 5		Credits: 4	
Course Code 18UITC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the need of PHP and MySQL
- be confident in Server Side scripting.
- become familiar with PHP syntax and variables, Types in PHP, Control Structure and Functions in PHP.
- know about PHP String handling, Arrays and Number handling.
- learn about Databases and Structured Query Language.
- learn to use both PHP and MySQL to Manage Databases.

Course Code 18UITC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	L	S	S	M	M
CO 2	S	S	-	-	S	S	S	S	M
CO 3	S	M	-	S	S	M	M	M	M
CO 4	S	S	-	S	S	M	S	S	S
CO 5	S	S	-	M	S	M	M	S	S
CO 6	S	S	-	M	S	S	S	S	S

Semester IV	RESOURCE MANAGEMENT TECHNIQUES	Hours/Week: 4	
Allied Course - 4		Credits: 4	
Course Code 18UITA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have the concepts of formulation of problem, feasible and optimal solutions for problems.
- give an overview of Assignment problems.
- give an idea of queueing theory and queueing models.
- make the students understand PERT / CPM techniques.

Course Code 18UITA41	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO1	-	-	M	S	-	L	L	S	S
CO 2	-	S	M	M	L	L	M	S	S
CO 3	-	S	M	M	L	M	M	S	S
CO 4	-	M	M	M	M	M	M	S	S
CO 5	-	L	-	L	L	L	L	S	S

Semester IV	NUMERICAL APTITUDE	Hours/Week: 2	
SEC - 3		Credits: 2	
Course Code 18UITS41		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

- train the students for various competitive exams.
- provide idea to solve the complex problems
- be confident on proportions.
- gain knowledge on Time and Work

Course Code 18UITS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	S	S	M	L
CO 2	-	-	-	L	-	S	-	-	L
CO 3	-	-	-	-	-	S	L	-	L
CO 4	-	-	-	L	-	S	M	M	L

Semester IV	INTRODUCTION TO HTML	Hours/Week: 2	
NMEC - 2		Credits: 2	
Course Code 18UITN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand how to create table using table tags
- understand how to design web pages using formatting, list, link and forms tags
- insert a graphic within the web page.
- create a link within the web page.

Course Code 18UITN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	M	L	-	M	M
CO 2	L	-	-	-	M	L	-	M	M
CO 3	S	-	-	-	M	L	-	S	S
CO 4	S	-	-	-	L	M	-	S	S

Semester V	JAVA PROGRAMMING	Hours/Week: 5	
Core Course – 6		Credits: 5	
Course Code 18UITC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Gain strong foundation on Java Programming syntax
- Understand the concept of classes and inheritance
- Know the importance of packages and interface
- Apprehend the knowledge of Multithreading
- Develop java programs to implement error handling techniques using exceptions
- Comprehend the applet and graphics programming concepts

Course Code 18UITC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	M	S	S	S	S
CO 2	S	-	-	-	M	S	S	S	S
CO 3	S	-	-	-	S	S	S	S	S
CO 4	S	-	-	L	S	S	S	S	S
CO 5	S	-	-	M	S	S	S	S	S
CO 6	S	-	-	M	S	S	S	S	S

Semester V	COMPUTER NETWORKS	Hours/Week: 5	
Core Course - 7		Credits: 5	
Course Code 18UITC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the fundamental concepts of applications on networks
- understand the protocols in Data Link Layer
- apply the routing algorithms in Network Layer
- establish connect and disconnect the transport layer
- familiar with wireless transmissions
- apprehend the concepts of world wide web, domain name system

Course Code 18UITC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	M	-	S	M
CO 2	S	-	-	-	-	M	-	M	S
CO 3	S	-	-	-	-	M	-	M	M
CO 4	S	-	-	M	-	M	-	S	S
CO 5	S	M	-	M	M	S	M	S	M
CO 6	S	M	-	-	M	S	M	S	M

Semester V	COMPUTER ALGORITHMS	Hours/Week: 5	
Core Course –		Credits: 5	
Course Code 18UITC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyse the fundamental concepts of algorithms
- understand the concept of writing efficient algorithms
- gain the knowledge of efficient sorting and searching techniques
- apprehend the basic concepts of Dynamic Programming analyse the trees with greedy approach and knapsack problem
- analyse the time complexity to solve the problem
- comprehend the knowledge of Backtracking techniques.

Course Code 18UITC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	M	-	M	M
CO 2	S	-	-	-	-	M	-	S	S
CO 3	S	-	-	-	-	M	-	L	M
CO 4	S	-	M	-	L	M	-	S	S
CO 5	S	-	S	-	-	S	-	S	S
CO 6	S	M	S	-	-	S	-	S	S

Semester V	CLOUD COMPUTING	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UTE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Know the technologies of network based systems.
- Understand the cloud deployment models.
- Gain the concept of Virtualization and Virtual Clusters.
- Apprehend the knowledge of cloud resource management and platform deployment.
- Analyze the Challenges faced by the cloud data in security.

Course Code 18UTE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	-	M	M	S	S
CO 2	S	-	-	-	-	M	M	S	S
CO 3	S	M	-	-	M	M	M	S	S
CO 4	S	M	M	-	M	M	S	S	S
CO 5	S	M	M	-	M	M	S	S	S

Semester V	INFORMATION SECURITY	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UTE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basics of Information Security
- know the legal, ethical and professional issues in Information Security
- apprehend the aspects of risk management
- analyze various standards in security
- apply the technological aspects of Information Security

Course Code 18UTE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	M	-	L	S
CO 2	S	-	-	-	L	M	-	L	S
CO 3	S	-	-	L	L	L	M	M	M
CO 4	S	M	-	M	-	M	L	M	S
CO 5	S	M	-	M	L	M	M	S	M

Semester V	INFORMATION RETRIEVAL	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UTE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Know the basics of Information Retrieval concepts.
- Understand several topics of Information retrieval such as – Boolean retrieval model, Vector space model, Latent semantic indexing.
- Apply the index compression techniques
- Analyze comprehensive details about various Evaluation methods.
- Implement insight about the topics covered in the course.

Course Code 18UTE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	M	-	S	S
CO 2	S	-	-	-	-	M	-	S	M
CO 3	M	M	L	-	S	S	-	S	S
CO 4	M	M	-	L	S	L	S	S	S
CO 5	L	M	M	M	M	M	S	S	S

Semester VI	MOBILE COMPUTING	Hours/Week: 5	
Core Course –		Credits: 5	
Course Code 18UITC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- Understand WML variables, elements and events.
- Study the WML script operators, functions and datatypes.
- Learn WML Scripting for Lang, Float and String library.
- Develop applications using Android simulator.
- Design a graphical user interface.
- Plan, prepare and build an original Android from concept to working program.

Course Code 18UITC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	S	S	-	S	S
CO 2	S	-	-	-	M	S	-	S	S
CO 3	S	-	-	-	S	S	-	M	S
CO 4	M	M	-	M	M	S	L	S	M
CO 5	M	M	L	M	S	S	M	S	S
CO 6	S	L	M	M	S	M	M	S	S

Semester VI	DATA MINING	Hours/Week: 5	
Core Course – 10		Credits: 5	
Course Code 18UITC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand Data mining principles and techniques and cutting edge business intelligence
- apprehend the concepts of Data warehousing Architecture and Implementation
- comprehend the concepts of classification, clustering and association rules.
- gain the knowledge of Web mining, Text mining and ethical aspects of data mining
- discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems, make predictions of outcomes

Course Code 18UITE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	S	-	M	M
CO 2	M	L	-	-	L	M	-	S	S
CO 3	S	-	-	-	-	S	-	M	M
CO 4	M	M	L	L	M	M	-	S	S
CO 5	M	M	L	M	M	M	L	S	S

Semester VI	SOFTWARE ENGINEERING	Hours/Week: 5	
Core Course – 11		Credits: 5	
Course Code 18UITC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the different types of software design.
- analyze the skills to evaluate software and make improvements.
- analyze the required specification process
- understand the concepts of different life cycle models.
- gain knowledge of Verification and validation techniques
- implement the testing strategies.

Course Code 18UITC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	L	M	M	-	S	S
CO 2	M	-	-	S	S	S	M	S	S
CO 3	M	-	-	L	L	S	M	S	S
CO 4	S	L	-	L	M	M	-	M	M
CO 5	M	L	-	M	M	M	S	S	S

Semester VI	EMBEDDED SYSTEMS	Hours/Week: 4	
DSEC – 2		Credits: 4	
Course Code 18UITE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain the knowledge of embedded hardware units and devices in a system
- conceptualize and depict a formalization of system design.
- understand the programming concepts and embedded programming in C, C++.
- apprehend the elements of macros and functions.
- know the fundamental concepts of Semaphores – Shared Data

Course Code 18UITE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	L	-	L	-	S	S
CO 2	S	-	-	L	-	L	-	S	S
CO 3	S	-	-	-	L	M	-	S	S
CO 4	S	-	-	-	L	S	-	S	S
CO 5	S	-	M	-	-	S	-	S	S

Semester VI	WIRELESS ADHOC NETWORKS	Hours/Week: 4	
DSEC – 2		Credits: 4	
Course Code 18UITE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- list and explain the various issues and applications of Ad hoc wireless networks.
- classify and Explain the working of MAC protocols for Ad-hoc wireless networks
- discuss the issues in designing routing protocols and working of Table-driven Routing protocols.
- compare and contrast the working of various On-Demand Routing protocols.
- analyze the challenges in designing Transport layer Protocols for Ad-hoc networks, Compare and contrast the working of Transport protocols.

Course Code 18UITE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	-	M	-	M	S
CO 2	S	-	-	-	-	M	-	M	S
CO 3	S	-	-	S	-	L	L	S	S
CO 4	S	S	-	S	L	S	M	S	M
CO 5	S	S	-	M	M	M	S	S	M

Semester VI	CYBER SECURITY	Hours/Week: 4	
DSEC – 2		Credits: 4	
Course Code 18UITE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the concepts of Information Security
- analyze the security threats
- apply the information system development life cycle.
- evaluate the purpose of security policies
- gain the knowledge of information security standards

Course Code 18UITC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	M	-	M	S
CO 2	M	M	-	-	-	M	-	M	S
CO 3	L	S	-	-	-	L	L	S	S
CO 4	M	S	M	-	-	M	M	S	S
CO 5	S	L	M	M	-	M	M	S	S

B.C.A

PROGRAMME SPECIFIC OUTCOMES

- Prepare the students to manage the hardware and software components in a computer independently.
- Provide the opportunity to be a programmer, to take up higher studies in Computer Science/Information Technology / Computer Applications and teacher training streams.
- Apply theoretical foundations of computer applications with emphasis on strong practical training that enable them to develop real world applications.
- Provide solid technical and professional foundation to go through competitive examinations.

Semester III	DATA STRUCTURES	Hours/Week: 4	
Core Course 5		Credits: 4	
Course Code 18UCAC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- implemt the Stack and Queue ADT using both array basedand linked-list based data structures.
- understand the storage representation of data types.
- acquire the knowledge of time complexity to perform primitive operations using different data structures.
- implement binary tree ADT.
- learn the impact of data structures.
- design and apply appropriate data structures for solving computing problems.

Course Code 18UCAC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	L	-	-
CO 2	L	-	-	-	-	-	-	-	-
CO 3	S	L	-	-	-	-	M	-	L
CO 4	M	-	-	-	-	-	M	-	-
CO 5		-	-	-	-	-	-	-	-
CO 6	S	-	M	-	L	-	-	L	-

Semester III	OPERATING SYSTEMS	Hours/Week: 4	
Core Course6		Credits: 3	
Course Code 18UCAC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have an overview of different types of operating systems.
- Grasp the importance of the components of an operating system.
- understand concepts of the file system.
- learn the knowledge of process management.
- have a knowledge of storage management.
- know the concepts of I/O and file systems.

Course Code 18UCAC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	-	-	M	-	M
CO 2	M	M	M	-	-	-	-	-	-
CO 3	M	-	M	M	-	M	-	M	-
CO 4	-	-	M	-	S	M	-	S	-
CO 5	M	M	-	-	L	M	-	S	-
CO 6	S	M	-	M	-	L	-	-	-

Semester III	DATA STRUCTURES USING C++ LAB	Hours/Week: 4	
Core Course⁷		Credits: 2	
Course Code 18UCAC31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- select efficient data structures to write optimal algorithms for solving real world problems.
- write programs for manipulating dynamic arrays for solving real life problems.
- implement Stack and Queue ADT using both array based and linked-list based data structures.
- develop programs for set manipulation using linked list based data structures.
- construct programs using tree structure for hierarchical data manipulation using linked list concept.
- create programs using graph data structure for solving network based real life applications such as social or city or telephone or circuit network.

Course Code 18UCAC31P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	L	-	-	-	-	-
CO 2	-	L	-	M	-	-	-	-	-
CO 3	-	L	-	-	-	-	L	-	-
CO 4	-	-	-	M	-	-	-	-	-
CO 5	-	-	-	L	-	-	-	-	-
CO 6	-	L	-	-	-	-	-	-	-

Semester III	NUMERICAL APTITUDE	Hours/Week: 4	
Allied Course3		Credits: 4	
Course Code 18UCAA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- improve the problem solving by the basic principles of numeric aptitude.
- acquire the efficiency of problem solving quickly.
- get qualified for proficiency tests.
- choose correct relevant method for problem solving

Course Code 18UCAA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	–	M	–	–	L	S	S	–	M
CO 2	–	M	–	–	L	S	S	–	M
CO 3	–	M	–	–	–	S	S	–	M
CO 4	–	M	–	–	–	S	S	–	M
CO5	–	M	L	–	L	S	S	–	M

Semester III	FUNDAMENTALS OF COMPUTERS	Hours/Week: 2	
NMEC 1		Credits: 2	
Course Code 18UCAN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- Understand the basics of computer.
- learn various input and output devices.
- get knowledge on Binary Arithmetic.
- become familiar with Programming Languages.

Course Code 18UCAN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	L	-	M	-	-	-
CO 2	L	-	-	L	-	M	-	-	-
CO 3	L	-	-	L	-	M	-	-	-
CO 4	L	-	-	L	-	M	-	-	-
CO 5	L	-	-	L	-	M	-	-	-

Semester: III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

Semester: III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester:III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester: III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester: III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester: III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	JAVA PROGRAMMING	Hours/Week: 4	
Core Course 8		Credits: 4	
Course Code 18UCAC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop the programming skills in Java.
- master the fundamentals of OOPs.
- learn the variable, expression and operators.
- gain the knowledge of classes and methods.
- understand arrays, string, interfaces and packages.
- understand multithreaded Programming, handling error exception and Applets.

Course Code 18UCAC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	-	-	-	M	-	S
CO 2	S	-	-	-	-	S	-	L	-
CO 3	-	M	S	-	-	L	-	-	-
CO 4	-	S	-	L	-	M	-	-	-
CO 5	M	-	-	-	S	-	-	-	L
CO 6	-	M	-	-	S	-	S	-	-
CO 7	-	-	-	L	-	-	-	M	S

Semester IV	JAVA PROGRAMMING LAB	Hours/Week: 4	
Core Course9		Credits: 2	
Course Code 18UCAC41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the perspectives of Java to solve the problems.
- gain knowledge of various operations using classes and objects.
- absorb various types of inheritance.
- learn the programs with interfaces and packages.
- Understand the usage of applets and graphics programming.

Course Code 18UCAC41P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	-	-	-	M	-	-
CO 2	-	S	M	-	-	-	-	M	-
CO 3	-	-	-	S	-	-	-	M	-
CO 4	-	-	S	-	-	-	-	-	-
CO 5	-	M	-	-	S	-	-	-	-
CO 6	-	-	S	-	L	-	-	-	-

Semester IV	FINANCIAL MANAGEMENT	Hours/Week: 4	
Allied Course 4		Credits: 4	
Course Code 18UCAA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with the types of accounts and accounting rules.
- prepare final accounts of sole trading concerns.
- prepare Fund Flow Statement.
- generate various accounting vouchers and accounting reports in Tally

Course Code 18UCAA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	M	L	S	-	-
CO 2	-	-	-	-	M	L	S	-	-
CO 3	-	-	-	-	M	L	S	-	-
CO 4	-	-	-	-	M	L	S	-	-
CO 5	L	L	L	L	M	L	S	-	L
CO 6	L	L	L	L	M	L	S	-	L

Semester IV	COMPUTER ORGANIZATION	Hours/Week: 2	
SEC 4		Credits: 2	
Course Code 18UCAS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire the knowledge of the basics of computer organization.
- Understand register organization, Instruction formats and addressing modes.
- learn various arithmetic algorithms.
- get knowledge on input-output organization and various types of memory.

Course Code 18UCAS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	-		-	-	
CO 2	M	M	L	-	-	M	-	-	
CO 3	S	M	M	L	-	M	-	-	
CO 4	S	M	M	L	-	M	-	-	
CO 5	S	M	M	L	-	L	-	-	-

Semester IV	FLASH LAB	Hours/Week: 2	
SEC5		Credits: 2	
Course Code 18UCAS42P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- implement the various effects of text in flash.
- animate various objects and give effects to it in flash.
- create animation using scripts in flash.

Course Code 18UCAS42P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	L	L	-	-	-	-	-	-
CO 2	-	L	-	L	-	-	M	-	-
CO 3	-	M	M	M	-	-	M	-	-
CO 4	-	M	-	-	-	-	-	-	-
CO 5	-	M	S	M	-	-	M	-	-

Semester IV	WEB DESIGN WITH HTML	Hours/Week: 2	
NMEC2		Credits: 2	
Course Code 18UCAN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of HTML.
- get knowledge about HTML tags.
- create HTML programs on their own.
- learn the designing of web page.

Course Code 18UCAN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	-	-	-	-	-
CO 2	-	S	M	-	-	-	-	-	-
CO 3	-	-	-	M	-	-	-	-	M
CO 4	-	-	-	M	S	-	L	-	-
CO 5	-	-	-	-	S	-	L	-	M
CO 6	-	-	-	-	M	-	L	-	M

Semester V	VB .NET PROGRAMMING	Hours/Week: 5	
Core Course 10		Credits: 5	
Course Code 18UCAC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the framework of .NET
- master the features of .NET.
- learn the variable, expression and operators of vb.net.
- gain the knowledge of classes and methods.
- understand arrays, string, interfaces and packages.
- understand delegates, events and handling error exception.
- develop real world applications using VB.NET.

Semester V	COMPUTER NETWORKS	Hours/Week: 5	
Core Course 11		Credits: 5	
Course Code 18UCAC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- study the concepts of network hardware, software, media & different layers.
- make the students to get familiarized with different data link layer protocols.
- learn about different routing, congestion control methods.
- grasp knowledge about IPV4 and IPV6.
- learn the details services & protocols at transport layer and application layer.

Course Code 18UCAC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	M	-	L	-	-	-
CO 2	L	-	-	L	-	L	-	-	-
CO 3	S	-	M	L	-	-	-	-	-
CO 4	M	L	-	-	-	-	-	-	-
CO 5	M	-	-	-	L	-	-	L	-

Semester V	DATABASE MANAGEMENT SYSTEMS	Hours/Week: 5	
Core Course 12		Credits: 5	
Course Code 18UCAC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the purpose and fundamental concepts of database.
- gain the knowledge of implementing database system.
- design data models for database applications using the Entity- Relationship (ER) and Relational data models.
- learn the design of relational database using normalization.
- write queries using SQL.
- know transaction management and concurrency control
- understand database recovery techniques.

Course Code 18UCAC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	M	M	M	-	-	-	-
CO 2	-	S	M	M	-	-	-	-	M
CO 3	-	S	M	M	-	-	-	-	M
CO 4	-	S	M	M	-	-	-	-	M
CO 5	-	S	M	M	-	-	-	-	M
CO 6	-	M	-	-	-	-	-	-	-
CO7	-	S	M	M	-	-	-	-	M

Semester V	VB.NET PROGRAMMING LAB	Hours/Week: 5	
Core Course 13		Credits: 2	
Course Code 18UCAC51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get aware about .Net platform.
- know the looping structure, control flow statements and exception handling in VB.NET
- understand object oriented programming concepts in VB.NET
- create the programs with interfaces and packages.
- build the programs using delegates and interfaces.
- develop software using VB.NET programming language

Semester V	SOFTWARE ENGINEERING	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCAE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- decompose the given project in various phases of a life cycle
- choose appropriate life cycle model depending on the user requirements.
- perform various life cycle activities like analysis, design, implementation, testing and maintenance.
- know various processes used in all phases of the product.
- apply the knowledge, techniques and skills in the development of the software product.
- develop code and test cases for a specific problem

Course Code 18UCAE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	S	M	-	-	M
CO 2	-	L	-	-	M	-	-	-	S
CO 3	-	-	-	-	S	-	M	-	M
CO 4	-	-	-	-	M	-	-	L	M
CO 5	-	-	-	L	M	-	-	-	S
CO 6	-	-	-	-	M	M	-	-	S

Semester V	SYSTEM SOFTWARE	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCAE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have an overview of machine architecture.
- introduce the concept of loading a program in a system.
- understand about the macro processors.
- instruct the learner about how the source program is converted to machine level language program.

Course Code 18UCAE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	-	-	-	-	M
CO 2	S	M	-	-	-	-	-	L	L
CO 3	S	L	-	-	-	-	-	-	-
CO 4	S	L	M	L	-	-	M	-	L
CO 5	S	L	-	-	-	-	-	-	-

Semester V	MICROPROCESSOR USING 8085	Hours/Week: 4	
DSEC 1		Credits: 4	
Course Code 18UCAE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the architecture of 8085.
- study the instruction sets for data transfer operations, arithmetic operations, logic operations, branch operations and its data format.
- learn instructions for implementing stack, subroutine and interrupts.
- learn the interfacing concept with memory and input/output devices.
- write assembly language program for counters, time delay, code conversions, multiplication and subtraction with delay

Course Code 18UCAE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	-	-	-	-	-	L
CO 2	-	M	-	-	-	-	-	-	M
CO 3	S	M	-	-	-	-	-	L	M
CO 4	S	M	-	-	-	-	-	L	M
CO 5	S	-	-	-	-	-	-	L	M

Semester V	DATABASE LAB	Hours/Week: 4	
DSEC 2		Credits: 2	
Course Code 18UCAE51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop PL/SQL program using control structures.
- design PL/SQL using cursors.
- create PL/SQL program using triggers.
- implement procedures and functions.
- code PL/SQL program using exception handling.
- design forms and reports.

Course Code 18UCAE51P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	M	M	M	-	-	-	-
CO 2	-	S	M	M	-	-	-	-	M
CO 3	-	S	M	M	-	-	-	-	M
CO 4	-	S	-	-	-	-	-	-	-
CO 5	-	S	M	M	-	-	-	-	M
CO 6	-	M	-	-	-	-	-	-	-

Semester V	MICROPROCESSORS LAB	Hours/Week: 4	
DSEC 2		Credits: 2	
Course Code 18UCAE52P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyse, specify, design, write and test assembly language programs.
- prepare programs to transfer and exchange of data in memory locations
- understand programs with simple arithmetic, logical and shift operations
- gain knowledge of programs with arrays.
- prepare programs on code conversions.
- Develop testing and experimental procedures on Microprocessor and analyze their operation under different cases.

Course Code 18UCAE52P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	M	-	-	-	-	-
CO 2	-	M	-	-	-	M	L	-	-
CO 3	M	-	-	M	-	-	-	-	L
CO 4	-	M	-	-	M	-	-	-	M
CO 5	-	M	-	-	M	M	S	-	-

Semester VI	WEB PROGRAMMING	Hours/Week: 5	
Core Course 14		Credits: 5	
Course Code 18UCAC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop websites using HTML, CSS and Javascript
- acquire knowledge in PHP basics
- develop PHP page using functions
- attain knowledge in various File Handling Techniques
- acquire ability to design PHP using database
- design simple JSP pages

Course Code 18UCAC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	M	-	-	M	-	-
CO 2	S	S	L	-	L	-	M	-	-
CO 3	S	S	-	-	L	-	M	-	-
CO 4	S	M	-	L	-	-	M	-	-
CO 5	M	S	-		L	-	M	-	-
CO 6	S	M	-	L	L	-	M	-	-

Semester VI	COMPUTER GRAPHICS	Hours/Week: 5	
Core Course 15		Credits: 5	
Course Code 18UCAC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge on the basics of computer graphics, different graphics systems and applications of computer graphics.
- learn the algorithms for drawing a point, line, circle, ellipse and curve and to fill these objects.
- know geometric transformations on graphics objects and their applications.
- extract scene with different clipping methods and its transformation to graphics display device.
- understand Three-Dimensional Concepts.

Course Code 18UCAC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	M	-	-	-	M	-	L
CO 2	-	L	M	-	-	-	L	-	
CO 3	-	M	L	M	-	-	L	-	L
CO 4	-	M	L	L	-	-	L	-	M
CO 5	-	-	M	M	-	-	M	-	M

Semester VI	DATA MINING	Hours/Week: 5	
Core Course 16		Credits: 5	
Course Code 18UCAC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand Data Warehousing, Data Mining applications and challenges
- understand Data Cube Implementation and OLAP
- apply preprocessing methods on raw data
- discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems, make predictions of outcomes
- apply the concepts of Data Mining techniques for clustering, association, and classification
- select and apply proper Data Mining algorithms to build analytical applications

Course Code 18UCAC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	-	-	-	-	M
CO 2	S	-	L	-	-	-	-	-	L
CO 3	M	M	-	-	-	-	-	-	M
CO 4	S		L	-	-	-	-	-	M
CO 5	M	M	-	-	-	-	-	-	S
CO 6	S	-	L	-	-	-	-	-	M

Semester VI	WEB PROGRAMMING LAB	Hours/Week: 4	
Core Course 17		Credits: 2	
Course Code 18UCAC61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- use knowledge of HTML, CSS code and Javascript to create personal or business websites with current professional standards.
- use critical thinking skills to design and create websites.
- develop and test PHP programs and understand PHP built-in functions.
- learn to create database and use PHP with MySQL.
- acquire ability to design and execute simple JSP pages.

Course Code 18UCAC61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	M	-	-	M	-	-
CO 2	S	S	L	-	L	-	M	-	-
CO 3	S	S	-	-	L	-	M	-	-
CO 4	S	M	-	L	-	-	M	-	-
CO 5	M	S	-	-	L	-	M	-	-

Semester VI	MOBILE APPLICATION DEVELOPMENT	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCAE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the Basic of Mobile Application Development in Android.
- expose the students to Android Programming Environment.
- give a practice in programming in Android.
- give knowledge of GUI Application development in Android Platform.
- familiarize the students with SQLite Database

Course Code 18UCAE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	M	-	-	-	-	-	-
CO 2	-	M	-	-	-	-	-	-	F
CO 3	M	-	S	-	-	-	-	-	-
CO 4	-	M	-	-	-	-	-	-	-
CO 5	-	F	-	-	-	-	-	-	-

Semester VI	INTERNET OF THINGS	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCAE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the Physical and logical design of IoT systems.
- know the IoT System Management with netconf protocol.
- understand Logical Design using Python programming.
- comprehend the working model for Raspberry Pi IoT devices.
- apprehend the Hadoop tool for big data analytics.

Course Code 18UCAE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	M	-	S	-	S	S	-
CO 2	L	M	M	-	S	-	S	S	-
CO 3	M	L	-	L	-	M	M	-	-
CO 4	-	L	-	L	-	L	L	L	-
CO 5	-	M	-	M	-	M	M	M	-

Semester VI	CLOUD COMPUTING	Hours/Week: 5	
DSEC 3		Credits: 4	
Course Code 18UCAE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamentals of cloud computing.
- know the fundamental techniques in cloud computing.
- understand the cloud services and various devices used for storage.
- gain knowledge on security in cloud environment.
- implement online analytical processing (OLAP).

Course Code 18UCAE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	S	S	-	L	L	L	-	M
CO 2	-	L	L	L	-	-	M	-	M
CO 3	-	M	M	M	-	-	M	-	M
CO 4	M	M	M	M	-	-	M	-	M
CO 5	L	L	L	M	-	-	M	-	M

Semester VI	3D STUDIO LAB	Hours/Week: 4	
DSEC 4		Credits: 2	
Course Code 18UCAE61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- impact technical skills/knowledge in the area of 3D designing.
- model objects using a variety of techniques
- design and apply materials
- adjust basic lighting
- animate simple objects
- build and animate simple, effective environments

Course Code 18UCAE61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	M	-	M	-	-	-
CO 2	M	-	-	-	M	S	-	-	-
CO 3	M	-	S		-	-	-	L	M
CO 4	M	-	M	-	-	-	L	-	-
CO 5	-	M	M	L	-	-	M	-	S

Semester VI	SPSS LAB	Hours/Week: 2	
SEC 6		Credits: 2	
Course Code 18UCAE62P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be comfortable using SPSS as a data analysis tool
- understand how to work with SPSS
- understand how to learn to use new features of SPSS on their own
- understand how to acquire information (samples)
- understand how to enter and reorganize information within SPSS
- understand how to effectively summarize research finds using SPSS through the use of appropriate indexes and tables

Course Code 18UCAE62P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	L	-	M	-	-	-
CO 2	S	-	-	-	M	S	-	-	-
CO 3	-	-	S	-	-	L	-	L	-
CO 4	M	-	M	-	-	-	L	-	-
CO 5	-	M	-	L	-	L	M	-	-

Semester VI	MOBILE LAB	Hours/Week: 2	
SEC 6		Credits: 2	
Course Code 18UCAS61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply essential Android Programming concepts.
- getting to know your Android development environment.
- working with Android simulator.
- develop various Android applications related to layouts & rich uses interactive interfaces.
- develop Android applications related to mobile related server-less database like SQLITE.

Course Code 18UCAS61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	-	-	-	-	-	-	
CO 2	-	-	S	-	-	-	-	-	M
CO 3	-	-	M	M	-	-	-	-	
CO 4	-	-	S	-	M	-	-	-	M
CO 5	M	-	-	M	-	-	-	-	M

B.Com.

PROGRAMME SPECIFIC OUTCOMES

The students will be

PSO1 - gain knowledge in all fields of Commerce.

PSO2 - apply the principles of Accounting, Banking, Finance, Insurance, Marketing, Management, Taxation, Auditing and Law to suit the needs of the employer/institution/ enterprise/society.

PSO3 - adapt to the digitalized environment in all fields.

PSO4 - understand the concepts in Entrepreneurship, Management and Administration.

PSO5 - update with the ever-changing trends in their profession/business/employment.

PSO6 - improve their hard and soft skills required to become employable.

PSO7 - apply the technological advancement in promoting trade and business.

PSO8 - provide legal and financial consultancy services to individuals, firms, institutions and companies.

PSO9 - predict the future developments in Commerce by applying various models, tools and techniques as per the requirement.

Semester III	COST ACCOUNTING	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the objectives and advantages of cost accounting.
- prepare cost sheet.
- understand the various methods in pricing of materials.
- calculate the wages payable to the workers.
- prepare primary and secondary distribution summary of overhead.
- apply an appropriate method of costing according to the nature of industry.

Course Code 18UCOC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	L	S	S	-	L	L
CO 2	S	M	-	L	S	S	-	L	S
CO 3	S	M	-	L	S	S	-	L	L
CO 4	S	M	-	L	S	S	-	L	L
CO 5	S	M	-	L	S	S	-	L	L
CO 6	S	M	-	L	S	S	-	L	L

Semester III	BUSINESS STATISTICS	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the basic concepts of statistics.
- understand and distinguish the methods of sampling.
- apply the skill in classifying and tabulation of data.
- apply statistical tools such as correlation, regression and time series for analysing the data.
- construct index numbers.
- find out association between two attributes.

Course Code 18UCOC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	-	S	-	-	L
CO 2	S	S	-	M	-	-	-	-	L
CO 3	S	S	-	L	-	S	-	-	L
CO 4	S	S	-	L	-	L	-	-	S
CO 5	S	S	-	L	-	L	-	-	S
CO 6	S	S	-	L	-	L	-	-	S

Semester III	BUSINESS COMMUNICATION	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UCOC33		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- be aware of the principles of effective communication.
- understand the various forms of communication .
- grasp the different types of business letter.
- develop the skill of writing business letters.
- be familiar with the sales and credit letters.
- comprehend the knowledge about correspondence with government authorities.

Course Code 18UCOC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	M	S	L	M	L
CO 2	S	S	M	M	M	S	L	M	L
CO 3	S	S	M	M	M	S	L	M	L
CO 4	S	S	M	M	M	S	L	M	L
CO 5	S	S	M	M	M	S	L	L	L
CO 6	S	S	M	M	M	S	L	L	L

Semester III	PRINCIPLES OF MANAGEMENT	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCOA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the nature and scope of management.
- know the basic principles of management and scientific management.
- be familiar with the functions of management .
- gain knowledge about organisation, types of organisation, organisation chart and organisation manuals.
- describe the functions of staffing and theories of motivation.
- know the concept of co-ordination and controlling.

Course Code 18UCOA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	L	S	S	M	S	M	S
CO 2	M	S	M	S	S	M	S	M	S
CO 3	L	S	S	S	S	S	S	M	S
CO 4	L	M	S	S	M	M	S	L	S
CO 5	M	M	M	S	S	S	S	L	M
CO 6	M	S	L	S	M	M	S	S	S

Semester III	INFORMATION TECHNOLOGY	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCOA32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the characteristics and classification of computers.
- be familiar with the devices in computers.
- understand the programming languages and operating system.
- get the knowledge of computer networks.
- be aware of computer virus and its categories.
- gain knowledge about internet and protocols.

Course Code 18UCOA32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	-	-	-	-	L	-	L
CO 2	L	-	L	-	L	L	L	-	L
CO 3	L	-	-	-	L	M	L	-	L
CO 4	M	-	L	-	L	M	M	-	L
CO 5	L	-	L	-	L	M	L	-	L
CO 6	M	L	L	-	L	M	M	-	L

Semester III	SOFT SKILLS DEVELOPMENT	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 18UCOS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- differentiate soft skills and hard skills.
- recognise the art of Listening, Speaking, Reading and Writing.
- understand the importance of time management and cope up with stress.
- be familiar with the preparation of curriculum vitae, group discussion and interview.

Course Code 18UCOS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	M	S	-	-	L
CO 2	S	S	L	S	M	S	L	-	-
CO 3	S	S	-	M	M	S	L	-	L
CO 4	S	S	L	S	L	S	-	-	-

Semester III	PRACTICAL BANKING	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with the procedure for opening an account and types of deposits.
- understand the negotiable instruments.
- gain the knowledge about e-banking.
- develop the skills regarding the usage of electronic payment system.

Course Code 18UCON31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	L	M	M	S	L	M
CO 2	M	S	M	L	M	M	S	L	M
CO 3	M	S	S	L	S	S	S	L	M
CO 4	M	S	S	L	S	S	S	L	M

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government.
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span.
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities.
- become aware of the fundamentals of disaster assessment and environmental impact assessment.
- become sensitized to the various institutional agencies for disaster management.
- be aware of disaster recovery plan.
- understand the association at National, State and District level of cope up with disaster.

Semester IV	PARTNERSHIP ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- calculate the value of goodwill when a partner is admitted.
- understand the accounting treatment in case of retirement and death of a partner.
- be aware of order of payment when the firm is dissolved.
- apply the Garner Vs. Murray case at the time of dissolution of partnership.
- be familiar with the accounting procedure in case of amalgamation of firm.
- prepare the statement of affairs at the time of insolvency of firm.

Course Code 18UCOC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	L	L	M	M	S	M
CO 2	M	S	M	L	L	M	M	S	M
CO 3	M	S	M	L	L	M	M	S	M
CO 4	M	S	M	L	L	M	M	S	M
CO 5	M	S	M	L	L	M	M	S	M
CO 6	M	S	M	L	L	M	M	S	M

Semester IV	BUSINESS MATHEMATICS	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend arithmetic progression and geometric progression.
- develop the skills in permutations and combinations.
- know about the elements of set theory and helps in solving problems using venn diagram.
- be familiar with the types of matrices and properties of determinants .
- gain knowledge about compound interest and banker's gain.
- understand the differential and integral calculus.

Course Code 18UCOC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	L	M	S	-	M	M
CO 2	S	M	L	L	M	S	-	M	L
CO 3	S	S	L	M	-	S	-	S	L
CO 4	S	M	L	S	L	S	L	M	M
CO 5	S	S	S	S	M	S	-	M	S
CO 6	S	S	L	M	M	S	L	M	S

Semester IV	BANKING THEORY, LAW AND PRACTICE	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC43		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge on banking concepts.
- develop the skills in crossing and endorsing a cheque.
- be familiar with the statutory protection to a paying banker.
- know the duties of collecting banker.
- understand the principles of sound lending and modes of creating charge.
- update with the modern trends in banking.

Course Code 18UCOC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	S	S	M	S	L
CO 2	S	S	L	M	S	S	-	M	L
CO 3	S	S	L	M	M	S	-	S	L
CO 4	S	S	M	L	M	S	-	L	-
CO 5	S	S	L	M	M	S	-	S	L
CO 6	S	S	S	M	S	S	S	M	L

Semester IV	AUDITING	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCOA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get the basic knowledge of auditing.
- know about the qualities, rights, duties and liabilities of an auditor.
- understand the concepts such as audit programme, internal check, *etc.*
- be familiar with the procedure in vouching of transactions and verification of assets and liabilities.
- gain the knowledge of principles for verification and valuation of assets and liabilities.

Course Code 18UCOA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	M	-	M	-	M	M
CO 2	S	L	-	M	L	M	-	M	S
CO 3	S	M	-	M	-	M	-	M	S
CO 4	S	M	-	L	-	M	-	L	L
CO 5	S	M	-	L	-	M	-	M	L
CO 6	S	M	-	L	-	M	-	M	L

Semester IV	ENTREPRENEURSHIP DEVELOPMENT	Hours/Week: 4	
Allied Course		Credits: 3	
Course Code 18UCOA42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be enable to

- know the concept of entrepreneur and entrepreneurship .
- understand the procedure to start the new venture.
- be familiar with forms of organizations.
- know the various institutions assisting entrepreneurship.
- gain knowledge about institutions offering finance to entrepreneurs.
- become job creators instead of job seekers.

Course Code 18UCOA42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	S	S	S	L	L	L
CO 2	S	S	L	S	S	S	M	L	L
CO 3	S	M	L	S	M	S	-	M	L
CO 4	S	S	L	S	M	S	-	M	L
CO 5	S	S	L	S	M	S	-	M	L
CO 6	S	S	L	S	S	S	-	L	L

Semester IV	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	Hours/Week:2	
SEC-1		Credits: 2	
Course Code 18UCOS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- appear for various competitive examinations.
- acquire right skills to tackle aptitude problems.
- improve mental calculations.
- improve the speed of solving problems.
- solve problems with ease and confidence.

Semester IV	BASIC ACCOUNTING PRINCIPLES	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be aware of the basic principles of accounting.
- understand the concept of accounting standard.
- be familiar with the process of balancing of accounts.
- prepare trial balance and of final accounts of sole trading concern.

Course Code 18UCON41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	L	L	S	L	L	-
CO 2	S	S	-	L	L	S	L	L	-
CO 3	S	S	-	L	L	S	L	L	-
CO 4	S	S	-	L	L	S	L	L	-

Semester V	CORPORATE ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge on issue of shares, forfeiture of shares, right shares and bonus shares.
- understand the accounting procedure for redemption of preference shares and redemption of debentures.
- develop the skills in preparing final accounts of joint stock companies as per Schedule VI and in calculating value of goodwill and shares.
- apply the accounting procedure for amalgamation, absorption, external reconstruction and internal reconstruction.
- prepare liquidator's final statement of account.
- excel in listing the order of payment at the time of winding up.

Course Code 18UCOC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	M	S	S	S
CO 2	S	S	M	S	M	M	S	S	S
CO 3	S	S	M	S	S	M	M	S	S
CO 4	S	S	M	S	S	S	S	S	S
CO 5	S	S	M	S	S	M	M	S	S
CO 6	S	S	M	S	S	M	S	S	S

Semester V	INCOME TAX LAW & PRACTICE – I	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with various terms used in Income Tax Act.
- gain knowledge about exemptions available under Section 10.
- develop the skill in determining the residential status of an assessee.
- know the computation of depreciation allowance while determining business income.
- develop the skill in the computation of taxable income from salary, house property, business or profession, capital gains.
- compute the income from other sources.

Course Code 18UCOC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	L	-	-	M	-
CO 2	S	S	L	M	M	L	-	S	L
CO 3	S	S	L	L	L	L	-	M	-
CO 4	S	S	L	L	L	-	-	L	-
CO 5	S	S	L	M	M	M	-	S	-
CO 6	S	S	L	L	M	L	-	S	-

Semester V	BUSINESS LEGISLATIONS – I	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCOC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of Business Laws.
- gain knowledge on the provisions of Law of contract .
- be aware on remedies for breach of contract .
- understand the relationship between principal and agent.
- apply the provisions of Sale of Goods Act.
- know the concept of Carriage of Goods.

Course Code 18UCOC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	L	S	M	S	S	L
CO 2	M	S	S	L	S	M	S	S	L
CO 3	M	S	S	S	S	S	S	S	L
CO 4	M	S	S	L	S	M	S	S	L
CO 5	M	S	S	S	S	S	S	S	L
CO 6	M	S	S	S	S	S	S	S	L

Semester V	BUSINESS ENVIRONMENT	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the types of business environment.
- understand the responsibility of the business towards various sections of the society.
- acquaint with the New Industrial Policy and Privatisation.
- gain knowledge about Globalisation and Multinational Companies.
- enrich their knowledge regarding Industrial sickness.
- familiar with the measures taken by government to promote MSMEs.

Course Code 18UCOE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	S	M	L	L	L	L
CO 2	S	M	M	S	M	L	M	L	L
CO 3	S	S	M	S	S	L	M	M	L
CO 4	S	S	M	S	S	L	L	L	L
CO 5	S	M	M	S	M	L	L	L	L
CO 6	S	M	M	S	M	L	L	L	L

Semester V	INTERNATIONAL MARKETING	Hours/Week: 5	
Discipline Specific		Credits:3	
Elective Course		Internal	External
Course Code 18UCOE52		25	75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the reasons for motives of international marketing.
- understand the functions and organisational structure of WTO.
- be aware of components of balance of payments.
- gain knowledge on the documents used in export and import.
- know about the institutions assisting export and import.
- identify the factors influencing pricing strategies for international marketing.

Course Code 18UCOE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	S	S	M	S	M	S
CO 2	M	S	M	S	M	S	S	S	S
CO 3	S	S	M	S	S	M	S	S	S
CO 4	S	S	S	S	S	S	M	M	S
CO 5	S	S	M	M	S	M	M	S	M
CO 6	S	S	S	M	M	M	S	M	M

Semester V	METHODOLOGY OF RESEARCH IN SOCIAL SCIENCES	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18 UCOE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- formulate research problems relating to social issues.
- estimate the sample size and select the sampling method.
- collect data from various sources by applying different methods .
- do the processes of editing, coding, tabulating and classifying data.
- apply the techniques for testing hypothesis.
- prepare the research report .

Course Code 18UCOE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	S	S	S	S	M	S
CO 2	S	L	S	L	M	S	M	L	L
CO 3	S	L	S	L	S	S	M	S	L
CO 4	S	M	S	M	M	S	S	S	S
CO 5	S	M	S	M	L	S	L	M	S
CO 6	S	M	S	L	S	S	M	S	S

Semester V	FINANCIAL MARKETS & SERVICES	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE54		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge on Indian financial system.
- understand the services of merchant banking.
- know the various methods of financial services viz., factoring, forfaiting and leasing.
- understand the concepts of securitization and venture capital.
- identify the reasons for slow growth of mutual funds in India.
- understand the functions of stock exchange and features of OTCEI, NSE and BSE.

Course Code 18UCOE54	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	S	S	S	M	S
CO 2	S	M	L	L	S	L	S	S	M
CO 3	S	S	M	S	S	S	S	S	M
CO 4	S	M	M	M	S	S	S	M	M
CO 5	S	M	M	L	S	M	S	S	S
CO 6	S	M	S	S	S	M	S	M	S

Semester V	PORTFOLIO MANAGEMENT	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE55		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the functions of portfolio management.
- understand the principles of portfolio management.
- be familiar with various types of diversification.
- gain knowledge on risk and return analysis in portfolio management.
- apply the concept of theories in portfolio management.
- evaluate the portfolio performance.

Course Code 18UCOE55	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	M	S	S	S
CO 2	S	S	S	S	S	M	S	S	S
CO 3	S	S	S	S	S	S	S	S	S
CO 4	S	S	M	S	S	S	S	S	S
CO 5	S	S	M	M	M	M	M	S	S
CO 6	S	S	M	M	M	M	M	S	S

Semester V	WEB DESIGNING	Hours/Week: 5	
Core Course		Credits: 3	
Course Code 18UCOE56		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the basics of HTML and structure of HTML Document.
- gain knowledge on the body section and various types of lists in HTML .
- design the web page with table.
- understand the basics of Style Sheets.
- design web page templates using frames.
- design of web page using form controls .

Course Code 18UCOE56	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	L	S	L	M	M	M	-	-
CO 2	-	L	L	L	-	M	M	-	L
CO 3	M	L	M	L	M	M	L	-	M
CO 4	M	M	L	L	L	M	M	-	L
CO 5	M	-	M	L	M	M	M	-	-
CO 6	-	L	L	-	L	M	M	-	-

Semester VI	MANAGEMENT ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of management accounting.
- calculate ratios and interpret the results.
- prepare fund flow and cash flow statements.
- enhance the decision making skills in estimating working capital .
- apply various management accounting tools and techniques for the purpose of decision making.
- prepare various types of budgets in business.

Course Code 18UCOC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	S	S	-	-	S	S
CO 2	S	M	-	M	S	L	M	S	S
CO 3	M	M	-	S	-	-	M	M	S
CO 4	L	S	-	L	L	-	S	M	S
CO 5	M	S	L	S	S	L	M	S	S
CO 6	S	S	M	S	S	S	S	M	S

Semester VI	INCOME TAX LAW & PRACTICE – II	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the procedure for clubbing of income.
- know the provisions relating to carry forward and setoff of losses.
- compute the total income of various persons.
- understand the tax assessment and payment procedure.
- gain knowledge about deduction of tax at source, collection of tax at source and advance payment of tax.
- know the procedure for appeals and revisions.

Course Code 18UCOC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	L	L	L	L	L
CO 2	S	S	L	L	L	L	L	L	L
CO 3	S	S	L	M	M	M	M	S	M
CO 4	S	S	L	S	S	S	S	S	S
CO 5	S	S	L	M	M	L	L	L	M
CO 6	S	S	L	L	L	L	-	L	M

Semester VI	BUSINESS LEGISLATIONS – II	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCOC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply basic terms of business Law in solving issues in the field of business.
- understand the Law relating to essential commodity.
- understand the relationship between manufacturer and consumer in business by applying Consumer Protection Act.
- apply the provisions of Negotiable Instrument Act .
- understand and apply the provisions of Information Technology Act.
- know the concept of right to information and apply .

Course Code 18UCOC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	S	S	S	S	S	L
CO 2	M	M	L	L	S	L	M	S	L
CO 3	M	S	S	S	S	M	S	S	L
CO 4	M	S	S	L	S	S	S	S	S
CO 5	M	S	S	L	S	M	S	S	L
CO 6	M	L	S	M	S	M	M	S	L

Semester VI	HUMAN RESOURCE MANAGEMENT	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the concept of human resource management.
- acquire knowledge on job analysis and design.
- be familiar with recruitment and selection process .
- enrich the knowledge regarding training for career development.
- understand the various techniques of performance appraisal.
- develop the skills for the growth of human resource management.

Course Code 18UCOE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	M	M	M
CO 2	S	S	M	S	S	S	M	M	M
CO 3	S	S	M	S	S	S	M	S	S
CO 4	S	S	M	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S	S	S
CO 6	S	S	M	S	S	S	S	M	S

Semester VI	INDUSTRIAL RELATIONS	Hours/Week: 5	
Discipline Specific		Credits: 3	
Elective Course			
Course Code 18UCOE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- identify the participants in industrial relations.
- understand the scope of industrial relations.
- be familiar with the knowledge of trade union.
- analyse the causes and consequences of industrial disputes.
- know about workers participation in management.
- gain knowledge about the success of collective bargaining.

Course Code 18UCOE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	S	M	M	L	M	L
CO 2	S	M	M	S	S	L	L	M	L
CO 3	S	S	M	S	M	M	M	S	L
CO 4	S	M	M	S	M	M	L	M	M
CO 5	S	M	L	S	M	L	M	M	L
CO 6	S	M	L	S	M	M	M	L	L

Semester VI	INDUSTRIAL ORGANISATION AND MANAGEMENT	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the forms of organization.
- categorise the size of business firms.
- impart skill for designing the layout for business organization.
- gain knowledge on production planning process and control.
- be familiar with material management.
- be aware of setting up of an industrial organisation and management .

Course Code 18UCOE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	M	S	S	S
CO 2	S	S	M	S	S	M	S	S	S
CO 3	S	S	S	S	S	M	S	S	S
CO 4	S	S	S	S	S	M	S	L	S
CO 5	S	S	S	S	S	L	S	L	M
CO 6	S	S	M	M	S	M	M	M	M

Semester VI	RETAIL MARKETING	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCOE64		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the concepts of retail marketing.
- understand the stages in product development and buying process .
- inculcate the knowledge about retail pricing and retail location.
- be familiar with retail promotion and promotional advertising .
- understand the need for supply chain management.
- know about e-retailing.

Course Code 18UCOE64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	S
CO 2	S	S	S	S	S	S	S	M	S
CO 3	S	M	S	L	S	L	S	L	S
CO 4	S	S	S	S	S	S	S	L	S
CO 5	S	S	S	M	M	S	S	M	S
CO 6	S	S	S	L	S	S	S	L	S

Semester VI	MARKETING RESEARCH	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18 UCOE65		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of marketing research.
- conduct a real time survey .
- identify the needs and preference of consumers.
- analyse the psychological and socio–cultural behaviour of consumers.
- categorise the consumers on the basis of market segmentation.
- collect feedback about the products and take corrective action through online .

Course Code 18UCOE65	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	M	L	L	M	S
CO 2	M	S	L	M	L	S	S	M	M
CO 3	S	L	M	L	L	L	S	M	S
CO 4	S	S	M	L	S	M	M	L	L
CO 5	M	L	L	L	S	L	M	L	L
CO 6	L	L	S	M	S	L	L	M	S

Semester VI	PRACTICAL ADVERTISING	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 18 UCOS61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop the skill of framing slogans for audio advertising.
- draft any kind of advertisement copy with necessary components .
- distinguish among various values of advertisement copy and apply the appropriate value in the draft.
- apply the skill of preparation of advertisement budget.

Course Code 18UCOS61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	S	S	M	-	L
CO 2	S	S	S	L	S	S	M	-	-
CO 3	S	S	S	L	S	S	-	-	-
CO 4	S	S	S	L	S	S	-	-	-
CO 5	S	S	S	L	S	S	-	-	L
CO 6	S	S	S	M	S	S	M	-	-

B.Com (CA)

PROGRAMME SPECIFIC OUTCOMES

The Students will be able to

- PSO1 - apply the principles of Accounting, Banking, Finance, Marketing, Management, Taxation and Law to suit the needs of the employer/institution/enterprise/society.
- PSO2 - understand the concepts in Entrepreneurship, Management and Administration.
- PSO3 - improve their hard and soft skills required to become employable.
- PSO4 - provide legal and financial consultancy services to individuals, firms, institutions and companies.
- PSO5 - predict the future developments in Commerce by applying various models, tools and techniques as per the requirement.
- PSO6 - use Java, Visual Programming, C, DBMS and PC Software for business and other general purposes.
- PSO7- apply the knowledge of Commerce and Computing fundamentals to various real life applications.
- PSO8 - design , develop and implement application software to meet the demands of industry requirements.
- PSO9 - apply their skills in using appropriate techniques and tools necessary for computing practice.

Semester III	COST ACCOUNTING	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the objectives and advantages of cost accounting
- prepare cost sheet
- understand the various methods in pricing of materials
- calculate the wages payable to the workers
- prepare primary and secondary distribution summary of overhead
- apply an appropriate method of costing according to the nature of industry

Course Code 18UCOC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	L	S	S	-	L	L
CO 2	S	M	-	L	S	S	-	L	S
CO 3	S	M	-	L	S	S	-	L	L
CO 4	S	M	-	L	S	S	-	L	L
CO 5	S	M	-	L	S	S	-	L	L
CO 6	S	M	-	L	S	S	-	L	L

Semester III	BUSINESS STATISTICS	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the basic concepts of statistics
- understand and distinguish the methods of sampling
- apply the skill in classifying and tabulation of data
- apply statistical tools such as correlation, regression and time series for analysing the data
- construct index numbers
- find out association between two attributes

Course Code 18UCOC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	-	S	-	-	L
CO 2	S	S	-	M	-	-	-	-	L
CO 3	S	S	-	L	-	S	-	-	L
CO 4	S	S	-	L	-	L	-	-	S
CO 5	S	S	-	L	-	L	-	-	S
CO 6	S	S	-	L	-	L	-	-	S

Semester III	BUSINESS COMMUNICATION	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UCOC33		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- be aware of the principles of effective communication
- understand the various forms of communication
- grasp the different types of business letter
- develop the skill of writing business letters
- be familiar with the sales and credit letters
- comprehend the knowledge about correspondence with government authorities

Course Code 18UCOC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	M	S	L	M	L
CO 2	S	S	M	M	M	S	L	M	L
CO 3	S	S	M	M	M	S	L	M	L
CO 4	S	S	M	M	M	S	L	M	L
CO 5	S	S	M	M	M	S	L	L	L
CO 6	S	S	M	M	M	S	L	L	L

Semester III	PROGRAMMING WITH JAVA	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCCA31		Internal 25	External 75

COURSE OUTCOMES

On Completion of the courses, the students will be able to

- be familiar with object oriented programming
- determine the manipulation of operators in Java
- enhance decision making by using looping concepts
- increase the knowledge about inheritance and packages
- understand about the concept of exception handling, multithreading in programs
- write applet programs

Course Code 18UCCA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	S	S	S	S
CO 2	-	-	-	-	-	S	S	S	S
CO 3	-	-	-	-	-	S	S	S	S
CO 4	-	-	-	-	-	S	M	S	M
CO 5	-	-	-	-	-	S	S	M	L
CO 6	-	-	-	-	-	S	S	S	M

Semester III	PROGRAMMING WITH JAVA - LAB	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCCA32P		Internal 40	External 60

COURSE OUTCOMES

On Completion of the courses, the students will be able to

- excel in Java programming for business calculations
- be familiar with application of Java
- develop the skill in writing programs for statistical measures
- increase the knowledge in different levels of inheritance
- enhance the skills in thread and packages
- be familiar with the applet concept

Semester III	SOFT SKILLS DEVELOPMENT	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course			
Course Code 18UCOS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- differentiate soft skills and hard skills
- recognise the art of Listening, Speaking, Reading and Writing
- understand the importance of time management and cope up with stress
- be familiar with the preparation of curriculum vitae, group discussion and interview

Course Code 18UCOS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	L	M	S	-	-	L
CO 2	S	S	L	S	M	S	L	-	-
CO 3	S	S	-	M	M	S	L	-	L
CO 4	S	S	L	S	L	S	-	-	-

Semester III	PRACTICAL BANKING	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with the procedure for opening an account and types of deposits
- understand the negotiable instruments
- gain the knowledge about e-banking
- develop the skills regarding the usage of electronic payment system

Course Code 18UCON31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	L	M	M	S	L	M
CO 2	M	S	M	L	M	M	S	L	M
CO 3	M	S	S	L	S	S	S	L	M
CO 4	M	S	S	L	S	S	S	L	M

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the International instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.
-

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code: 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	PARTNERSHIP ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- calculate the value of goodwill when a partner is admitted
- understand the accounting treatment in case of retirement and death of a partner
- be aware of order of payment when the firm is dissolved
- apply the Garner Vs. Murray case at the time of dissolution of partnership
- be familiar with the accounting procedure in case of amalgamation of firm
- prepare the statement of affairs at the time of insolvency of firm

Course Code 18UCOC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	L	L	M	M	S	M
CO 2	M	S	M	L	L	M	M	S	M
CO 3	M	S	M	L	L	M	M	S	M
CO 4	M	S	M	L	L	M	M	S	M
CO 5	M	S	M	L	L	M	M	S	M
CO 6	M	S	M	L	L	M	M	S	M

Semester IV	BUSINESS MATHEMATICS	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend arithmetic progression and geometric progression
- develop the skills permutations and combinations
- know about the elements of set theory and helps in solving problems using venn diagram
- be familiar with the types of matrices and properties of determinants
- gain knowledge about compound interest and banker's gain
- understand the differential and integral calculus

Course Code 18UCOC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	L	M	S	-	M	M
CO 2	S	M	L	L	M	S	-	M	L
CO 3	S	S	L	M	-	S	-	S	L
CO 4	S	M	L	S	L	S	L	M	M
CO 5	S	S	S	S	M	S	-	M	S
CO 6	S	S	L	M	M	S	L	M	S

Semester IV	BANKING THEORY, LAW AND PRACTICE	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCOC43		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge on banking concepts
- develop the skills in crossing and endorsing a cheque
- be familiar with the statutory protection to a paying banker
- know the duties of collecting banker
- understand the principles of sound lending and modes of creating charge
- update with the modern trends in banking

Course Code 18UCOC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	M	S	S	M	S	L
CO 2	S	S	L	M	S	S	-	M	L
CO 3	S	S	L	M	M	S	-	S	L
CO 4	S	S	M	L	M	S	-	L	-
CO 5	S	S	L	M	M	S	-	S	L
CO 6	S	S	S	M	S	S	S	M	L

Semester IV	DATABASE MANAGEMENT SYSTEM	Hours/Week: 4	
Allied Course		Credits: 3	
Course Code 18UCCA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- perceive the basic concepts of database management systems
- determine the concept of E-R model
- understand about the different types of joins
- enrich their knowledge about utilization of SQL commands
- improve the skill to develop PL/SQL program.
- be familiar with the structure of views and indexes

Course Code 18UCCA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	S	S	S	S
CO 2	-	-	-	-	-	S	S	S	L
CO 3	-	-	-	-	-	S	S	S	M
CO 4	-	-	-	-	-	S	S	S	S
CO 5	-	-	-	-	-	S	S	S	S
CO 6	-	-	-	-	-	S	M	M	L

Semester IV	DATABASE MANAGEMENT SYSTEM – LAB	Hours/Week: 5	
Allied		Credits: 3	
Course Code 18UCCA42P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand various queries and their execution
- excel in designing and modifying a database
- gain hands on training on programs using cursors and triggers
- be familiar with the looping structure
- rectify the errors using exception
- develop the knowledge about PL/SQL

Semester IV	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	Hours/Week:2	
SEC-1		Credits: 2	
Course Code 18UCOS41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- appear for various competitive examinations.
- acquire right skills to tackle aptitude problems.
- improve mental calculations.
- improve the speed of solving problems
- solve problems with ease and confidence.

Semester IV	BASIC ACCOUNTING PRINCIPLES	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be aware of the basic principles of accounting
- understand the concept of accounting standard
- be familiar with the process of balancing of accounts
- prepare trial balance and of final accounts of sole trading concern

Course Code 18UCON41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	L	L	S	L	L	-
CO 2	S	S	-	L	L	S	L	L	-
CO 3	S	S	-	L	L	S	L	L	-
CO 4	S	S	-	L	L	S	L	L	-

Semester V	CORPORATE ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge on issue of shares, forfeiture of shares, right shares and bonus shares
- understand the accounting procedure for redemption of preference shares and redemption of debentures
- develop the skills in preparing final accounts of joint stock companies as per Schedule VI and in calculating value of goodwill and shares
- apply the accounting procedure for amalgamation, absorption, external reconstruction and internal reconstruction
- prepare liquidator's final statement of account
- excel in listing the order of payment at the time of winding up.

Course Code 18UCOC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	M	S	S	S
CO 2	S	S	M	S	M	M	S	S	S
CO 3	S	S	M	S	S	M	M	S	S
CO 4	S	S	M	S	S	S	S	S	S
CO 5	S	S	M	S	S	M	M	S	S
CO 6	S	S	M	S	S	M	S	S	S

Semester V	INCOME TAX LAW & PRACTICE – I	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with various terms used in Income Tax Act
- gain knowledge about exemptions available under Section 10
- develop the skill in determining the residential status of an assessee
- know the computation of depreciation allowance while determining business income
- develop the skill in the computation of taxable income from salary, house property, business or profession, capital gains
- compute the income from other sources

Course Code 18UCOC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	L	-	-	M	-
CO 2	S	S	L	M	M	L	-	S	L
CO 3	S	S	L	L	L	L	-	M	-
CO 4	S	S	L	L	L	-	-	L	-
CO 5	S	S	L	M	M	M	-	S	-
CO 6	S	S	L	L	M	L	-	S	-

Semester V	BUSINESS LEGISLATIONS – I	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCOC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of Business Laws
- gain knowledge on the provisions of Law of contract
- be aware on remedies for breach of contract
- understand the relationship between principal and agent
- apply the provisions of Sale of Goods Act
- know the concept of Carriage of Goods

Course Code 18UCOC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	L	S	M	S	S	L
CO 2	M	S	S	L	S	M	S	S	L
CO 3	M	S	S	S	S	S	S	S	L
CO 4	M	S	S	L	S	M	S	S	L
CO 5	M	S	S	S	S	S	S	S	L
CO 6	M	S	S	S	S	S	S	S	L

Semester V	INTRODUCTION TO VISUAL PROGRAMMING	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the Integrated Development Environment in Visual Basic.
- apply various intrinsic controls and dialog boxes.
- work with the control structures.
- develop skills in Array, MDI and Menu.
- describe DAO, ADO and OLEDB concepts.
- get knowledge about working with forms and projects in Visual Basic.

Course Code 18UCCE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	S	S	S	S
CO 2	-	-	-	-	-	S	S	M	M
CO 3	-	-	-	-	-	S	M	M	M
CO 4	-	-	-	-	-	S	M	S	M
CO 5	-	-	-	-	-	S	S	S	M
CO 6	-	-	-	-	-	S	S	S	S

Semester V	PERSONAL HOME PAGE (PHP)	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- personalize the PHP work space, variables and data types.
- develop skills in using operators and control statements in PHP.
- work with Strings and Array in PHP.
- understand the concepts of functions and classes.
- understand the web page controls in PHP.
- design web page using the concepts of PHP.

Course Code 18UCCE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	L	S	S	S
CO 2	-	-	-	-	-	S	M	M	M
CO 3	-	-	-	-	-	S	M	M	M
CO 4	-	-	-	-	-	S	M	S	M
CO 5	-	-	-	-	-	S	S	S	S
CO 6	-	-	-	-	-	S	S	S	S

Semester V	PYTHON PROGRAMMING	Hours/Week: 5	
Discipline Specific		Credits:3	
Elective Course		Internal	External
Course Code 18UCCE53		25	75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge about operators and conditional statements in Python.
- understand the looping concept and Strings.
- use Python data structures–lists, tuples and dictionaries.
- define Python functions and call them.
- enhance the skills in files and Exception handling.
- read and write Python programs.

Course Code 18UCCE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	M	M	S	S
CO 2	-	-	-	-	-	M	S	M	S
CO 3	-	-	-	-	-	M	S	M	L
CO 4	-	-	-	-	-	M	S	S	M
CO 5	-	-	-	-	-	M	S	S	M
CO 6	-	-	-	-	-	M	S	S	S

Semester V	INTRODUCTION TO VISUAL PROGRAMMING - LAB	Hours/Week: 5	
Discipline Specific		Credits: 3	
Elective Course		Internal	External
Course Code 18UCCE54P		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

- work with the Microsoft Visual Basic 6.0.
- develop variety of screen saver.
- design interactive forms with various Control box.
- create DAO programs.
- develop programs using menu editor.
- provide hands on training for typing, editing, compiling, linking and executing Visual Basic programs.

Semester V	PERSONAL HOME PAGE (PHP) - LAB	Hours/Week: 5	
Discipline Specific		Credits: 3	
Elective Course		Internal	External
Course Code 18UCCE55P		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop the programs in PHP.
- familiar with the PHP work space, operators and variables.
- work with strings and arrays in PHP.
- enhance the skills in functions and classes.
- develop the skills in HTML forms, buttons and process user input.
- create a Web page using PHP.

Semester V	PYTHON PROGRAMMING- LAB	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE56P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- implement Python programs with conditionals and loops.
- use functions for structuring Python programs.
- represent compound data using Python lists, tuples and dictionaries.
- read and write data from/to files in Python.
- learn techniques for storing data in variables.
- write, test and debug simple Python programs.

Semester VI	MANAGEMENT ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts of management accounting
- calculate ratios and interpret the results
- prepare fund flow and cash flow statements
- enhance the decision making skills in estimating working capital
- apply various management accounting tools and techniques for the purpose of decision making
- prepare various types of budgets in business

Course Code 18UCOC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	S	S	-	-	S	S
CO 2	S	M	-	M	S	L	M	S	S
CO 3	M	M	-	S	-	-	M	M	S
CO 4	L	S	-	L	L	-	S	M	S
CO 5	M	S	L	S	S	L	M	S	S
CO 6	S	S	M	S	S	S	S	M	S

Semester VI	INCOME TAX LAW & PRACTICE – II	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCOC62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the procedure for clubbing of income
- know the provisions relating to carry forward and setoff of losses.
- compute the total income of various persons
- understand the tax assessment and payment procedure.
- gain knowledge about deduction of tax at source, collection of tax at source and advance payment of tax
- know the procedure for appeals and revisions

Course Code 18UCOC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	L	L	L	L	L	L
CO 2	S	S	L	L	L	L	L	L	L
CO 3	S	S	L	M	M	M	M	S	M
CO 4	S	S	L	S	S	S	S	S	S
CO 5	S	S	L	M	M	L	L	L	M
CO 6	S	S	L	L	L	L	-	L	M

Semester VI	BUSINESS LEGISLATIONS – II	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCOC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply basic terms of business Law in solving issues in the field of business
- understand the Law relating to essential commodity
- understand the relationship between manufacturer and consumer in business by applying Consumer Protection Act
- apply the provisions of Negotiable Instrument Act
- understand and apply the provisions of Information Technology Act
- know the concept of right to information and apply

Course Code 18UCOC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	S	S	S	S	S	L
CO 2	M	M	L	L	S	L	M	S	L
CO 3	M	S	S	S	S	M	S	S	L
CO 4	M	S	S	L	S	S	S	S	S
CO 5	M	S	S	L	S	M	S	S	L
CO 6	M	L	S	M	S	M	S	S	L

Semester VI	WEB TECHNOLOGY	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand web browsers and servers
- acquire knowledge in HTML tags
- excel in linking and image map in web pages
- improve skills in Tables, Frames and Layouts
- get knowledge to create forms in HTML
- gain skills to design and upload own Web pages

Course Code 18UCCE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	M	-	M	S	M	-	M
CO 2	M	-	M	-	L	M	M	-	L
CO 3	M	M	S	S	S	S	S	S	S
CO 4	M	L	M	-	M	S	S	S	L
CO 5	-	L	M	-	M	S	S	S	S
CO 6	M	L	S	-	S	S	S	S	S

Semester VI	TALLY WITH GST	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop the skills to create ledger in Tally.
- prepare vouchers and create groups using Tally.
- create payroll reports for an organization.
- understand the concepts relating to GST.
- familiarize with Statements and Report Generation in Tally.
- apply the Tally software in all types of business

Course Code 18UCCE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	M	M	S	S	S	S
CO 2	S	-	S	M	M	S	S	S	S
CO 3	S	-	S	M	M	S	S	S	S
CO 4	S	-	S	M	M	S	S	S	S
CO 5	S	-	S	M	M	S	S	S	S
CO 6	S	-	S	S	S	S	S	S	S

Semester VI	DATA COMMUNICATION AND NETWORKS	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand reference models and topology.
- know various controls in Data Link Layer.
- describe routing algorithms for delivering the packets.
- understand protocols and its uses.
- acquire knowledge about Network security.
- excel in computer networking

Course Code 18UCCE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	-	-	-	S	-	M
CO 2	-	-	-	-	-	-	L	L	-
CO 3	-	-	-	-	-	-	-	L	L
CO 4	-	-	-	-	-	-	M	-	-
CO 5	-	-	-	-	-	-	-	-	-
CO 6	-	-	-	-	-	-	-	-	-

Semester VI	WEB TECHNOLOGY LAB	Hours/Week: 5	
Discipline Specific Elective Course		Credits: 3	
Course Code 18UCCE65P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand basic HTML tags.
- create HTML programs using various lists.
- design HTML programs using images and frames
- develop HTML forms
- identify needs, interests, and functionality of a website.
- design and upload their own Web pages.

Course Code 18UCCE65P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	M	-	M	S	M	-	M
CO 2	M	-	M	-	L	M	M	-	L
CO 3	M	M	S	S	S	S	S	S	S
CO 4	L	L	M	-	M	S	S	S	L
CO 5	-	L	M	-	M	S	S	S	S
CO 6	M	L	S	-	S	S	S	S	S

Semester VI	ENTREPRENEURSHIP DEVELOPMENT PROGRAMME	Hours/Week: 2	
Skill Enhancement Course		Total Hours:30	
Course Code 18UCCS61		Credits: 3	
		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain the knowledge about entrepreneurship
- understand the procedure to establish start-up
- know the various institutions assisting entrepreneurs
- to meet the challenges prevailing in the market as a women entrepreneur.

Course Code 18UCCS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	M	L	-	M	-	-
CO 2	M	S	S	M	L	-	M	-	-
CO 3	M	S	S	M	L	-	M	-	-
CO 4	M	S	S	M	L	-	M	-	-

B.Com. (Professional Accounting)

PROGRAMME SPECIFIC OUTCOMES

The students of UG Commerce (Professional Accounting) will be able to

- Prove professional competencies like prudence, creativity and problem solving, accountability, critical thinking and effective communication.
- Apply the skills acquired in mathematics, computer and communication for promoting digitalized business environment.
- Apply the principles of accounting, auditing, marketing, banking, taxation, finance and business advisory services to suit the needs of the employer/institution/enterprise/society.
- Display their logical and analytical skills in providing optimal solutions to the problems of business units.
- Formulate tactics relating to internal and external environment to carry out the business.
- Grab the opportunities and face the challenges in the rapidly changing environment.
- Keep abreast of the latest developments in taxation, banking, finance and accounting principles and practices to ensure sustained vitality of the industry and other economic activities.
- Forecast the future events by applying various models, tools and techniques as per the requirement.
- Manage enterprises successfully by integrating strategy, management and accounting.

Semester III	ADVANCED FINANCIAL ACCOUNTING	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCPC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- compute the claimed amount for loss of stock and loss of profit
- do the methods of accounting for hire purchase transactions
- understand the instalment payment system and differentiate it from hire purchase transactions
- know the accounting treatment with regard to branches
- deal with the inter-departmental transfers and their accounting treatment
- prepare trading and profit and loss account and balance sheet

Course Code 18UCPC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	L	S
CO 2	S	S	S	S	L	S	S	L	S
CO 3	L	L	S	-	L	S	S	-	S
CO 4	S	S	S	-	M	S	S	-	S
CO 5	S	S	S	S	L	S	S	L	S
CO 6	S	S	S	L	L	L	S	L	S

Semester III	COST ACCOUNTING	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCPC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts of cost accounting
- know the methods and elements of costing
- get clear knowledge about Inventory control
- gain knowledge about labour cost control
- know about the classification of overheads
- develop skill in preparation of Job Costing, Batch Costing and Unit Costing

Course Code 18UCPC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	S	L	L	L	M	L	M
CO 2	L	-	S	L	-	L	S	L	M
CO 3	S	M	S	S	S	S	S	S	S
CO 4	M	M	S	M	S	M	S	S	S
CO 5	S	S	S	S	L	L	S	L	S
CO 6	S	S	S	S	S	M	S	S	S

Semester III	INCOME TAX -I	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UCPC33		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- explain the basic concepts in Income Tax
- know about the rates of tax
- understand the provisions of residential status of an assessee and scope of total income
- assess the income from salary and income from house property
- compute income from Business or Profession
- develop the skill in the computation of capital gains and income from other sources

Course Code 18UCPC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	M	M	-	-	M	L	L
CO 2	L	L	M	-	-	-	S	L	L
CO 3	S	-	S	M	M	L	S	L	M
CO 4	S	S	S	S	S	S	S	M	S
CO 5	S	S	S	S	S	S	S	L	S
CO 6	S	S	S	S	S	S	S	M	S

Semester III	BUSINESS LAWS - II AND INTERPRETATION OF STATUTES	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCPA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the legislations related to business
- know the provisions of General clauses Act
- be aware of the law related to indemnity, guarantee, bailment and pledge
- gain knowledge about Law of Agency
- apply the Negotiable instrument Act provisions in their life
- perceive the interpretation of statutes

Course Code 18UCPA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	-	S	S	L	-	S
CO 2	S	-	S	L	S	S	L	L	S
CO 3	S	L	S	M	S	S	M	L	S
CO 4	S	-	M	-	M	M	-	L	L
CO 5	S	L	S	L	M	S	M	-	M
CO 6	S	-	M	-	M	M	-	L	M

Semester III	ACCOUNTING STANDARDS	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCPA32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the standard setting process
- understand the need for convergence towards global standards
- get knowledge about the Accounting Standards 1 - 5
- get acquainted with the Accounting Standards 7 - 12
- understand the Accounting Standards 13 - 19
- gain knowledge of Accounting Standards 20 – 29

Course Code 18UCPA32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	M	-	M	-	M	-	M
CO 2	M	-	M	L	-	M	M	M	-
CO 3	L	M	S	S	M	S	S	S	S
CO 4	L	M	S	S	L	S	S	M	S
CO 5	L	M	S	S	L	M	S	M	S
CO 6	L	M	S	S	M	S	S	S	S

Semester III	ENGLISH GRAMMAR AND VOCABULARY	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 18UCPS31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge of English grammar
- enrich their English vocabulary and usage
- enhance the language competence
- develop accuracy in the usage of words
- write grammatically correct sentences
- equip themselves with communication skills to get through competitive examinations successfully

Course Code 18UCPS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	S	S	L	L	S
CO 2	S	S	L	-	S	S	L	-	S
CO 3	S	S	L	L	S	S	L	L	S
CO 4	S	S	M	-	S	S	L	-	S
CO 5	S	S	L	-	S	S	L	L	S
CO 6	S	S	M	-	S	S	L	-	S

Semester III	PRACTICAL BANKING	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with the procedure for opening an account and types of deposits
- understand the Negotiable instruments
- gain the knowledge about E-Banking
- develop the skills regarding the usage of Electronic Payment System

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code: 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on Human Rights and Human values.
- learn the definition and the development of Human Rights.
- understand the various theories on Human Rights.
- know the International instruments and conventions on human Rights.
- acquire idea of the evolution of Human Rights in India.
- imbibe the knowledge of Human Rights violation in India.

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Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of Feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various Government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the Constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of Judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand **the economic development and the various sectors of Indian Economy.**
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	PARTNERSHIP ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCPC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the features of partnership
- understand the accounting procedures at the time of admission and retirement.
- study various methods of distribution at the time of dissolution of partnership
- know the procedure for amalgamation of partnership firms
- comprehend the accounting treatment when a partnership firm is converted into a company
- know the issues related to accounting in limited liability partnership

Course Code 18UCPC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	M	-	M	L	M	L	M
CO 2	S	L	S	S	S	M	S	-	S
CO 3	S	L	S	S	S	M	S	M	S
CO 4	S	-	S	S	S	S	S	-	S
CO 5	S	M	S	S	S	S	S	M	S
CO 6	L	M	M	L	S	-	S	M	M

Semester IV	COST AND MANAGEMENT ACCOUNTING	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCPC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop skill in preparation of contract costing
- get clear knowledge about the preparation of process costing
- comprehend the features of joint products and by-products costing
- understand the applications of Marginal costing
- know the method of preparation of various budgets
- develop skill in reconciling cost and financial accounts

Course Code 18UCPC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	L	M	S	M	S
CO 2	M	S	S	S	M	M	S	L	S
CO 3	-	-	L	-	L	L	-	L	L
CO 4	S	M	S	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S	S	S
CO 6	M	S	S	M	L	L	M	L	S

Semester IV	INCOME TAX -II	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UCPC43		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the clubbing of income
- know about the set-off and carry forward of losses
- understand the deductions with respect to certain expenditures and incomes
- assess the tax liability of individuals
- understand the provisions of filing income tax return
- know about the provisions concerning advance tax, deduction of tax at source and tax collection at source

Course Code 18UCPC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	S	S	L	-	S	M	M
CO 2	L	M	S	S	L	-	S	M	M
CO 3	M	M	S	M	L	L	S	L	L
CO 4	S	S	S	S	M	M	S	S	M
CO 5	S	S	S	M	L	L	S	L	-
CO 6	M	M	S	M	M	L	S	L	-

Semester IV	COMPANY LAW	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UCPA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- secure a basic general knowledge in Company Law
- understand the provisions relating to Companies Act
- learn about the management and administration of company
- know about shares and issue of shares
- acquaint themselves with latest development in the field of company
- know about the accounts and audit of companies

Course Code 18UCPA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	L	S	S	M	L	S
CO 2	S	L	S	L	S	S	M	L	S
CO 3	S	-	S	L	S	S	S	L	S
CO 4	S	L	S	-	S	S	M	-	S
CO 5	S	-	S	-	S	S	S	-	S
CO 6	S	-	S	L	S	L	S	L	M

Semester IV	GOODS AND SERVICES TAX	Hours/Week: 4	
Allied Course		Credits: 3	
Course Code 18UCPA42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the direct and indirect taxes
- understand the concept of GST
- get clear knowledge about the time and value of supply
- get acquainted with the charge of GST and the exemptions from GST
- understand the input tax credit and tax invoice
- gain knowledge in payment of tax and furnishing of returns

Course Code 18UCPA42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	S	M	M	S	S	-	S
CO 2	S	-	S	M	S	S	S	-	S
CO 3	S	-	S	S	M	S	S	-	M
CO 4	S	M	S	S	S	S	S	-	M
CO 5	M	M	S	S	S	S	S	M	M
CO 6	M	S	S	S	S	S	S	-	M

Semester IV	MS – OFFICE LAB	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 18UCPS41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- format the text and create tables in Ms-Word
- apply the formulae in Ms-Excel
- use the various functions in Ms-Excel
- create powerpoint presentation by using Ms-Powerpoint
- create database and reports in Ms-Access

Semester IV	BASIC ACCOUNTING PRINCIPLES	Hours/Week: 2	
Non Major Elective Course		Credits: 2	
Course Code 18UCON41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be aware of the basic principles of Accounting
- understand the concept of Accounting Standard
- be familiar with the process of Balancing of accounts
- prepare Trial balance and of Final accounts of Sole trading concern

Course Code 18UCON41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	S	L	L	L	S	L	S
CO 2	M	L	S	S	L	S	S	M	S
CO 3	L	L	S	M	L	L	S	L	S
CO 4	L	L	S	M	L	L	S	L	S

Semester V	COMPANY ACCOUNTS - I	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCPC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the accounting procedure for redemption of preference shares
- know the accounting procedure for redemption of debentures
- understand the SEBI guidelines for underwritings
- know the provisions regarding bonus shares and to value the right issue
- develop the skill in preparing final accounts of Joint stock companies
- prepare cash flow statement as per AS 3

Course Code 18UCPC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	M	M	M	S	-	S
CO 2	S	M	S	S	S	L	S	L	S
CO 3	L	-	M	L	L	S	M	-	L
CO 4	S	L	S	M	-	-	S	M	M
CO 5	S	M	S	S	S	S	S	M	S
CO 6	S	S	S	S	M	M	S	M	S

Semester V	ADVANCED SPECIAL ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCPC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- assess the financial statements of insurance companies
- prepare the financial statements of banking companies
- design the financial statements of non-banking financial companies
- evaluate the financial position of electricity Companies
- build the consolidated financial statements and consolidated balance sheet
- prepare the consolidated cash flow statements

Course Code 18UCPC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	M	M	S	M	L	-	L
CO 2	S	-	M	M	S	M	S	-	L
CO 3	S	-	M	M	L	M	S	M	L
CO 4	S	L	L	M	M	S	S	S	S
CO 5	S	-	S	S	M	S	S	M	S
CO 6	S	-	S	S	S	S	S	M	S

Semester V	AUDITING & ASSURANCE-I	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCPC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get clear knowledge about the objectives and scope of audit
- know about audit strategy, audit planning and audit programme
- analyse the procedures related to audit documentation and audit evidence
- assess the risk and internal control
- describe the provisions of internal audit
- detect the fraud and error

Course Code 18UCPC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	L	M	L	L	-	M
CO 2	S	-	S	M	S	L	L	M	S
CO 3	S	L	S	S	S	M	L	S	S
CO 4	S	L	S	S	S	S	M	S	S
CO 5	S	-	S	L	M	M	L	L	M
CO 6	S	-	S	S	M	S	L	S	S

Semester V	FINANCIAL MANAGEMENT - I	Hours/Week: 5	
DSEC-1		Credits: 3	
Course Code 18UCPE51		Internal 25	External 75

COURSE OUTCOMES

On the completion of the course, the students will be able to

- gain knowledge about the basic concepts of financial management
- know about various long term, medium term and short term sources of finance
- calculate financial ratios and its types
- determine cost of capital
- understand the various capital structure theories
- estimate the working capital requirements

Course Code 18UCPE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	L	L	-	L	L	L	L
CO 2	L	-	M	L	-	-	M	L	L
CO 3	S	S	S	S	M	M	S	S	S
CO 4	S	S	S	S	M	M	S	S	S
CO 5	S	M	S	S	L	S	S	S	S
CO 6	S	S	S	S	M	M	S	S	M

Semester V	BANKING THEORY, LAW AND PRACTICE	Hours/Week: 5	
DSEC-1		Credits: 3	
Course Code 18UCPE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge on banking concepts
- develop the skills in crossing and endorsing a cheque
- be familiar with the statutory protection to a paying banker
- know the duties of collecting banker
- understand the principles of sound lending and modes of creating charge
- apply the modern trends in banking

Course Code 18UCPE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	L	M	L	L	L
CO 2	M	M	S	L	S	M	S	M	M
CO 3	L	-	S	M	L	-	S	-	S
CO 4	-	-	L	L	M	L	S	L	S
CO 5	-	L	S	L	S	S	S	-	M
CO 6	M	S	S	M	S	S	S	L	S

Semester V	FINANCIAL MARKETS	Hours/Week: 5	
DSEC-1		Credits: 3	
Course Code 18UCPE53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- calculate the financial rates of return while making investments
- classify the various types of financial instruments
- describe the general guidelines of new issue market
- assess the listing procedure in stock exchanges
- demonstrate the recent guidelines of SEBI
- differentiate the features of various instruments in money markets

Course Code 18UCPE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	S	S	S	S
CO 2	S	-	S	M	S	S	S	M	S
CO 3	L	-	M	L	S	S	S	L	M
CO 4	S	S	M	-	M	L	M	S	S
CO 5	L	-	M	L	L	S	S	L	M
CO 6	S	-	S	S	M	S	S	S	S

Semester V	ENTERPRISE INFORMATION SYSTEM	Hours/Week: 5	
DSEC -2		Credits: 3	
Course Code 18UCPE54		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyse the automated business process
- identify the various types of business risk and tackle them
- develop ERP business modules
- evaluate the various types of control in information systems
- develop an infrastructure for cloud computing concepts
- illustrate core banking solutions in a IT environment

Course Code 18UCPE54	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	M	M	S	S	S	S
CO 2	M	M	L	S	S	S	M	M	S
CO 3	M	S	M	S	S	S	S	S	S
CO 4	L	S	-	S	S	S	S	-	S
CO 5	-	S	S	S	S	S	S	L	S
CO 6	M	S	M	S	S	S	S	M	S

Semester V	RURAL BANKING	Hours/Week: 5	
DSEC-2		Credits: 3	
Course Code 18UCPE55		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get clear knowledge about the basic concept of rural banking
- describe the need for rural banking
- educate unemployed youth about the various antipoverty cum development programme
- identify the sources of finance in rural areas
- plan the credit in banking scheme
- understand the role of various institutions supporting for rural development

Course Code 18UCPE55	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	S	L	L	L	M	L	L
CO 2	L	-	S	L	M	L	M	L	L
CO 3	S	L	S	L	L	L	S	L	M
CO 4	M	L	S	M	M	S	S	L	M
CO 5	L	L	S	M	M	S	S	L	M
CO 6	L	-	S	L	L	M	S	L	M

Semester V	SERVICES MARKETING	Hours/Week: 5	
DSEC - 2		Credits: 3	
Course Code 18PCPE56		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the classification of services and the role of services in an economy.
- identify the obstacles in services marketing
- know about the elements of services marketing mix and to be familiar with service design and service life cycle.
- fix the price for services and understand the techniques of promotion of services.
- apply the services marketing mix.
- apply the services marketing concepts in small office, home office and event management

Course Code 18UCPE56	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	S	L	L	L	M	M	-
CO 2	L	-	S	M	M	M	M	S	M
CO 3	M	-	S	S	S	S	M	S	L
CO 4	M	M	S	S	S	M	L	M	M
CO 5	-	L	S	M	S	S	L	M	M
CO 6	L	-	S	S	M	M	M	S	M

Semester VI	COMPANY ACCOUNTS - II	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCPC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain accounting knowledge on employee stock option plan and buy back of securities
- know the accounting procedure with regard to equity shares with differential rights
- ascertain profit or loss prior to incorporation of a company
- assess the value the shares and goodwill of the company using different methods
- understand the accounting procedures relating to amalgamation and reconstruction
- develop skills in the accounting procedures at the time of liquidation

Course Code 18UCPC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	L	L	-	S	L	M
CO 2	S	M	S	S	M	-	S	-	M
CO 3	S	S	S	M	L	L	M	S	S
CO 4	S	S	S	L	S	M	S	M	S
CO 5	S	L	S	M	L	M	S	L	M
CO 6	S	-	S	S	M	L	S	-	M

Semester VI	ECONOMICS FOR FINANCE	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UCPC62		Internal 25	External 75

COURSE OUTCOMES

On the completion of the course, the students will be able to

- understand the various concepts of national income
- understand the government interventions for correcting market failure
- get knowledge about the determinants of money supply
- know the impacts of exchange rate fluctuations on domestic economy
- be familiar with theories of international trade
- get clear knowledge of foreign direct investment in India

Course Code 18UCPC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	S	M	M	S	S	M	L
CO 2	S	S	S	S	S	S	S	L	-
CO 3	M	L	M	M	M	S	S	S	L
CO 4	S	S	S	M	S	S	S	S	L
CO 5	M	-	S	S	M	S	S	M	-
CO 6	L	L	M	L	S	S	S	S	-

Semester VI	AUDITING & ASSURANCE- II	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 18UCPC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- describe the rules for appointment and removal of auditors in a company
- examine the applicability of cost audit
- analyse the contents in audit report
- understand the auditing procedures in banks
- compare the auditing in Government and Non-Government organisations
- audit the service industries

Course Code 18UCPC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	L	S	-	M	L	S
CO 2	S	L	S	S	S	-	S	-	S
CO 3	S	L	S	S	M	L	S	-	S
CO 4	S	L	S	L	L	L	M	L	S
CO 5	S	L	S	L	M	L	M	L	M
CO 6	S	M	S	S	S	M	S	L	S

Semester VI	FINANCIAL MANAGEMENT - II	Hours/Week: 5	
DSEC-3		Credits: 3	
Course Code 18UCPE61		Internal 25	External 75

COURSE OUTCOMES

On the completion of the course, the students will be able to

- apply the capital budgeting techniques
- analyse the risks in capital budgeting
- determine the practical considerations in dividend policy
- evaluate trade receivables and to implement the credit policy
- compute the cost of trade payables
- gain knowledge of cash management models

Course Code 18UCPE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	S	S	-	S	S	S
CO 2	S	S	S	S	S	M	S	S	S
CO 3	L	L	S	L	M	-	S	-	L
CO 4	M	M	M	M	S	L	S	M	S
CO 5	S	S	S	S	S	-	S	S	S
CO 6	M	M	M	S	M	M	S	L	S

Semester VI	BANKING TECHNOLOGY	Hours/Week: 5	
DSEC-3		Credits: 3	
Course Code 18UCPE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge about e-banking technologies
- make use of electronic payment system
- avail electronic funds transfer facility in real life situation
- get clear knowledge about electronic clearing system
- understand the impact of information technology on Banking Sector
- to know the threats in computerised system and cyber issues in online banking

Course Code 18UCPE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	S	S	-	M	M	S	-	S
CO 2	L	S	S	-	S	S	S	M	S
CO 3	L	S	S	-	S	S	S	M	S
CO 4	L	S	S	-	S	S	S	-	S
CO 5	M	L	S	M	S	M	S	L	M
CO 6	M	L	S	L	L	M	S	M	M

Semester VI	FINANCIAL SERVICES	Hours/Week: 5	
DSEC– 3		Credits: 3	
Course Code 18UCPE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the various financial services.
- compare the nature of new financial products and services.
- measure the qualities of merchant bankers.
- analyse the performance of mutual funds
- interpret the difference between factoring and discounting.
- understand the performance of credit rating agencies.

Course Code 18UCPE63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	M	L	L	L	S	L	L
CO 2	S	L	S	L	L	M	M	L	S
CO 3	M	-	L	M	-	M	L	L	M
CO 4	S	S	M	S	S	S	S	S	M
CO 5	S	L	M	M	L	M	M	M	L
CO 6	S	S	S	S	S	S	S	S	S

Semester VI	STRATEGIC MANAGEMENT	Hours/Week: 5	
DSEC-4		Credits: 3	
Course Code 18UCPE64		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- define the basic concepts of strategic management
- frame the vision, mission and objectives
- select the best strategy at corporate and business level
- analyse the functional level strategies
- understand the divisions of organisation structure
- implement and control the strategy

Course Code 18UCPE64	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	M	L	S	-	-	-	S
CO 2	S	S	S	L	S	L	L	L	S
CO 3	S	S	S	L	S	S	S	S	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	L	L	M	L	M	M	L	M	S
CO 6	S	S	S	S	S	S	S	M	S

Semester VI	INVESTMENT MANAGEMENT	Hours/Week: 5	
DSEC 4		Credits: 3	
Course Code 18UCPE65		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- differentiate gambling and speculation
- assess the risk and return concepts
- compute the value of bonds and equity shares
- analyse the macro economic indicators
- compare the significance of technical analysis theories
- realise the importance of Capital Asset Pricing Model

Course Code 18UCPE65	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	S	S	L	-	-	-	S
CO 2	S	M	S	S	S	S	S	S	S
CO 3	S	M	S	S	M	L	S	M	M
CO 4	S	L	M	M	L	L	M	S	S
CO 5	M	S	S	S	L	L	S	S	S
CO 6	M	-	S	S	S	S	S	S	S

Semester VI	OPERATIONS MANAGEMENT	Hours/Week: 5	
DSEC4		Credits: 3	
Course Code 18UCPE66		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the recent trends in operations management
- acquire knowledge on maintaining the resources in an economical way
- understand the concept of corporate vision-mission and objectives
- design the operational system and control
- get knowledge about job allocation and assignment technique
- draw a network diagram like PERT, CPM etc.,

Course Code 18UCPE66	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	-	-	M	L	S	L	L
CO 2	S	S	M	S	S	S	S	S	M
CO 3	-	S	L	M	M	L	L	M	S
CO 4	S	M	M	M	S	S	S	M	M
CO 5	S	S	S	L	S	M	S	S	M
CO 6	S	M	S	M	S	M	S	M	S

B.B.A

PROGRAMME SPECIFIC OUTCOMES

The students will be

1. eligible for higher studies in MBA and M.Com.
 2. able to get employment as Marketing Executives, Human Resource Consultants, Finance Officers.
 3. able to apply knowledge of management theories & practice to solve business problems
 4. able to develop entrepreneurial skills to provide innovative solutions for the needs of mankind.
 5. able to develop ethical practices in business management.
 6. able to communicate effectively and function efficiently on multidisciplinary teams.
- able to develop skills to be a life-long learner for a globalized business for future.

Semester III	MARKETING MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concepts and theories of marketing in real life situations.
- develop the strategy for marketing mix of a product.
- extend competency in designing market segmentation.
- build up the retailing and wholesaling skills.
- realize the role of media selection in advertising.
- develop the strategy for realizing the marketing objective of an organization.

Course Code 18UBAC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	M
CO 2	S	S	S	S	M	S	S
CO 3	S	S	S	S	M	S	S
CO 4	S	S	S	S	S	S	S
CO 5	S	S	S	S	M	S	S
CO 6	S	S	S	M	S	S	S

Semester III	OPERATIONS MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC32		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- practice the concepts of operations management in their business.
- identify the operational and administrative processes of an organization.
- prepare their own plant layout.
- select a good plant location.
- able to control the quality using various charts.
- apply the various work study , motion study and method study in their own organization.

Course Code 18UBAC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	S	-	M	S	-	S
CO 2	S	S	M	M	S	M	M
CO 3	S	M	M	-	M	-	S
CO 4	S	S	S	S	M	-	M
CO 5	M	S	S	S	S	S	L
CO 6	L	M	M	-	L	-	M

Semester III	ENTREPRENEURSHIP	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18UBAC33		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- identify the basic concept of entrepreneurship.
- recognize the functions of entrepreneurs.
- build awareness about entrepreneurship Development Programmes.
- discriminate the various assistance given by the government.
- impart knowledge about Institutional support.
- discriminate the opportunities and constraints for new business ideas.

Course Code 18UBAC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	M	M	S	S	S
CO 3	M	L	S	S	M	M	S
CO 4	S	S	S	S	M	S	S
CO 5	S	M	S	M	S	S	S
CO 6	M	M	S	S	S	L	S

Semester III	ORGANIZATIONAL BEHAVIOUR	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UBAC34		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concepts and theories of organizational behaviour in real life situations.
- identify the attitude of a person towards the organization.
- extend competency in designing the motivational tools for an organization.
- build up the personality.
- realize the role of group in an organization.
- develop the organizational culture for realizing the organization objective.

Course Code 18UBAC34	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	M	-	-	S
CO 2	S	S	L	S	M	-	S
CO 3	S	L	-	S	-	M	M
CO 4	S	-	-	M	S	S	L
CO 5	M	-	M	-	-	S	L
CO 6	M	M	-	L	L	-	M

Semester III	BUSINESS COMMUNICATION	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UBAA31		Internal 25	External 75

COURSE OUTCOMES

On completion of the course the students will be able to

- understand the concept, process and importance of communication.
- gain knowledge of media of communication.
- develop skills of effective communication – both written and oral.
- develop skill of effective listening
- acquaint with application of communication skills in the business world .

Course Code 18UBAA31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	L	S	L	S	M
CO 3	S	S	S	S	M	S	M
CO 4	M	S	S	S	L	S	S
CO 5	S	S	S	S	L	S	M

Semester III	BUSINESS MANAGEMENT	Hours/Week: 2	
Non Major Elective		Credits: 2	
Course Code 18UBAN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concepts of management in real life situations.
- acquire the skills for communicating effectively.
- extend competency in planning.
- build up leadership skills.
- realize the role of various levels of management in an organization.
- develop the strategy for realizing the control over an organization.

Course Code 18UBAN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	S
CO 2	S	S	M	S	L	S	S
CO 3	S	S	M	S	L	M	M
CO 4	S	S	M	S	M	S	S
CO 5	S	S	L	S	M	S	L
CO 6	S	S	S	S	M	S	L

Semester III	HUMAN RIGHTS (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEH31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts on human rights and human values.
- learn the definition and the development of human rights.
- understand the various theories on human rights.
- know the international instruments and conventions on human rights.
- acquire idea of the evolution of human rights in India.
- imbibe the knowledge of human rights violation in India.

Semester III	WOMEN STUDIES (2018 -19 onwards)	Hours/Week: 0	
Generic Elective - 1		Credits : 1	
Course Code 18UGEW32		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of feminism.
- acquire the knowledge on the atrocities committed against women.
- know more of women's organisations and political rights.
- know about the various government welfare schemes for women.
- gain knowledge on the legal rights of women.
- analyse the real empowerment of women in all fields.

Semester III & IV	CONSTITUTION OF INDIA (2018 -19 onwards)	Hours/Week: 1 + 1	
Generic Elective - 2		Credits : 1	
Course Code 18UGEC41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic tenets of the constitution.
- realize the duties and responsibilities as a citizen of India.
- shine in competitive examinations.
- understand that the constitution is a base for the functioning of the Government
- aware of the actual working of political institutions.
- know the powers of judiciary in the protection of citizen.

Semester III & IV	MODERN ECONOMICS (2018-2019 Onwards)	Hours/Week: 1 +1	
Generic Elective - 2		Credits: 1	
Course Code 18UGEM42		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the economic development and the various sectors of Indian Economy.
- get clear knowledge about economic issues.
- get introduced to the framework of Budgets and Income and Expenditure of the Government.
- understand the role of banks in economic development.
- apply the E-payment methods in day to day life.

Semester III & IV	ADOLESCENT PSYCHOLOGY (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective- 2		Credits: 1	
Course Code 18UGEA43		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge regarding the changes in different domains of development during adolescence.
- develop and maintain good relationship with parents and peers.
- aware of the issues challenging adolescents and measures to be taken to prevent those issues.
- face the challenges they face across the life span
- adopt a few counseling techniques.

Semester III & IV	DISASTER MANAGEMENT (2018 -19 onwards)	Hours/Week: 1+ 1	
Generic Elective-		Credits: 1	
Course Code 18UGED44		Internal 100	External -

COURSE OUTCOMES

On completion of this course, the students will be able to

- get a general insight in the dimensions of disasters caused by nature as well as the disasters and environmental hazards induced by human developmental activities
- become aware of the fundamentals of disaster assessment and environmental impact assessment
- become sensitized to the various institutional agencies for disaster management
- be aware of disaster recovery plan
- understand the association at National, State and District level of cope up with disaster

Semester IV	BUSINESS LAW	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- schedule the Legislations relating to Business.
- apply the Provisions of Law of Contract.
- practice the provisions of Partnership Act.
- assess the law relating to Sale of Goods.
- relate the Consumer Protection Act Provisions in their life.

Course Code 18UBAC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	L	S	L	S
CO 2	S	S	S	S	S	L	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	S	S	S	S	S
CO 5	S	L	L	L	S	M	S

Semester IV	FINANCIAL MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the dynamic role of financial management function in a company.
- list various sources of finance and find an appropriate source of finance for a company that suits its requirement.
- examine the opportunity cost of capital in financial decisions.
- calculate the cost associated with different types of capital.
- decide an investment project based on return estimates.
- analyse working capital requirements of a company.

Course Code 18UBAC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	M	S
CO 2	S	S	M	L	M	S	S
CO 3	S	S	M	M	M	L	S
CO 4	S	M	S	S	S	M	S
CO 5	S	S	L	L	S	M	S
CO 6	S	M	M	L	M	M	S

Semester IV	COMPUTER APPLICATIONS IN MANAGEMENT	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UBAA41		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- practice the use of computer in their business
- apply the MS Word in their business
- use Excel to calculate various formulas and create chart.
- create and present PowerPoint in the real time world.
- interpret the concepts of DBMS and RDBMS.
- update the recent trends in computer application

Course Code 18UBAA41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	M	M	L	S	L	S
CO 2	L	S	M	M	S	L	S
CO 3	L	M	M	M	S	L	S
CO 4	L	S	M	M	S	L	S
CO 5	L	M	M	M	S	L	S
CO 6	L	M	M	M	S	L	S

Semester IV	SERVICES MARKETING	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UBAA42		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- plan how to approach a target customer in marketing service.
- analyse the marketing mix of any given service.
- plan how to deliver quality service amongst competition.
- develop a plan to manage and match demand and supply of services.
- use appropriate technological tools in marketing of services.
- prepare for a career in service industry understanding its differentiating features.

Course Code 18UBAA42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	S	S	S	L	M	M
CO 2	S	S	M	S	L	L	M
CO 3	S	S	M	S	L	S	M
CO 4	M	S	S	S	M	M	S
CO 5	S	S	S	S	M	L	S
CO 6	S	S	M	S	L	M	L

Semester IV	MS OFFICE PRACTICAL	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 18UBAA43P		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- use MS Word, MS Excel and MS PowerPoint in an efficient manner.
- prepare their own resume.
- apply various formula using excel in their business
- display their presentation using different types of charts
- retrieve data quickly using filter option.
- create their presentation using PowerPoint.

Course Code 18UBAA43P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	M	-	L	S	-
CO 2	S	S	-	-	M	-	M
CO 3	-	-	S	-	S	--	M
CO 4	-	L	-	L	-	-	S
CO 5	S	-	-	M	L	-	-
CO 6	S	-	-	-	-	L	L

Semester IV	ENTREPRENEURSHIP	Hours/Week: 2	
NMEC-2		Credits:2	
Course Code 18UBAN41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- research and evaluate the personal attributes and skills that characterize the “successful” entrepreneur.
- identify the ideas of business startup, prepare & appraise the business plan.
- identify & assess sources of support for small businesses and entrepreneurs.
- analyze the growth of Women Entrepreneurship in India its contribution to Indian Economy.
- access the various factors affecting Entrepreneurial Growth.
- evaluate Entrepreneurship Development Programme offered by Government.

Course Code 18UBAN41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	M	M	S	M
CO 2	S	S	S	S	M	S	S
CO 3	S	M	S	S	M	S	S
CO 4	S	M	S	M	S	S	S
CO 5	M	M	L	S	M	M	M
CO 6	S	S	S	S	M	M	S

Semester IV	EVENT MANAGEMENT	Credit : 1
ECC – 1		
Course Code 18UBAO41		Internal: 100

COURSE OUTCOMES

On completion of the course, the students will be able to:

- understand the essentials of planning an event.
- learn practical aspects of organizing events of various forms.
- get knowledge of legal and ethical issues involved in event management.
- identify the processes involved in format and venue selection, registration, catering, accommodation, transport, theming, security and entertainment.
- identify management essentials such as developing budgets, critical paths, work breakdown structures, risk mitigation and contingency planning.
- achieve best practice in the development and delivery of successful conference and corporate gatherings.

Semester V	INDUSTRIAL LAW	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- provide the students with practical knowledge of Industrial law issues.
- provide a rich fund of contemporary knowledge, basic concepts, emerging ideas, evolving theories, latest technique, ever changing procedures & practices in the field of Industrial Law.
- highlight the Provisions of Law governing the Trade Union and Maternity Benefit.
- enable the students to understand the Legal Remedies available in the Law to the Business People.

Course Code 18UBAC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	S	M	S	S	S

Semester V	SECRETARIAL PRACTICE	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18UBAC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- equip and orient oneself towards understanding and performing the functions of a Company Secretary
- develop essential skills in the discharge of duties as a Company Secretary
- play an active role in the incorporation of a company
- involve in the preparation of various documents during major events of the company like incorporation, capital issue, meetings, etc.
- contribute actively in the convening of important meetings of the company.

Course Code 18UBAC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	L	S	S	L	M
CO 2	S	S	M	S	S	L	L
CO 3	S	M	S	S	S	L	M
CO 4	S	S	S	S	S	L	L
CO 5	S	S	S	S	M	M	L

Semester V	MANAGEMENT ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- express financial scenarios in terms of ratios
- analyse financial statements by comparison.
- research about a company's performance on the basis of ratio analysis
- appraise a company's cash position and suggest appropriate actions
- evaluate a company's break-even point and advise management
- assess the company's performance in comparison with the budgets and take actions

Course Code 18UBAC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	S
CO 2	S	M	M	S	M	S	L
CO 3	S	L	M	M	M	M	M
CO 4	S	M	S	S	S	S	L
CO 5	S	S	S	S	S	M	S
CO 6	S	M	M	S	L	M	M

Semester V	RESEARCH METHODOLOGY	Hours/Week: 5	
Elective		Credits: 4	
Course Code 18UBAE51		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- identify appropriate research topics.
- formulate hypotheses for the research problems identified.
- conduct research work and formulate research synopsis and report
- select and define appropriate research problem and parameters.
- develop a project proposal (to undertake a project).
- prepare a research report.

Course Code 18UBAE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	L	L	L	L	S	L
CO 2	M	M	M	M	M	S	M
CO 3	S	S	S	S	S	S	S
CO 4	S	S	S	S	S	S	S
CO 5	S	S	S	S	S	S	S
CO 6	M	M	M	M	M	M	M

Semester V	FAMILY BUSINESS	Hours/Week: 5	
Elective		Credits: 4	
Course Code 18UBAE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- run the family business with core original values
- adapt the family business to contemporary environment
- take active part in governance issues of family business
- handle crisis situations in family business
- resolve conflicts arising in family business
- involve and work towards growth and sustainability in family business

Course Code 18UBAE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	M	S	M	M	M	S
CO 2	L	M	M	M	M	S	M
CO 3	L	M	M	M	M	L	S
CO 4	L	M	S	S	S	M	M
CO 5	L	M	M	M	S	S	S
CO 6	L	M	S	S	M	M	S

Semester V	TALLY PRACTICAL	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 18UBAS51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- create company, enter accounting voucher entries including advance voucher entries
- become skillful for employability in the job market.
- create and reconcile bank statement, do accrual adjustments, and also print financial statements
- apply trial balance and can prepare balance sheet
- possess required skill and can also be employed as Tally data entry operator
- plan and prepare stock summary and stock ledger

Course Code 18UBAS51P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	L	S	M	S	L
CO 2	L	S	L	S	M	M	S
CO 3	M	S	L	S	M	M	S
CO 4	M	S	L	S	M	S	S
CO 5	M	S	L	S	M	S	M
CO 6	M	S		S	M	L	M

Semester V	E-PRESENTATION	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 18UBAS52P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course the students will be able to

- create e-presentation to suit the various requirements of institutions & corporate.
- design marketing promotional materials needed for a corporate including logo, flyers, & brochures and advertisements.
- create the graphic designs required in the institution including invitation, certificates, banners and book cover.
- apply the designing tools of corel-draw to create attractive presentation.
- use the cloud computing online designing software.

Course Code 18UBAS52P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	L	M	L	M	S
CO 2	S	M	M	L	M	S	S
CO 3	M	M	M	S	S	S	S
CO 4	S	S	S	M	L	S	S
CO 5	S	S	M	L	L	S	S

Semester V	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 18UBAS53		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply numerical aptitude in career
- solve questions involving aptitude in competitive examination.
- support students in higher studies in technology or management depending on their inclination & aptitude.
- develop students for prospective career in Government and Corporate Sector.
- provide guidance in various examinations such as SET/ NET, Defence services, Banks, Railways, Public sectors and corporate etc.

Course Code 18UBAS53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	M	-		-
CO 2	S	S	S	-	-	M	-
CO 3	S	S	M	M	-	M	-
CO 4	-	S	M	-	-	M	-
CO 5	S	S	-	-	-	-	M

Semester VI	STRATEGIC MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- implement the concepts and theories of strategic management in real life situations.
- extend competency in designing organization structure.
- formulate the strategy using various techniques.
- develop the strategy for realizing the vision and mission of an organization.
- evaluate the factors influencing strategic management.
- select the best strategy and apply it in their business.

Course Code 18UBAC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	M	L	L	S	L
CO 5	S	S	S	S	S	S	S
CO 6	S	S	S	S	S	S	S

Semester VI	BANKING THEORY AND PRACTICE	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC62		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- analyse the different kinds of deposits schemes
- evaluate the various types of negotiable instruments available.
- identify the methods and procedures used in endorsement.
- estimate how the banking system works in India.
- examine about the lending principles.
- develop knowledge about E-banking.

Course Code 18UBAC62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	S	M		L	M	M
CO 2	S	M	M	M	M	S	M
CO 3	M	M	S	M	M	M	M
CO 4	S	M	S	M	M	L	S
CO 5	M	L	M	M	M	L	M
CO 6	S	M	M	M	L	S	S

Semester VI	BUSINESS ENVIRONMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18UBAC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- demonstrate and develop conceptual framework of business environment
- implement the business ethics in the business.
- identify the socio-cultural activities that act upon business.
- categorize the environmental factors that affect the business.
- identify the positive sides of the multinational company in an economy.
- examine the CSR activities of the business to the various stakeholders.

Course Code 18UBAC63	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	S
CO 2	S	S	S	S	S	L	S
CO 3	S	S	S	S	M	L	S
CO 4	S	S	S	S	L	L	S
CO 5	S	S	S	M	M	L	M
CO 6	S	S	S	S	M	M	S

Semester VI	GREEN MANAGEMENT	Hours/Week: 5	
Elective		Credits: 3	
Course Code 18UBAE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- create a foundation for environmental management
- encourage the practice of reusing and recycling of materials used in the production process
- estimate the culture, behavior, diversity and structure of organizations in implementing green management systems
- identify waste reduction and suggest on pollution prevention
- work towards energy efficiency
- analyze financing and investing in green products and business models

Course Code 18UBAE61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	L	-	M	-	-
CO 2	-	S	-	L	-	-	M
CO 3	S	-	M	-	S	L	-
CO 4	-	S	-	L	-	M	L
CO 5	S	-	L	M	S	-	-
CO 6	-	S	-	M	-	L	M

Semester VI	RURAL BUSINESS	Hours/Week: 5	
Elective		Credits: 3	
Course Code 18UBAE62		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop conceptual framework of Rural business
- comprehend and capture the opportunities for development of Rural Business
- plan and devise strategies for promoting products in rural areas
- identify the contemporary schemes available from the government.
- form self help groups and work towards development of members
- suggest practices to sustain and grow business in rural areas.

Course Code 18UBAE62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	L	S	M	L	M	S
CO 2	M	L	L	M	M	M	S
CO 3	M	M	S	S	S	S	S
CO 4	M	M	M	M	M	M	S
CO 5	S	S	S	L	M	M	S
CO 6	S	S	S	S	M	S	S

Semester VI	SOFT SKILLS	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 18UBAS61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- work effectively in an organization through good team building skills
- efficiently manage time and work in an organization in order to ensure both individual and career goals
- take appropriate decisions after solving critical problems in an organization
- apply out-of box thinking in business decisions
- handle different situations with emotional poise and balance
- secure better deals in both business and professional life with the better negotiation skill

Course Code 18UBAS61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	S	S	S	M	M	S
CO 2	L	M	M	S	M	S	M
CO 3	M	S	M	L	M	L	S
CO 4	L	M	S	S	S	M	M
CO 5	L	S	L	M	S	S	S

Semester VI	EMPLOYABILITY SKILLS	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 18UBAS62		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- categorize the knowledge and skills required for obtaining and keeping employment.
- build individual skill assessments
- develop interpersonal communication skills, teamwork skills
- efficiently fulfill workplace responsibilities,
- build confidence and self-esteem.
- communicate effectively with employers, supervisors, and co-workers.

Course Code 18UBAS62	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	S	S	S	M	M	S
CO 2	L	M	M	S	M	S	S
CO 3	M	S	M	L	M	L	S
CO 4	L	M	S	S	S	M	S
CO 5	L	S	L	M	S	S	S
CO 6	L	S	M	S	M	M	S

PG Programme

PROGRAMME OUTCOMES

- Ponder over the learnt facts enabling a critical and in-depth understanding leading to its successful application in all walks of life.
- Vibrate with effective oral and written communication to reach the minds of multitudes.
- Widen social mobility by involving academic activities in materializing theories into reality.
- Outsource the knowledge acquired with social concern to enforce the national responsibility.
- Empower the core personality by imbibing values and practices inherent in the nation's heritage.
- Enlightened with a sensibility to nurture nature for a green future.
- Strengthen the passion for learning with vigour and self-motivation.

M.A. Tamil

PROGRAMME SPECIFIC OUTCOMES FOR

இந்த பாடப்பிரிவு முடித்த பிறகு மாணவர்கள்,

- நல்லாசிரியராக, நல்லராய்ச்சியாளராக, இதழியலாளராக, பேச்சுக்கலை அறிந்தவராக, எழுத்தாளராக முடியும்.
- தமிழரின் வாழ்வியலை, இலக்கண இலக்கியங்கள் மூலம் அறிந்து கொண்டு, தனது வாழ்க்கையை, மொழிநடையைச் செம்மைப்படுத்த முடியும்.
- இலக்கணம் - மொழி பற்றிய வரலாறு, தன்மை, இலக்கியங்களைப் படித்தவுடன் திறனாய்வு செய்ய முடியும்.
- போட்டித் தேர்வுகளை தன்னம்பிக்கையுடன் எதிர்கொள்ள இயலும்.
- தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களை புரிந்து கொண்டு சமூகத்திற்குச் சேவை செய்ய இயலும்.
- இலக்கியங்கள், இலக்கணங்கள் கூறும் அறத்தினைப் புரிந்து கொள்வதன் மூலம் வாழ்க்கையை அறத்துடன் நடத்த இயலும்.
- இலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களை தற்கால சமூகச் சூழலோடு வளர்ச்சி நிலையோடு ஒப்பிட்டுக் காண்பர்.
- ஆய்வு மற்றும் ஆய்வாளர்களுக்குரிய திறன்களை பண்புகளை நாகரிகத்தினைப் புரிந்து கொள்ள இயலும்.
- தமிழுடன் தொடர்புடைய தொல்லியல், கல்வெட்டியல், இதழியல், ஊடகவியல், நாணயவியல் போன்ற பிற துறைகளில் வேலைவாய்ப்பு மற்றும் மேற்படிப்பு பெற இயலும்.

மூன்றாம் பருவம்	காப்பிய இலக்கியம்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC31		அக மதிப்பெண் 40	மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழ்க் காப்பியங்களை அறிவர்
- தமிழ்க் காப்பியங்கள் தோன்றியதன் பின்னணியை அறிவர்.
- தமிழ்க் காப்பியங்களின் வளர்ச்சி நிலையைப் புரிந்து கொள்வர்.
- காப்பியங்களின் இயல்பை அறிந்து கொள்வதன் வழி பண்டைத் தமிழரின் வாழ்வியலை அறிந்து கொள்வர்.
- காப்பியங்களை வகைப்படுத்தி ஆராய அறிவர்.
- காப்பியங்களைத் திறனாய்வுப் பார்வையுடன் கற்பர்.

Course Code 18PTAC31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	S	S
CO 2	S	S	S	M	S	S	S	S	S
CO 3	S	S	S	S	S	S	S	S	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	S	S	S	M	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S	S

மூன்றாம் பருவம்	தொல்காப்பியம்- பொருள் 1	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC32		அக மதிப்பெண் 40	மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அக இலக்கணத்தின் முக்கியத்துவத்தைப் புரிந்து கொள்வர்.
- தமிழர்களின் வாழ்க்கைக் கூறுகளை அறிந்து கொள்வர்.
- தமிழர்களின் அக, புற வாழ்வியல் வழி தனிமனித, சமுதாய நிலைகளை அறிந்து கொள்வர்.
- தமிழரின் மரபு நிலைப்பாடுகளை இன்றைய சூழலோடு ஒப்பிட்டு ஆய்வர்.
- இலக்கணங்களைத் திறனாய்வு நோக்குடன் கற்பர்.

Course Code 18PTAC32	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	M	S	M	S	S	M	M
CO 2	S	S	M	S	S	S	S	M	M
CO 3	S	S	S	S	S	S	S	M	M
CO 4	S	S	S	S	S	S	S	S	S
CO 5	S	S	S	S	M	M	S	S	S

மூன்றாம் பருவம்	ஆய்வியல் நெறிமுறைகள்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC33		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- ஆய்வுக் களங்களைப் புரிந்து கொள்வர்.
- ஆய்வு குறித்த சிக்கல்களை அறிந்து கொள்வர்.
- திறனாய்வுப் பணியினை அறிவர்.
- திறனாய்வின் தேவையினை அறிந்து கொள்வர்.
- ஆய்வு நாகரிகத்தைக் கடைபிடிக்கக் கற்றுக் கொள்வர்.
- ஆய்வாளரின் பண்புகளை அறிவர்.

Course Code 18PTAC33	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	M
CO 2	S	S	S	M	M	S	S	M	S
CO 3	S	S	S	M	S	S	S	M	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	S	M	S	M	S	S	S	S	S
CO 6	S	S	S	M	S	S	S	S	S
CO7	S	S	M	M	S	S	S	M	S

மூன்றாம் பருவம்	அற இலக்கியம்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAE31		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அறத்தின் அடிப்படையைப் புரிந்து கொள்வர்.
- இன்றைய சமூகச் சூழலில் அறத்தின் தேவையை உணர்வர்.
- அறம் கடைபிடித்தலின் தேவையை உணர்வர்.
- அற இலக்கியங்களைத் திறனாய்வுப் பார்வையுடன் கற்பர்..
- ஆய்வுக்களங்களாக அற இலக்கியங்களைத் தேர்வு செய்வர்.
- அற இலக்கியங்களின் வழி வாழ்வியல் நெறிகளை உணர்வர்.

Course Code 18PTAE31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	M
CO 2	S	S	S	M	S	S	S	M	S
CO 3	S	S	S	M	S	S	S	M	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	S	M	S	M	S	S	S	S	S
CO 6	S	S	S	M	S	S	S	S	S

மூன்றாம் பருவம்	சித்தர் இலக்கியம்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAE32		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- சித்தர் இலக்கியங்களை அறிந்து கொள்வர்.
- சித்தர்களின் பாடல்களின் வழி வாழ்வியலைப் புரிந்து கொள்வர்.
- சித்தர்களின் பொதுமை நெறியை அறிவர்.
- சித்தர்களின் வாழ்க்கை வரலாறுகளை உற்று நோக்குவர்.
- சித்தர்களின் தத்துவக் கருத்துக்களைப் புரிந்து கொள்வர்.

Course Code 18PTAE32	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	M	S	S	S	S	S
CO 2	S	S	S	M	S	M	S	S	S
CO 3	S	S	S	M	S	S	M	M	M
CO 4	S	S	S	M	S	S	M	M	S
CO 5	S	S	S	M	S	S	S	M	M

முன்றாம் பருவம்	தமிழும் பிறதுறைகளும்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAN31		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, பிறதுறை மாணவர்கள்

- தமிழின் தொன்மை, பண்பாடு மற்றும் பிற சிறப்பினை உணர்ந்து கொள்வர்.
- தமிழைப் பிற துறைகளுடன் தொடர்புபடுத்தி அறிந்து கொள்வர்.
- தமிழ்மொழி மற்றும் தமிழரின் விழுமியங்களைக் கற்றுக் கொள்வர்.
- மேலைநாடுகளின் அறிவியல் வளர்ச்சியை தமிழ் இலக்கியங்கள் வழி ஒப்பிட்டு அறிவர்.
- போட்டித்தேர்வு மற்றும் பிறதுறை சார்ந்த வேலைவாய்ப்பிற்குத் தயாராவர்.

Course Code 18PTAN31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	S	M	S
CO 2	S	S	S	S	S	S	S	S	S
CO 3	S	S	S	S	S	S	S	S	S
CO 4	S	S	S	S	M	M	S	S	S
CO 5	S	M	S	S	M	M	M	M	S

நான்காம் பருவம்	பண்டை இலக்கியம்	நேரம் ∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC41		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- பண்டை இலக்கியங்களின் செவ்வியல் பண்புகளை அறிவர்.
- பண்டை இலக்கிய மாந்தர்களின் வழி வாழ்வியல் விழுமியங்களை அறிவர்.
- பண்டை இலக்கியங்களில் காணப்படும் பிறதுறை பற்றிய செய்திகளை உணர்வர்.
- பண்டை இலக்கியங்களைத் திறனாய்வு நோக்குடன் கற்பர்.
- போட்டித்தேர்வு மற்றும் மேற்படிப்புகளுக்குத் தயாராவர்.

Course Code 18PTAC41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	S	S	S	S	M	S
CO 2	S	S	S	S	S	S	S	M	M
CO 3	S	M	S	S	M	M	M	M	S
CO 4	S	M	S	S	M	M	M	M	S
CO 5	S	M	S	S	M	M	M	S	M
CO 6	S	M	S	S	M	M	S	S	S

நான்காம் பருவம்	தொல்காப்பியம் பொருள்-II	நேரம் .∴ வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC42		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- அக இலக்கணப் படைப்பின் மேன்மையினைப் புரிந்து கொள்வர்.
- தமிழர்களின் வாழ்க்கைக் கூறுகளை அறிந்து கொள்வர்.
- செய்யுளியல் வழி படைப்பு மற்றும் வகைகளை அறிவர்.
- தமிழின், தமிழின் மரபுகளை அறிந்து கொள்வர்.
- இலக்கண நூலில் உள்ள ஆய்வுக்களங்களை அறிவர்.
- திறனாய்வு நோக்குடன் கற்பர்.

Course Code 18PTAC42	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	M	M	S	S	S	M	M
CO 2	S	S	S	S	S	S	S	M	M
CO 3	S	M	S	S	M	M	S	S	S
CO 4	S	S	S	S	S	S	S	M	M
CO 5	S	M	S	S	M	M	S	S	S
CO 6	S	M	S	S	M	M	S	S	S

நான்காம் பருவம்	தமிழர் வரலாறும் பண்பாடும்	நேரம் : வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC43		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- தமிழர் வரலாற்றின் வழி தமிழரின் தொன்மை மரபுகளைப் புரிந்து கொள்வர்.
- தமிழர் நாகரிகத்தின் மூலம் வாழ்வியல் விழுமியங்களைப் புரிந்து கொள்வர்.
- தமிழின் சிறப்பினை உணர்ந்து கொள்வர்.
- ஒவ்வொரு மன்னராட்சி காலங்களிலும் குறிப்பிட்ட தமிழ் இலக்கியங்கள் தோன்றியதன் பின்னணி அறிவர்.
- தொல்லியல் துறையில் வேலைவாய்ப்பு பெறுவர்.
- ஆய்வு அடிப்படையில் தமிழர்களின் வரலாறு மற்றும் இலக்கியங்களை அறிந்து கொள்வர்.

Course Code 18PTAC43	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	S	S	M	M	S	M	M	S
CO 2	S	S	S	S	S	S	M	M	M
CO 3	S	S	S	S	M	S	S	S	S
CO 4	S	S	S	S	M	M	S	S	M
CO 5	M	M	M	S	M	M	M	S	S
CO6	S	M	M	S	M	M	M	S	S

நான்காம் பருவம்	நாட்டுப்புறவியல்	நேரம் : வாரம் : 6	
முதன்மைப் பாடம்		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 18PTAC44		அக மதிப்பெண் 40	புற மதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- வாய்மொழி இலக்கிய வகைப்பாடுகளை அறிந்து கொள்வர்.
- வாய்மொழி இலக்கியங்களின் வரலாற்றினைப் புரிந்து கொள்வர்.
- வாய்மொழி இலக்கியங்கள் வழியாக கலை, மருத்துவம், பண்பாடு குறித்து அறிந்து கொள்வர்.
- கதைப்பாடல்களின் வழி தமிழரின் வரலாற்றினைத் தெரிந்து கொள்வர்.
- நாட்டுப்புற இலக்கியங்களைத் திறனாய்வு நோக்குடன் கற்பர்

Course Code 18PTAC44	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO 8	PSO 9
CO 1	S	M	S	M	S	M	S	M	S
CO 2	S	S	S	M	S	S	M	S	S
CO 3	S	S	S	M	S	S	S	S	S
CO 4	S	S	S	M	S	S	S	S	S
CO 5	S	S	S	M	S	S	S	S	S

M.A. English

PROGRAMME SPECIFIC OUTCOMES

Students of Postgraduate English Literature Degree Programme will be able to

PSO 1: trace the history of the English language from its origin and identify the various changes it has undergone through the ages.

PSO 2: understand the nuances in the pronunciation of different sounds in the English language.

PSO 3: acquire a comprehensive knowledge of English literature from the Elizabethan age till the post-modern age.

PSO 4: make a comparative study of literary texts, and of Literature with other areas of knowledge.

PSO 5: learn about the literary works in English written by authors belonging to different nations.

PSO 6: acquire translation skills by mastering the theories and through practice – exercises.

PSO 7: co-ordinate different literary theories to promote inter-disciplinary studies, and also apply the critical theories for explicating Literary texts.

PSO 8: gain know-how about the methodology to be adopted in pursuing research projects.

PSO 9: undertake competitive examinations and other qualifying examinations with confidence and gusto.

Semester III	HISTORY OF THE ENGLISH LANGUAGE	Hours/Week: 6	
Core Course - 9		Credits: 5	
Course Code 18PENC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with the origin of language
- know the history of the English Language
- be acquainted with the growth and development of the English language
- learn English Grammar in an effective way
- acquire correct pronunciation
- analyze the etymology of words

Course Code 18PENC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO	S	S	-	-	-	-	M	L	M
CO	S	S	-	-	-	-	M	L	M
CO	S	S	-	-	-	-	M	L	M
CO	S	S	-	-	-	-	-	L	M
CO	S	S	-	-	-	-	-	L	M
CO	S	S	-	-	-	-	-	L	M

Semester III	COMPARATIVE LITERATURE	Hours/Week: 6	
Core Course - 11		Credits: 5	
Course Code 18PENC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand that literature of a country can be compared with the literature of another country.
- know that literature can be compared with other arts.
- realize that comparative study of literary pieces leads to a study of different cultures.
- acknowledge that influence studies promote comparison between two or more literary pieces representing different cultures.
- understand the development of literary genres through the ages.
- learn that the study of translation is an intermediary establishing the link between two literatures in different languages.

Course Code 18PENC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	-	M	S	S	-	S	S	M
CO 2	L	-	M	S	S	-	S	S	M
CO 3	L	-	M	S	S	-	S	S	M
CO 4	L	-	M	S	S	-	S	S	M
CO 5	L	-	M	S	S	-	S	S	M
CO 6	L	-	M	S	S	S	S	S	M

Semester III	ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS	Hours/Week: 6	
Core Course -12		Credits: 5	
Course Code 18PENC34		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- overcome difficulties in preparing for NET & SET Examinations
- appear for other competitive examinations
- identify the critical ideas, values, themes and different critical approaches
- understand literary texts in their cultural and historical contexts
- possess knowledge of all genres of all ages
- get an opportunity to analyse world literatures, literary theories and practice

Course Code 18PENC34	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	M	S	-	S	-	S
CO 2	S	-	S	M	S	-	S	-	S
CO 3	S	-	S	M	S	-	S	-	S
CO 4	S	-	S	M	S	-	S	-	S
CO 5	S	-	S	M	S	-	S	-	S
CO 6	S	-	S	M	S	-	S	-	S

Semester IV	GLOBAL LITERATURE	Hours/Week: 6	
Core Course -13		Credits: 5	
Course Code 18PENC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the historical, social and cultural contexts of different nationalities
- have a broad perspective beyond their own nationality
- comprehend the narrative style of writers from various countries
- become familiar with the themes dealt by globally eminent writers
- appreciate and enjoy literatures across the globe
- know the world wide culture

Course Code 18PENC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	L	S	S	-	M	M	S
CO 2	M	-	L	S	S	-	M	M	S
CO 3	M	-	L	S	S	-	M	M	S
CO 4	M	-	L	S	S	-	M	M	S
CO 5	M	-	L	S	S	-	M	M	S
CO 6	M	-	L	S	S	-	M	M	S

Semester IV	LITERARY THEORIES	Hours/Week: 6	
Core Course -14		Credits: 5	
Course Code 18PENC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain essential information about the gradual development of various literary theories
- understand clearly the basic concepts related to literary theory.
- differentiate literary theory from literary criticism.
- comprehend the application of various disciplines like Psychology, Sociology, *etc.*, to literature
- know details about the early literary theoreticians.
- learn the method of applying literary theory to analyse literary texts.

Course Code 18PENC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	-	L	M	M	-	S	S	S
CO 2	M	-	L	M	M	-	S	S	S
CO 3	M	-	L	M	M	-	S	S	S
CO 4	M	-	L	M	M	-	S	S	S
CO 5	M	-	L	M	M	-	S	S	S
CO 6	M	-	L	M	M	-	S	S	S

Semester IV	DIASPORIC WRITING	Hours/Week: 6	
Core Course -15		Credits: 5	
Course Code 18PENC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with varied cultures and their impact on immigrants.
- understand the immigrant experience as reflected in the writings of Diasporic writers.
- comprehend the cultural diversity, plurality and schizophrenia engendered by globalism in post-modern context.
- identify the possibilities for comparative readings of texts about cultural interaction and migration.
- realize the role of assimilation in the diasporic context.
- differentiate between the melting pot and mosaic culture existing in nations across the world.

Course Code 18PENC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	-	-	L	S	-	L	-	M
CO 2	-	-	-	L	S	-	L	-	M
CO 3	-	-	-	-	S	-	L	-	M
CO 4	-	-	-	-	-	-	L	-	M
CO 5	-	L	-	M	S	-	L	-	M
CO 6	-	-	-	L	S	-	L	-	M

M.A. History

PROGRAMME SPECIFIC OUTCOMES

Upon the completion of the programme the students will be able to

- understand the History of Tamil Nadu, India and World through the ages.
- analyse the historical facts that shape individual and communities.
- acquire knowledge in Archaeological/Archival/Library Sources/Modern technologies to pursue research.
- appreciate the Political, Socio- Economic, Cultural and Scientific development of the period under study.
- perceive the diversity of human experience influenced by ethnicity, cultural tradition, gender and class.
- get awareness on legislations, good governance and civic responsibility and thereby becoming a good citizen.
- promote Justice, Peace and Harmony with social responsibility in a pluralistic society.
- gain knowledge and skill in acquiring jobs, understanding problems and finding solutions, becoming entrepreneurs.
- pursue higher studies ,appear for competitive examinations and other qualifying examinations ,enter into a service in academics and other professional areas of History.

Semester: III	HISTORY OF RUSSIA (A.D. 1682 – 1991)	Hours/Week: 6	
Core course		Credits : 5	
Course Code 18PHIC31		Internal 40	<u>External</u> 60

COURSE OUTCOMES

On the completion of course the student will be able to

- gain knowledge over the administration of absolute monarchs in Russia.
- aware of the powers of the constitutional monarchs in Russia.
- understand the remarkable events in the history of Russia.
- know the principles of socialism.
- analyse the policies of communism and the role of USSR in maintaining world peace.
- evaluate the impact of disintegration of USSR.

Course Code 18PHIC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	L	M	M	M	L
CO 2	S	S	L	S	L	S	M	M	L
CO 3	S	S	L	S	M	M	M	M	L
CO 4	S	S	L	S	M	S	S	M	L
CO 5	S	S	-	S	M	M	S	M	L
CO 6	S	S	-	S	L	M	L	M	L

Semester: III	HISTORIOGRAPHY AND HISTORICAL RESEARCH	Hours/Week: 6	
Core Course		Credits : 5	
Course Code 18PHIC32		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the characteristics of History.
- acquire knowledge of historiography and its concepts.
- know the contribution of historians through the ages.
- evaluate historians' approach towards history.
- understand the methodology of historical writing.
- develop the skill to become good Historians.

Course Code 18PHIC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	-	-	M	-	S
CO 2	M	M	S	-	M	-	-	S	-
CO 3	S	S	M	L	M	-	-	-	L
CO 4	S	S	M	L	M	L	L	L	L
CO 5	L	L	S	L	-	-	-	S	S
CO 6	-	L	S	L	-	L	L	S	S

Semester: III	HISTORY OF EUROPE (A.D 1914 – 1945)	Hours/Week: 6	
Core course		Credits : 5	
Course Code 18PHIC33		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- understand the diplomacy of European powers by forming alliances.
- analyse the impact of treaties signed after the First World War.
- evaluate the position of Germany after its defeat in the World War.
- understand the principles of Nazism and Fascism.
- know the power politics in the inter- war period.
- acquire knowledge of the role of USA in the formation of UNO.

Course Code 18PHIC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	S	L	M	S	M	L
CO 2	S	L	L	M	L	M	S	M	L
CO 3	M	-	L	S	L	M	S	M	L
CO 4	S	S	L	S	L	M	S	L	L
CO 5	S	-	L	S	L	M	S	M	L
CO 6	S	-	L	S	L	M	S	M	L

Semester: III	TOURISM IN INDIA	Hours/Week: 6	
DSEC - 3		Credits : 5	
Course Code 18PHIE31		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- gain knowledge on Incredible India.
- be aware of Heritage sites of India.
- understand the Socio- Economic and Cultural aspects of Tourism.
- aware of the adventure Tourism in India.
- know the usage of Transportation and Accommodation facilities.
- get employment opportunities in the Tourism Industry.

Course Code 18PHIE31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	S	S	L	S	M	S
CO 2	S	M	L	S	S	L	S	S	S
CO 3	S	-	L	S	M	L	S	S	M
CO 4	S	M	-	S	S	L	S	S	M
CO 5	S	M	L	S	S	L	S	M	M
CO 6	S	M	-	S	M	L	S	S	S

Semester: III	PRINCIPLES OF PUBLIC ADMINISTRATION	Hours/Week: 6	
DSEC - 3		Credits : 5	
Course Code 18PHIE32		Internal 40	External 60

COURSE OUTCOMES

On the Completion of the Course the Student will be able to

- understand the basic concepts in Public Administration.
- acquire the skill of personality development.
- become an efficient administrator.
- aware of the functioning of Civil Service.
- know the mode of preparation of budget.
- appear for competitive examinations.

Course Code 18PHIE32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S	M	S	M	L	M
CO 2	S	S	L	S	M	L	S	S	S
CO 3	S	S	L	S	M	S	L		M
CO 4	S	S	L	S	M	M	M	M	M
CO 5	S	S	L	S	M	L	M	S	M
CO 6	-	-	L	S	M	-	M	M	S

Semester: III	HISTORY OF FREEDOM MOVEMENT IN INDIA (A.D. 1885-1947)	Hours/Week: 6	
NMEC		Credits : 4	
Course code 18PHIN31		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- Know the rise of Indian Nationalism.
- gain Knowledge over remarkable events in Freedom Movement.
- Understand the Freedom Movement into historical perspective.
- aware of the position of India before Independence.
- develop the spirit of Patriotism and Nationalism.
- become responsible citizen of India and appear in the competitive Examinations.

Course Code 18PHIN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	S	S	M	S
CO 2	S	S	M	S	M	S	S	M	S
CO 3	S	S	M	S	M	S	S	M	S
CO 4	S	S	M	S	M	S	S	M	S
CO 5	S	S	M	S	M	S	S	M	S
CO 6	S	S	M	M	L	S	S	M	S

Semester: IV	CONSTITUTIONAL HISTORY OF INDIA (A.D 1773-1950)	Hours/Week: 6	
Core Course		Credits : 5	
Course code: 18PHIC42		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- know the constitutional developments in India.
- gain knowledge on the impact of communal electorate system.
- have a deep interest in the preservation of unity, integrity and solidarity of our Nation.
- realise the duties and civic responsibilities as a citizen of India.
- understand the present constitution of India.
- appear for the competitive examinations.

Course Code 18PHIC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S		S	S	M	S
CO 2	S	S	L	S	L	S	S	S	S
CO 3	S	S	L	S	S	S	S	S	S
CO 4	S	S	L	S	L	S	S	S	S
CO 5	S	S	L	S		S	S	S	S
CO 6	M	L	L	S		M	M	S	S

Semester: IV	MAIN CURRENTS OF THE MODERN WORLD (A.D.1945-2000)	Hours/Week: 6	
Core Course		Credits : 5	
Course code: 18PHIC43		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- know UNO as a promoter of an International peace.
- acquire knowledge on aftermath of Second World War.
- understand the role of Regional and World Organisations in maintaining peace.
- gain knowledge about the issues in contemporary global scenario.
- get awareness on challenges to world peace.
- appear for competitive examinations.

Course Code 18PHIC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	L	S	S	S	S	S	M
CO 2	S	M	L	S	S	S	S	S	M
CO 3	S	S	L	S	S	S	S	S	M
CO 4	S	S	L	S	S	S	S	S	M
CO 5	S	M	L	S	S	S	S	S	M
CO 6	-	-	L	-	-	L	L	S	S

Semester: IV	HISTORY OF EAST ASIA	Hours/Week: 6	
Core Course		Credits : 5	
Course code: 18PHIC44		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- aware of western influence on China and its sphere of influence.
- understand the remarkable events in History of China.
- gain knowledge on communist principles.
- know the relations between East Asia and World powers.
- analyse the impact of world wars on East Asian Countries.
- understand the Economic recovery of East Asia.

Course Code 18PHIC44	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	S	M	L	L	M	M
CO 2	S	S	L	S	M	L	L	M	M
CO 3	M	S	L	S	M	L	L	M	M
CO 4	S	S	L	M	M	L	M	M	M
CO 5	S	S	L	S	M	L	L	M	M
CO 6	S	S	L	S	M	L	M	M	M

Semester: IV	ARCHIVES KEEPING	Hours/Week: 6	
DSEC - 4		Credits : 5	
Course code: 18PHIE41		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- gain Knowledge over the origin and evolution of Archives in National and International leve.
- know the skill of creating the Archival records of various kinds .
- learn the preservative methods for the maintenance of records.
- analyse the functions of the National and State Archives..
- acquire knowledge of the services of Private Archives in India.
- understand the promoting of Archival records in historical Research.

Course Code 18PHIE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	M	M		S	S
CO 2	S	M	S	S	M	L	L	S	S
CO 3	S	M	M	S	M		S	M	S
CO 4	S	M	S	S	M	M		M	S
CO 5	S	M	S	S				M	S
CO 6	S	M	S	S	L	L	L	S	S

Semester: IV	PANCHAYAT RAJ	Hours/Week: 6	
DSEC - 4		Credits : 5	
Course code: 18PHIE42		Internal 40	External 60

COURSE OUTCOMES

On the completion of course the student will be able to

- learn the administration of the local self – Government through the ages.
- know the structure of Panchayat Raj System.
- understand the Government Schemes and Programmes for Rural Development.
- acquire knowledge of Rural Development Programmes.
- aware of the programmes related to Employment.
- appear for competitive examinations.

Course Code 18PHIE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	M	M	M	S	M
CO 2	S	S	M	S	M	S	M	S	S
CO 3	S	S	M	S	M	M	M	S	S
CO 4	S	S	M	S	M	S	M	S	S
CO 5	S	S	M	S	M	S	M	S	L
CO 6	M	M	M	-	-	S	M	S	S

M.Sc. Mathematics

PROGRAMME SPECIFIC OUTCOMES

- ❖ Provides in-depth and detailed functional knowledge of the fundamental theoretical concepts of Mathematics.
- ❖ Enables contribution to the betterment of society through knowledge in Mathematics.
- ❖ Enhances the quality of analysis and research in different mathematical fields.
- ❖ Nurture problem solving skills, thinking and creativity through assignments, project works.
- ❖ Provides comprehensive knowledge in advanced mathematical subjects.
- ❖ Acquire sound knowledge to take up jobs in private and public sectors.
- ❖ Acquires deep knowledge in different disciplines of mathematics to qualify NET/SET exams.

Semester III	MEASURE THEORY	Hours/Week: 6	
Core Course-9		Credits: 5	
Course Code 18PMTTC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the knowledge gained from concrete cases to a general situation by means of going to general measure starting from Lebesgue measure.
- utilize constructive type proof technique effectively.
- move sequentially from basic case to required case via all possible in-between cases while introducing integration for general functions via simple functions.
- familiarize with new functions such as functions of bounded variations and absolutely continuous functions.
- understand the necessity of checking the existence and uniqueness whenever they come across such a situation.

Course Code 18PMTTC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	-	L	S	-	-
CO 2	M	-	-	-	M	-	-
CO 3	S	-	-	L	M	-	-
CO 4	S	-	-	L	S	-	-
CO 5	M	-	-	-	S	-	-

Semester III	COMPLEX ANALYSIS	Hours/Week: 6	
Core Course-10		Credits: 5	
Course Code 18PMTTC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- derive the Cauchy – Riemann equations and apply them to verify the given continuous function is complex differentiable or not.
- compute the radius of convergence for complex power series.
- construct conformal mappings between many kinds of domain.
- evaluate integrals along a path – directly from the definition and also via the Cauchy's theorem.
- compute the Taylor and Laurent expansions of simple functions, determining the nature of singularities and calculating residues.
- use Cauchy Residue theorem to evaluate integrals.

Course Code 18PMTTC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	L	M	M	-	L
CO 2	S	L	L	M	M	-	L
CO 3	S	L	S	M	L	-	L
CO 4	S	L	L	M	S	-	L
CO 5	S	L	L	M	S	-	L
CO 6	S	-	L	M	S	-	L

Semester III	OPERATIONS RESEARCH	Hours/Week: 6	
Core Course-11		Credits: 5	
Course Code 18PMTTC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- find the shortest route and the maximal flow in the given network
- find the minimum total cost and the minimum project completion time of the given project
- familiarize themselves with various queuing models
- optimize the unconstrained and constrained extremal problems
- use nonlinear programming algorithms to optimize the given unconstrained and constrained problems
- develop an understanding of various OR tools and their applications to real life problems.

Course Code 18PMTTC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	-
CO 2	S	S	-	S	-	S	L
CO 3	S	S	-	S	-	-	-
CO 4	M	M	-	M	-	M	-
CO 5	S	L	M	S	M	M	-
CO 6	S	S	M	S	M	S	M

Semester III	TOPOLOGY	Hours/Week: 6	
Core Course-12		Credits: 5	
Course Code 18PMTTC34		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- construct topologies on a finite set and topologies on real numbers.
- construct topologies which accept a given family of sets as base or subbase.
- construct the product topology on product spaces.
- give interior and closure of any set on topological spaces.
- define the notion of continuity and obtain the set of points on which a function is continuous.
- identify the spaces that are regular or normal and use those separation axioms to prove various properties.

Course Code 18PMTTC34	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	S	L	S	-	L
CO 2	S	M	M	L	S	-	L
CO 3	S	M	M	L	M	-	L
CO 4	S	L	S	L	M	-	L
CO 5	S	L	S	M	S	-	L
CO 6	S	-	S	L	S	-	L

Semester III	MATHEMATICS FOR COMPETITIVE EXAMINATIONS	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PMTN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic principles of mathematics
- enhance their analytical ability and computational skills.
- use appropriate arithmetical, and/or statistical methods.
- appear for competitive examinations with more confidence
- solve mathematical problems within a limited timeframe.

Course Code 18PMTN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	L	M	L	-	S
CO 2	L	-	M	MM	L	M	S
CO 3	L	-	M	M	L	L	S
CO 4	S	-	L	M	L	L	S
CO 5	-	-	M	L	L	L	S

Semester IV	FIELD THEORY AND LATTICES	Hours/Week: 6	
Core Course-13		Credits: 5	
Course Code 18PMTc41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- explain the fundamental concepts of field extensions.
- demonstrate accurate and efficient use of field extensions and Galois Theory.
- use the terminology correctly and underlying concepts of Galois Theory in a problem solving context.
- construct a polygon using just a compass and a ruler.
- explain the concept of Galois Theory and the related results.
- understand the properties of Lattice Theory.

Course Code 18PMTc41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	M	L	M	-	L
CO 2	M	-	M	L	L	-	L
CO 3	S	-	M	S	M	-	L
CO 4	S	-	L	S	M	-	L
CO 5	S	-	L	L	M	-	L
CO 6	S	-	M	S	L	-	L

Semester IV	FUNCTIONAL ANALYSIS	Hours/Week: 6	
Core Course-14		Credits: 5	
Course Code 18PMTTC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the fundamental properties of normed spaces and different types of normed spaces.
- analyze the statements and proofs of Hahn – Banach Theorems.
- know the concept of uniform Boundedness Principle and their applications.
- explain the concept of Bounded Inverse Theorem and derive spectral radius formula.
- understand the concept of Duals and Transposes.
- solve mathematical problems related to linear isometry.

Course Code 18PMTTC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	-	L	S	-	-
CO 2	M	-	-	-	M	-	-
CO 3	M	-	-	L	L	-	-
CO 4	M	-	-	L	L	-	-
CO 5	M	-	-	L	L	-	-
CO 6	M	-	-	S	M	-	L

Semester IV	NUMBER THEORY AND CRYPTOGRAPHY	Hours/Week: 6	
Core Course-15		Credits: 5	
Course Code 18PMTTC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- solve problems in Number Theory.
- find the greatest common divisor using the Euclidean algorithm.
- recognize various arithmetical functions.
- solve systems of linear congruences.
- learn to encrypt and decrypt a message using public key cryptography.

Course Code 18PMTTC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	-	M	S	-	L
CO 2	M	-	M	S	M	-	-
CO 3	M	-	-	M	M	-	L
CO 4	M	-	L	M	M	-	L
CO 5	S	S	M	M	S	-	-

Semester IV	GRAPH THEORY	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PMTE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- assess the effectiveness of any communication network using their knowledge about cut vertices, connectivity as well as spanning trees.
- apply graph theory concepts such as Eulerian, Hamiltonicity and Directed graph to practical situations.
- assort the avenues available for research work after studying factorization methods and labeling techniques.
- adapt various proof techniques as the result of studying colouring theorems.
- accumulate and analyse interesting graph theory parameters such as Ramsey number, radius and diameter.

Course Code 18PMTE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	S	S	S	M	-	-
CO 2	-	M	M	M	M	-	-
CO 3	-	-	M	M	L	-	-
CO 4	-	S	S	S	M	-	-
CO 5	-	M	S	M	M	-	-

Semester IV	COMBINATORIAL MATHEMATICS	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PMTE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- increase the capacity of viewing practical problems in the light of enumerating techniques
- get acquainted with interesting applications of generating functions
- solve recurrence relations
- know the principle of inclusion and exclusion
- know Poly's counting technique
- apply combinatorial theory in other fields

Course Code 18PMTE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	-	S	M	-	-
CO 2	M	-	L	M	L	-	-
CO 3	M	-	-	M	S	-	-
CO 4	S	-	-	M	M	-	-
CO 5	M	-	-	M	-	-	-
CO6	-	M	L	M	-	-	-

Semester IV	PROJECT	Hours/Week: 6	
Course Code 18PMTTC41PR		Credits: 5	
		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- work on any project
- get a clear idea about the new concepts at research level
- carry on both individual research and collaborative research with ease

Semester IV	SET/NET PREPARATION FOR ALGEBRA AND ANALYSIS	Hours/Week: -	
SELF STUDY PAPER		Credits: 5	
Course Code 18PMT041		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- get through SET/NET Examination easily

M.Sc. Physics

PROGRAMME SPECIFIC OUTCOMES

- Become proficient in Core concepts and recent trends in supported fields like Mathematics, Electronics, Computer science, Chemistry and Biology.
- Assimilate and relate physical phenomena and facts with the real life situations.
- Develop transferrable skills related to problem solving and computational skills.
- Ability to carry out projects independently and also in collaboration with other disciplines.
- Acquire recent knowledge to carry out research in different fields.
- Realize the impact of environmental safety in a global and social context.
- Enable the students to be eligible for wide range of employability.
- Renew their scientific competence to suit the future scenario.

Semester III	SOLID STATE PHYSICS - I	Hours/Week: 6	
Core Course-7		Credits: 4	
Course Code 18PPHC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- gain knowledge about the periodic arrangement of atoms.
- understand the concept of crystal bindings and elastic constants.
- comprehend the influence of lattice vibrations on thermal behavior.
- calculate thermal and electrical properties in the free-electron model.
- analyze the energy bands of semiconductor crystal.
- acquire the knowledge about the Fermi surface.

Course Code 18PPHC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	S	S	S	S	S	S
CO 2	S	S	L	S	S	L	S	S
CO 3	S	S	L	L	L	L	S	S
CO 4	S	S	S	S	S	-	S	S
CO 5	S	S	S	L	S	L	S	S
CO 6	S	S	L	L	L	L	S	S

Semester III	ELECTROMAGNETIC THEORY	Hours/Week: 6	
Core Course-8		Credits: 5	
Course Code 18PPHC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire wide knowledge of electromagnetic theory.
- appreciate the basic theory of Faraday's induction Law.
- gain knowledge about the Electromagnetic Propagation.
- analyze the nature of Electromagnetic wave propagation in guided medium.
- describe and make calculations of plane Electromagnetic waves in homogeneous media.
- apply Maxwell's equations to determine field waves, potential waves, energy and charge conservation conditions.

Course Code 18PPHC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	S	S	S	S	S	S
CO 2	S	S	S	S	S	S	S	S
CO 3	S	S	S	L	S	L	L	S
CO 4	S	S	S	L	S	L	L	S
CO 5	S	S	S	L	S	L	-	S
CO 6	S	S	S	L	S	L	L	S

Semester III	QUANTUM MECHANICS - II	Hours/Week: 6	
Core Course-9		Credits: 5	
Course Code 18PPHC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concept of scattering cross-section.
- acquire knowledge about partial wave analysis.
- understand the concept that the quantum states live in a vector space.
- acquire knowledge about representations, transformations & symmetries.
- master the concepts of angular momentum and spin, as well as the rules for quantization and addition.
- analyse the consequence of relativistic wave equations.

Course Code 18PPHC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	L	L	M	L	S	S
CO 2	S	S	M	L	M	L	S	S
CO 3	S	S	L	-	-	-	S	S
CO 4	S	S	M	-	-	L	S	S
CO 5	S	S	L	L	M	-	M	S
CO 6	S	S	L	-	M	L	M	S

Semester III	ELECTRONICS AND GENERAL PHYSICS LAB - III	Hours/Week: 6	
Core Practical-3		Credits: 3	
Course Code 18PPHC31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will

- become professionally trained in the area of Electronics and Nonlinear circuits.
- understand the basic concepts of interfacing devices and programming knowledge about Microcontroller 8051.
- get familiarized with the basics of experimental physics.
- analyse the concepts involved in research.

Semester III	DIGITAL ELECTRONICS	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PPHN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get an idea about number based conversion.
- understand the concepts of Boolean algebra.
- gain knowledge in combinational circuits.
- know about the arithmetic circuits.
- apply theory of flip flops in the gadgets of daily use.
- get an insight into counters and registers.

Course Code 18PPHN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	L	S	L	L	-	L	S
CO 2	S	S	S	L	L	-	L	S
CO 3	S	L	S	M	L	-	L	S
CO 4	S	L	L	M	L	-	S	S
CO 5	S	S	-	S	S	L	S	S
CO 6	S	S	-	S	S	L	S	S

Semester IV	SOLID STATE PHYSICS - II	Hours/Week: 6	
Core Course-10		Credits: 5	
Course Code 18PPHC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the fundamentals of solid state particles such as plasmons, polaritons, polarons and excitons.
- get a basic knowledge in superconductivity.
- understand the concept of dielectrics and ferroelectrics
- comprehend the quantum theory of dia, para, ferro and antiferromagnetism.
- understand the concept of Nuclear Magnetic Resonance
- identify different types of defects and dislocations in crystals.

Course Code 18PPHC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	-	L	L	-	M	S
CO 2	S	S	L	M	S	M	M	S
CO 3	S	S	L	M	M	-	M	S
CO 4	S	S	L	M	M	M	M	S
CO 5	S	S	-	M	L	-	M	S
CO 6	S	S	L	M	M	M	M	S

Semester IV	MOLECULAR SPECTROSCOPY	Hours/Week: 6	
Core Course-11		Credits: 5	
Course Code 18PPHC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get knowledge about the internuclear distances and bond angles.
- analyze the concepts of pure rotational and vibrational spectra of molecules.
- learn the interaction of spin with an external magnetic field.
- understand and get familiarised with quantized energy levels and introductory spectroscopy.
- explore the electronic spectra of molecules.
- describe electron spin and nuclear magnetic resonance spectroscopy and their applications.

Course Code 18PPHC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	S	S	S	M	L	S
CO 2	S	S	S	S	S	L	L	S
CO 3	S	S	S	S	S	L	M	S
CO 4	S	S	S	M	S	L	L	S
CO 5	S	S	L	L	S	M	L	S
CO 6	S	S	M	L	S	L	S	S

Semester IV	ELECTRONIC COMMUNICATIONS	Hours/Week: 6	
Core Course-12		Credits: 5	
Course Code 18PPHC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyze the performance of a baseband and pass band digital communication system.
- understand the concept of cellular communication.
- acquire the knowledge of GSM mobile communication standard, its architecture, logical channels, advantages and limitations.
- understand the important and fundamental antenna parameters and terminology.
- gain knowledge about the basics of satellite communication.
- apply the fundamental principles of optics and light wave to design optical fiber communication systems.

Course Code 18PPHC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	L	L	S	-	L	S
CO 2	S	S	M	L	S	L	S	S
CO 3	S	L	M	M	S	-	S	S
CO 4	S	S	M	L	S	L	L	S
CO 5	S	S	M	S	S	-	S	S
CO 6	S	S	M	S	S	L	S	S

Semester IV	PROJECT VIVA-VOCE	Hours/Week: 6	
Core Course-13		Credits: 4	
Course Code 18PPHC41PR		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will

- gain research experience within a specific field of physics through a supervised project.
- exhibit their intellectual independence with a scientific wave of thinking.
- analyse, interpret and critically evaluate research findings.
- use existing scientific knowledge to innovate other technological advancements of practical use.

Semester: IV	NANO PHYSICS	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PPHE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the properties of materials at the nanometre scale.
- get familiar with various nanofabrication, imaging, manipulation methods.
- know major confinement effects and new phenomena in nanostructured materials and use solid state Physics to describe them.
- understand the various nano applications and nanodevices in Physics.
- learn how basic Physics can be used to describe the behavior of electrons in nano-scale materials.
- analyse the materials and structures in nano scale.

Course Code 18PPHE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	L	S	S	-	L	S
CO 2	S	S	-	S	S	-	-	S
CO 3	S	S	L	S	S	L	L	S
CO 4	S	S	-	S	S	M	M	S
CO 5	S	S	L	S	S	M	L	S
CO 6	S	S	-	S	S	M	L	S

Semester IV	BIO PHYSICS	Hours/Week: 6	
DSEC – 3		Credits: 5	
Course Code 18PPHE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- explain selected biological phenomena using physical principles.
- make use of physical concepts and techniques to address problems in biology.
- understand the structure determination of biological molecules such as proteins and DNA using X-ray diffraction or nuclear magnetic resonance.
- gain knowledge about bioenergetics using thermodynamics.
- know more about biomechanism.
- acquire knowledge about radiation biophysics.

Course Code 18PPHE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	S	S	L	S	S	M	S	S
CO 2	S	S	-	S	S	L	L	L
CO 3	S	S	L	S	S	M	S	S
CO 4	S	S	-	S	L	L	L	L
CO 5	S	L	L	S	L	L	L	S
CO 6	S	S	-	S	M	M	M	M

M.Sc. Chemistry

PROGRAMME SPECIFIC OUTCOMES

Students of Post Graduate Chemistry Programme will be able to

PSO 1: gain complete knowledge about all fundamental aspects of all the elements of chemistry.

PSO 2: understand the advanced level aspects in the different disciplines of chemistry.

PSO 3: comprehend the principles involved in the reaction mechanism and analytical techniques in organic chemistry.

PSO 4: acquire knowledge in Nanochemistry and Biochemistry.

PSO 5: get an exposure on current trends in chemistry like green chemistry.

PSO 6: gain the knowledge of chemistry through usages and practices.

PSO 7: scrutinize the basic and advanced level experimental methods to develop research oriented skills and life skills.

PSO 8: enhance their skills using modern chemical tools, models, chem-draw, charts and equipments.

PSO 9: get aware and handle the sophisticated instruments/equipments.

Semester III	ORGANIC SPECTROSCOPY, REARRANGEMENT, REAGENTS AND SYNTHETIC METHODS	Hours/Week: 6	
Core Course-7		Credits: 4	
Course Code 18PCHC31N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basic concepts and current trends in organic spectroscopy.
- comprehend the concepts of NMR to assign and ascertain the types of protons and carbon frame work in organic compounds.
- gain knowledge on the basic ideas on photochemistry.
- apprehend the mechanism involved in Molecular rearrangements.
- comprehend the role of reagents in organic synthesis
- apprehend knowledge on the basic principles of novel synthetic strategies in organic chemistry.

Course Code 18PCHC31N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	-	S	M	-	M
CO 2	S	S	S	-	-	S	M	-	M
CO 3	S	L	-	-	-	-	-	-	-
CO 4	S	M	S	-	-	-	-	-	-
CO 5	S	-	-	-	-	-	-	-	-
CO 6	L	S	S	-	-	S	M	-	M
CO 7	S	L	S	-	-	S	M	-	M

Semester III	ORGANOMETALLICS, NUCLEAR CHEMISTRY AND INORGANIC SPECTROSCOPY	Hours/Week: 6	
Core Course - 8		Credits: 5	
Course Code 18PCHC32N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get a clear idea on the role of organometallic compounds as catalyst.
- comprehend the role of transition metals and their oxidation states in the heterogeneous catalysis.
- get knowledge about nuclear chemistry.
- gain knowledge about radioactive materials.
- characterize inorganic compounds using ESR and NMR .
- get idea about the fluxional properties of molecules.
- understand the concept and applications of NQR Spectroscopy.

Course Code 18PCHC32N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	L	-	-	-	-
CO 2	M	-	-	-	M	-	-	-	-
CO 3	S	-	-	-	-	-	M	-	-
CO 4	S	L	-	-	-	-	-	-	-
CO 5	-	M	-	-	-	-	-	-	S
CO 6	M	S	-	-	-	-	-	-	-
CO 7	S	-	-	-	-	-	-	M	-

Semester III	ELECTROCHEMISTRY AND MOLECULAR SPECTROSCOPY	Hours/Week: 6	
Core Course - 9		Credits: 5	
Course Code 18PCHC33N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the theory of electrical conductance
- know about the various models of electrical double layer
- understand the chemistry of corrosion and fuel cells
- validate the theoretical background of rotational spectra
- analyse the physical approach of IR & Raman spectra
- gain knowledge about NMR, NQR & ESR spectra

Course Code 18PCHC33N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	-	-	S	S	S	S
CO 2	S	S	-	-	-	S	S	S	S
CO 3	S	S	-	-	-	L	M	M	-
CO 4	S	S	-	-	-	L	S	M	S
CO 5	S	S	-	-	-	S	S	S	S
CO 6	S	S	-	-	-	-	M	-	-

Semester III	CHEMISTRY FOR COMPETTIVE EXAMINATION	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PCHN31N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire basic knowledge of chemistry.
- apprehend about acids and bases, water and nuclear chemistry
- comprehend about environmental pollution
- understand about polymers, cement and fuels.
- have an exposure on food adulterants, vitamins and antibiotics.

Course Code 18PCHN31N	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	-	-	-	S	L	L	-
CO 2	S	L	-	L	S	L	L	L	L
CO 3	S	L	-	L	S	M	L	L	L
CO 4	S	L	L	L	M	M	L	L	L
CO 5	S	L	M	S	S	M	L	L	-

Semester IV	HETEROCYCLES , NATURAL PRODUCTS AND ANALYTICAL TECHNIQUES	Hours/Week: 6	
Core Course-10		Credits: 6	
Course Code 18PCHC41N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- know about the structural and synthetic aspects of Biomolecules
- gain knowledge on heterocyclic compounds and alkaloids
- comprehend the analytical and synthetic evidences about the structure of terpenoids and Steroids.
- get idea about CD and ORD curves
- expertise on chromatographic techniques

Semester IV	CHEMICAL KINETICS, SURFACE AND BIOPHYSICAL CHEMISTRY	Hours/Week: 6	
Core Course-11		Credits: 6	
Course Code 18PCHC42N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the basic concepts and theories of chemical kinetics.
- acquire knowledge about catalysis.
- comprehend the Biophysical and Supramolecular chemistry.
- derive advanced knowledge of Photo and Radiation Chemistry.
- apprehend the concepts of the fundamentals of surface chemis.

Semester IV	NANO AND GREEN CHEMISTRY	Hours/Week: 6	
DSEC -3		Credits: 5	
Course Code 18PCHE41N		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basics of nanochemistry
- comprehend the various techniques involved in the characterization of nanomaterials
- acquire knowledge about properties and applications of nanomaterials
- envision the importance of nanomaterials as nanobiosensors
- apprehend the principles of green chemistry
- synthesise compounds involving basic principles of green chemistry.

Semester IV	BIO-INORGANIC CHEMISTRY	Hours/Week: 6	
DSEC -3		Credits: 5	
Course Code 18PCHE42		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students shall be able to

- understand clearly the structural features and mechanism of biologically important inorganic compounds.
- comprehend the importance of various Corrin ring systems.
- know about the role of inorganic chemistry in biological system.
- comprehend about nitrogen fixation.
- have knowledge on the Chelation therapy.

M.Sc. Zoology

PROGRAMME SPECIFIC OUTCOMES

1. To learn the fundamental principles and their applications in science
2. To develop analytical and experimental thinking of students for their academic enhancement.
3. To enrich the application oriented learning in the field of research.
4. To obtain practical skills to cultivate economically important species in an effective manner.
5. To promote the students lateral thinking in all the disciplines of life science
6. To update the knowledge about reason techniques and methodologies in various fields of biology
7. To create awareness on entrepreneurship and self employment opportunities.
8. To understand the working mechanism and regulatory processes in animals along with their environmental interactions.
9. To provoke awareness on social issues and current scenario.

Semester III	GENETICS	Hours/Week: 6	
Core course-7		Credits: 5	
Course Code 18PZYC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- learn the principles of genetics
- know the importance of hereditary molecules in the field of biology
- understand the basic aspects of the flow of genetic information from DNA to proteins.
- apply the principles of extensions to Mendelian inheritance, including multiple allelism, gene interactions, and sex-linked transmission
- create awareness about human genetic disorders caused by gene mutations and chromosomal rearrangements
- comprehend the applications of genetics in various fields

Course Code 18PZYC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	L	-	-	S	-	L	M
CO 2	S	M	L	-	-	S	-	S	L
CO 3	M	L	-	-	-	L	-	M	-
CO 4	L	L	L	-	-	L	-	M	L
CO 5	M	L	L	-	-	M	-	S	S
CO6	S	L	S	-	L	S	L	M	S

Semester III	BIODIVERSITY AND CONSERVATION	Hours/Week: 6	
Core course-8		Credits: 5	
Course Code 18PZYC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- learn about the diversity of living things and its importance in the field of biology
- understand the conservation of biotic resources and its management
- Identify key threats to biodiversity
- articulate why society strives to conserve biodiversity.
- develop appropriate policy options for conserving biodiversity in different settings
- conduct basic conservation biology projects

Course Code 18PZYC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	-	M	L	-	S	S
CO 2	S	-	L	-	M	-	-	S	S
CO 3	S	L	S	-	L	-	-	S	S
CO 4	L	L	S	-	S	L	-	S	S
CO 5	L	-	-	-	-	-	-	S	S
CO 6	S	L	S	-	M	S	S	S	S

Semester III	BIOSTATISTICS AND BIOINFORMATICS	Hours/Week: 6	
Core Course-9		Credits: 5	
Course Code 18PZYC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- understand the statistical methods in collection, classification and interpretation of biological data.
- use statistical methods for analysis of biological data.
- gain knowledge of topics, algorithms, tools and methods in the field of Bioinformatics.
- know the important biological databases using bioinformatics software tools.
- find out bioinformatics concepts for analysing molecular data.
- apply bioinformatic methods associated with advanced sequence alignment

Course Code 18PZYC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	L	M	L	-	L
CO 2	S	L	S	-	L	L	L	-	-
CO 3	S	S	S	-	L	S	L	-	L
CO 4	M	M	S	-	L	S	S	-	-
CO 5	M	S	S	-	L	S	-	-	M
CO 6	M	S	M	-	-	S	-	-	S

Semester III	APICULTURE	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PZYN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- gain knowledge about social life of honeybees.
- understand the basic life cycle of the honeybee.
- know the value of bees and its by-products.
- acquire bee keeping management skills.
- Manage the beehives for honey production and pollination.
- acquire skill for employability and entrepreneurship.

Course Code 18PZYN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	S	-	L	S	S	M
CO 2	S	L	S	S	-	L	S	S	-
CO 3	M	L	S	S	L	M	S	S	L
CO 4	S	L	S	S	L	M	S	S	L
CO 5	M	-	S	S	-	M	S	S	-
CO 6	S	M	S	S	-	M	S	S	M

Semester IV	EVOLUTION	Hours/Week: 6	
Core course -10		Credits: 4	
Course Code 18PZYC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- get an idea of evolutionary trends and origin of species
- describe the different theories of the origin of life
- understand the evolutionary theory and concepts to address empirical and theoretical questions in evolutionary biology
- apprehend the ideas of Lamarckism and Darwinism and neo-Darwinian regarding evolution
- analyse the process of gradual changes over a long period of geological time
- explain the important processes, principles and concepts evolutionary biology.

Course Code 18PZYC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	L	-	-	-	M
CO 2	S	-	-	-	M	-	-	-	M
CO 3	S	L	-	-	L	-	-	L	M
CO 4	S	M	-	-	M	-	-	-	L
CO 5	L	-	-	-	L	-	-	L	S
CO 6	S	-	-	-	-	-	-	M	S

Semester IV	MICROBIOLOGY	Hours/Week: 6	
Core course -11		Credits: 4	
Course code 18PZYC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- cognise the culture techniques and maintenance of microorganisms
- know about the importance of microorganisms in various fields.
- recognize and describe the characteristics of important pathogens and spoilage microorganisms in foods.
- understand the role and significance of intrinsic and extrinsic factors on growth and response of microorganisms in foods.
- comprehend the mode of transmission, epidemiology and therefore modes of prophylaxis of the diseases
- know the impact of microbial processes in agricultural production

Course Code 18PZYC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	S	S	S	M	L	L
CO 2	S	S	S	S	M	S	M	-	-
CO 3	S	M	M	-	S	S	L	L	S
CO 4	S	M	L	L	M	S	–	M	L
CO 5	S	S	S	M	S	L	M	S	M
CO 6	S	S	M	S	S	M	M	M	M

Semester IV	MOLECULAR BIOLOGY	Hours/Week: 6	
Core course -12		Credits: 4	
Course code 18PZYC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- acquire the knowledge of the molecular basis of cell structure and its importance in the field of biology.
- know the significance of pathways and mechanisms in cell.
- describe the composition and structure of DNA, RNA and the basic steps of DNA replication and transcription.
- describe the composition and structure of protein and the basic steps of translation.
- analyse the various levels of gene regulation and protein function.
- perceive the regulation of gene

Course Code 18PZYC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	M	M	S	S	-	M	-
CO 2	S	S	S	S	S	M	-	M	-
CO 3	S	M	S	M	S	M	-	L	-
CO 4	S	S	M	S	M	L	-	M	-
CO 5	S	M	M	S	S	M	-	L	-
CO 6	S	M	M	S	M	S	-	M	-

Semester IV	SERICULTURE	Hours/Week: 6	
DSEC		Credits: 4	
Course code 18PZYE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- develop an expert manpower to handle the own sericulture units/ entrepreneurship/ Corporate sector units.
- understand and estimate the leaf production in a particular mulberry plot.
- apprehend the scientific knowledge about mulberry cultivation , silkworm rearing techniques to the students
- make the students to understand and identify the mulberry, silkworm diseases and pests.
- make them to learn all the commercial parameters of cocoon
- guide and give counseling to become entrepreneur

Course Code 18PZYE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	L	S	S	-	-
CO 2	S	L	S	S	L	S	S	L	-
CO 3	S	L	S	S	-	S	S	L	-
CO 4	S	-	S	S	L	L	S	S	-
CO 5	S	-	S	S	M	-	S	M	-
CO 6	S	-	S	S	M	-	S	S	-

Semester IV	BEEKEEPING	Hours/Week: 6	
DSEC-4		Credits: 4	
Course Code 18PZYE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- acquire knowledge about the colonial and social life of honeybees.
- understand the biology and culture methods of bees.
- know the value of bees and its by-products.
- develop skills for self-employment in Beekeeping and honey extraction.
- apply the knowledge on bee biology and management to the development of the beekeeping industry.
- evaluate beekeeping project for cost-effectiveness and sustainability.

Course Code 18PZYE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	S	-	-	S	S	L
CO 2	S	M	S	S	-	-	S	S	-
CO 3	S	L	S	S	-	-	S	-	L
CO 4	S	-	S	S	L	-	S	-	-
CO 5	S	L	S	S	-	-	S	L	-
CO 6	S	L	S	S	-	-	S	-	-

M.Sc. Biochemistry

PROGRAMME SPECIFIC OUTCOMES

1. Provide an advanced learning of core principles in the field of Biochemistry with appropriate skills and aptitude.
2. Apply the principles of Biochemistry to other subjects such as biotechnology, food science, nutrition, microbiology, genetics, molecular biology etc.
3. Produce professionals who can engage in clinical laboratories, research laboratories and work in community health sectors.
4. Provide basic and advanced understanding of Biochemistry principles both in theory and practical, which are required to clear many competitive exams that are conducted based on interdisciplinary knowledge and application skills such as UGC, NET, CSIR, ICMR, etc.
5. Acquire necessary knowledge and skills to undertake a career in research, either in industry or in an academic set up.
6. Apply the knowledge of experimental approaches to solve problems of chemical nature and will have an ability to extend that knowledge to find the solution to new problems.
7. Integrate and apply the techniques in Biophysics, Analytical biochemistry, Clinical biochemistry, Microbiology, Molecular biology, Basics in bioinformatics, Herbal medicine & Biostatistics.
8. Compare and contrast the breadth and depth of scientific knowledge in broad range of fields including Cell biology, Intermediary metabolism, Diagnostic Biochemistry, Pharmaceutical and Hormonal Biochemistry, Genetics, Nutritional Biochemistry, Immunology, Enzymology, Genetic engineering , Neurochemistry, Environmental Biochemistry, Microbial Biochemistry, Herbal medicine, Biostatistics and Nanotechnology.
9. Describe the biochemical basis of human diseases, protein structure and conformation, non-invasive diagnostics, biochemical pathway regulation and drug development and synthesize this knowledge and apply the same for multitude of laboratory applications.

Semester III	IMMUNOCHEMISTRY	Hours/Week: 6	
Core Course-1		Credits: 5	
Course Code 18PBCC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the cells and organs of immune system
- apprehend the immune mechanism
- impart knowledge about various microorganisms as antigens.
- Acquire knowledge on the genetics of Antibody
- recognize the vaccination and transplantation process
- create awareness on AIDS and tumour immunology.

Course Code 18PBCC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	S	S	S	M	L	S	S
CO 2	S	M	S	S	S	M	S	S	S
CO 3	S	S	S	S	M	M	S	S	S
CO 4	S	M	S	S	M	M	S	S	S
CO 5	S	S	S	S	S	M	S	S	S
CO 6	M	S	S	S	M	M	S	S	S

Semester III	BIOSTATISTICS	Hours/Week: 5	
Core Course-2		Credits: 4	
Course Code 18PBCC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop effective methods of data analysis and interpretation
- understand the statistical methodology for the evaluation of health risks in occupational cohorts.
- examine the general theory of data analysis and describing specific concepts as they apply to confidence intervals, effect sizes and hypothesis tests.
- prepare research material for publication.
- design studies and analyzing data from research problems
- determine appropriate sampling techniques, coordinate data collection procedures

Course Code 18PBCC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	L	S	S	M	S	S	S	S
CO 2	L	M	S	S	M	S	S	S	S
CO 3	L	L	S	S	M	S	S	S	S
CO 4	M	L	S	S	M	S	S	S	S
CO 5	L	L	S	S	M	S	S	S	S
CO 6	M	L	S	S	M	S	S	S	S

Semester III	CLINICAL BIOCHEMISTRY (BASICS)	Hours/Week: 5	
NMEC		Credits: 5	
Course Code 18PBCN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the diagnostic importance of urine and blood
- study the biochemistry of diseases
- apprehend the principle and application of instruments used for diagnosis
- understand the importance of cancer markers and its detection
- impart knowledge about different types of cancer
- build knowledge about hereditary disease

Course Code 18PBCN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	S	S	L	S	M	S	S
CO 2	L	S	S	S	L	S	M	S	S
CO 3	M	L	M	L	L	S	M	S	S
CO 4	M	S	S	S	L	S	M	S	S
CO 5	L	S	S	L	S	S	M	S	S
CO 6	L	S	S	L	S	S	M	S	S

Semester III	IMMUNOLOGY AND ADVANCED BIOCHEMISTRY LAB	Hours/Week: 3	
Core Practical		Credits: 6	
Course Code 18PBCC31P		Internal 40	External 60

Course Code 18PBCC31P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	S	S	M	S	S	S
CO 2	S	S	S	S	S	S	S	S	S
CO 3	S	S	S	S	M	S	S	S	S
CO 4	S	M	S	S	M	S	S	M	S
CO 5	S	S	S	S	S	S	S	S	S
CO 6	S	M	S	S	M	S	S	M	S
CO 7	S	S	S	S	M	S	S	S	S

Semester IV	ENVIRONMENTAL BIOCHEMISTRY	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18PBCC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- minimize the risks of pollutants and create high Value products.
- Understand biochemical effects of living things in relation to Environmental science and technology.
- comprehend the effects of various pollutants on ecosystem.
- impart knowledge on various pollution and the polluting agents.
- Create awareness on global warming and energy crisis.

Course Code 18PBCC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	S	S	S	M	L	L
CO 2	S	M	M	S	S	M	S	M	L
CO 3	S	M	S	S	S	M	M	M	S
CO 4	S	M	S	S	M	S	M	M	S
CO 5	S	M	S	S	M	S	M	M	S
CO 6	M	M	M	M	M	S	M	S	M

Semester IV	CLINICAL BIOCHEMISTRY	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18PBCC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the metabolic disorders of amino acid.
- impart knowledge about the diagnosis of kidney disorders.
- impart knowledge on diagnosis of blood disorders and CSF.
- comprehend the pathophysiology of reproductive disorders.
- apprehend the pathophysiology of digestive system.
- understand the biochemical aspects of respiratory system.

Course Code 18PBCC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	S	S	M	S	S	S	M
CO 2	L	S	S	S	S	S	S	S	S
CO 3	M	S	S	S	S	S	S	S	S
CO 4	L	S	S	S	S	S	S	S	S
CO 5	L	S	S	S	S	S	S	S	S
CO 6	M	S	S	S	S	S	S	S	S

Semester IV	DEVELOPMENTAL BIOLOGY AND GENETICS	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18PBCE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire the cellular basis of development.
- create awareness about eugenics.
- obtain knowledge in principles of Genetics.
- gain awareness about hereditary ailments and diseases
- elucidate the early development process of humans.

Course Code 18PBCE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	S	S	M	M	S	S	S
CO 2	M	L	M	S	M	L	M	M	M
CO 3	S	M	M	S	S	M	M	S	S
CO 4	S	M	M	S	S	S	M	S	S
CO 5	S	M	M	S	M	L	M	S	S
CO6	M	M	L	S	M	M	S	S	S

Semester IV	HERBAL MEDICINE	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 18PBCE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the Ayurvedic system of medicine
- apprehend the principles and method of preparation of siddha medicine
- create awareness about Homeopathy medicine
- gain knowledge in principles of Unani medicine
- create awareness about tribal medicine
- comprehend complimentary medicines.

Course Code 18PBCE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	S	M	S	S	S	M	S	L
CO 2	M	S	M	S	S	S	M	S	L
CO 3	L	S	S	M	S	M	S	S	M
CO 4	L	S	S	M	S	M	S	S	M
CO 5	L	S	S	M	S	M	S	S	L
CO 6	L	S	S	M	S	L	S	S	L

M.Sc Food Processing and Quality Control

PROGRAMME SPECIFIC OUTCOMES

The students of M.Sc Food Processing and Quality Control programme will be able to

1. acquire knowledge in Food Science, Dietetics, Processing of Food Produce, Food Microbiology, Functional Foods, Food Packaging, Bakery and Confectionary, Food Safety and Quality Control and Statistics and Computer Applications.
2. get systematic knowledge about the recent and advance techniques in Food Processing and Quality Control.
3. make use of the processing techniques to develop new food products by using functional ingredients and their byproducts to meet the increasing demand of the community.
4. acquire skills to adopt appropriate statistical tools to analyse data for the purpose of research.
5. meet the challenges in competitive examinations.
6. adopt leadership qualities and ethical responsibilities in academia, research organizations and industries.
7. obtain technical skills in handling of instruments and equipments in Food Processing industries.
8. acquire the skills needed for placement in academic institutions, food industries, hospitals and fitness centres.
9. improve entrepreneurial skills to become self-employed.

Semester: III	FOOD SAFETY AND QUALITY CONTROL	Hours/Week:6	
Core Course 7		Credits: 5	
Course Code 18PFPC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- familiar with the concept of food safety, importance, safe handling of various types of food and its products.
- get acquaint with the principles and methods of food quality control in food processing industries.
- acquire the knowledge and skills in detecting the common adulterants in food.
- obtain the technical skills in subjective and objective evaluation to standardize the food products.
- attain the knowledge in food regulations and standards at the national and international levels.
- get career opportunities in research station, quality control laboratories and food processing sectors

Course Code 18PFPC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	L	S	S	S	S	M
CO 2	S	S	S	M	S	S	S	S	M
CO 3	S	S	S	-	S	S	L	S	S
CO 4	S	S	S	L	S	S	S	S	S
CO 5	S	L	S	-	S	S	-	S	S
CO 6	S	S	S	M	S	S	S	S	-

Semester III	STATISTICS AND COMPUTER APPLICATIONS	Hours/Week:6	
Core Course 8		Credits: 5	
Course Code 18PFPC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- familiarize with the classification and tabulation of data, measures of central tendency, dispersion and frequency distribution.
- understand the concept and properties of parametric and non-parametric testing procedures and hypothesis testing.
- develop statistical skills in correlation, regression, factor and trend analysis to obtain results accurately.
- acquire the knowledge and skills in Ms office and SPSS package for analyzing the data.
- proficient in selecting the appropriate method for analyzing the data.
- empower in research skills to become data analyzer in research institutions.

Course Code 18PFPC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	S	S	M	-	S	-
CO 2	S	-	-	S	S	M	-	S	-
CO 3	S	-	-	S	S	M	-	S	-
CO 4	S	-	-	S	S	M	-	S	M
CO 5	S	-	-	S	S	M	-	S	L
CO 6	S	-	-	S	M	L	-	S	-

Semester III	FOOD BIOTECHNOLOGY	Hours/Week:6	
Core Course 9		Credits: 5	
Course Code 18PFPC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course students will be able to

- understand the concept, scope, benefits, risk factors and applications of biotechnology in food processing.
- know the technological aspects of single cell protein.
- comprehend the concept, types and steps involved in fermentation process.
- use fermentation technology for the production of commercial food products and enzymes.
- know the recent concerns in food biotechnology.
- grab career opportunities in food processing sectors.

Course Code 18PFPC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	S	-	S	M	-	S	L
CO 2	S	S	S	-	S	S	M	S	S
CO 3	S	S	S	-	S	S	M	S	S
CO 4	S	S	S	-	S	S	M	S	S
CO 5	S	S	S	-	S	S	L	S	S
CO 6	S	S	S	-	S	S	M	S	S

Semester III	NUTRITION AND HEALTH	Hours/Week:5	
NMEC		Credits: 4	
Course Code 18PFPN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course students will be able to

- understand the basic concept of food, nutrition and health.
- attain knowledge on sources, classification and functions of macro and micro nutrients.
- familiarize with the recommended dietary allowances for the different stages of growth.
- realize the need for nutrients at various stages of life span.
- know about the deficiency diseases related to nutrients.
- obtain skills in providing diet counseling to the members of the family and community.

Course Code 18PFPN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	L	-	M	S	-	L	-
CO 2	S	-	L	-	M	S	-	L	-
CO 3	S	-	-	-	L	L	-	L	-
CO 4	S	-	-	-	L	L	-	L	-
CO 5	S	-	-	-	L	L	-	L	-
CO 6	S	-	-	-	L	L	-	M	M

Semester IV	DISSERTATION	Hours/Week : 18	
Core course 11		Credits : 9	
Course Code 18PFPC41PR		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- gain first-hand knowledge and skills in developing new food products.
- familiarize with the physio – chemical properties, nutrient analysis and microbial analysis of the developed new food products.
- gain skill in doing research and writing the report.
- start self-employment ventures and grab opportunities in food processing industries.

Semester IV	FUNCTIONAL FOOD AND NUTRACEUTICALS	Hours/Week:6	
DSEC 3		Credits: 6	
Course Code 18PFPE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- trace the history of functional foods and nutraceuticals.
- understand the concept of functional foods, nutraceuticals, teleology, primary and secondary metabolites and mechanical actions of functional food.
- attain knowledge on various functional food groups and products.
- understand and assess the role of functional components from plant sources , animal sources and microbes in human health.
- realize the biological role of herbs in human health.
- develop critical thinking and scientific temper in developing innovative food products to promote holistic health.

Course Code 18PFPE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	S	-	S	S	-	S	S
CO 2	S	L	S	-	S	S	-	S	S
CO 3	S	L	S	-	S	S	-	S	S
CO 4	S	L	S	-	S	S	-	S	S
CO 5	S	L	S	-	S	S	-	S	S
CO 6	S	L	S	L	S	S	S	S	S

Semester IV	FOOD PACKAGING TECHNOLOGY	Hours/Week:6	
DSEC 3		Credits: 6	
Course Code 18PFPE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- comprehend the concept, need, functions and levels of packaging.
- gain knowledge and skills in selecting the packaging material and its accessories for packaging.
- proficient in packaging material and requirements for packaging various food products.
- familiar with the recent trends in different methods of packaging.
- acquire knowledge on government laws and regulations pertaining to packaging.
- get placement in food processing industries.

Course Code 18PFPE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	S	-	M	S	-	S	S
CO 2	S	M	S	-	M	S	L	S	S
CO 3	S	M	S	-	M	S	L	S	S
CO 4	S	M	S	-	M	S	-	S	S
CO 5	S	M	S	-	M	S	-	S	S
CO 6	S	M	S	-	M	S	L	S	S

M.Sc. Computer Science

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Acquisition of conceptual knowledge

PSO 2: Acquire basic learning, understanding and applying new ideas.

PSO 3: Inculcate the competence to analyze advantages and drawbacks of existing computer science methods.

PSO 4: Develop sound knowledge about recent tools and technologies.

PSO 5: Ability to transform original ideas and solutions culminating into modern, easy to apply solutions to adapt recent trends.

PSO 6: Renovate and create new technique to find novel solution for real world competence.

PSO 7: Familiarity and practical competence with a broad range of programming language and open source platforms.

PSO 8: Capability to explore knowledge in various domains to identify the research gaps.

PSO 9: Expertise to employ modern computer languages and environments in creating innovative career paths to be an entrepreneur, and a zest for higher studies.

Semester III	DATA MINING	Hours/Week: 6	
Core Course-11		Credits: 5	
Course Code 18PCSC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- learn the concept of data mining with detailed coverage of basic tasks.
- deal with data mining functionalities like classification & clustering.
- imbibe the concept of data warehouse architecture and design.
- perform analysis of data mining through various algorithms.
- practice data mining algorithms through WEKA.

Course Code 18PCSC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	-	-	-	-	-	L	L
CO 2	S	S	S	M	-	M	-	S	S
CO 3	S	S	-	-	-	-	-	-	-
CO 4	S	S	S	S	-	-	-	S	S
CO 5	-	-	S	-	S	-	S	S	

Semester III	ADVANCED JAVA PROGRAMMING	Hours/Week: 6	
Core Course-12		Credits: 5	
Course Code 18PCSC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- learn the concept of Database Connectivity in Java.
- gain enlightened ideas about the networking protocols and RMI.
- understand the fundamentals of Swing Controls.
- be familiar with Collections Framework.
- acquire the knowledge of JSP and Servlets.

Course Code 18PCSC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	S	-	M	S	-	S
CO 2	S	S	-	S	-		S	L	S
CO 3	S	S	-	-	-	M	S	-	S
CO 4	S	S	-	M	-	-	S	-	S
CO 5	S	S	-	S	-	-	S	L	S

Semester III	ADVANCED JAVA PROGRAMMING LAB	Hours/Week: 6	
Core Course-13		Credits: 3	
Course Code 18PCSC31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- develop Java programs on their own.
- manipulate with networking protocols.
- avail JDBC and ODBC resources.
- implement different data structures.
- use RMI effectively.
- work with java servlets and JSP.

Course Code 18PCSC31P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	S	-	-
CO 2	S	S	-	S	-	-	S	M	M
CO 3	S	S	-	S	-	-	S	M	M
CO 4	S	S	M	-	-	-	S	-	-
CO 5	S	S	-	S	M	M	S	-	-
CO 6	S	S	M	S	M	M	S	M	M

Semester III	ASP.NET USING C# LAB	Hours/Week: 6	
Core Course-14		Credits: 3	
Course Code 18PCSC32P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- get access to validation controls.
- be acquainted with Bulleted List, Image control, Tree view control and Site Map.
- create animation effects using AJAX.
- gain Knowledge about Database connectivity.
- generate Reports and Master Pages.

Course Code 18PCSC32P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	S	-	-	M	-	L
CO 2	S	S	-	S	-	-	S	-	M
CO 3	-	S	-	S	M	L	S	-	S
CO 4	S	S	-	S	-	-	M	-	S
CO 5	-	S	-	S	-	-	S	-	S

Semester III	WEB PROGRAMMING	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PCSN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- keep up to date with the concepts of Internet Basics.
- have idea on the concepts of Internet Browsers.
- comprehend the techniques of Web Designing.
- analyse the concepts and skillful usage of HTML.
- grasp the concepts of DHTML and Style Sheets.

Semester IV	R PROGRAMMING LAB	Hours/Week: 6	
Core Course-15		Credits: 3	
Course Code 18PCSC41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- understand the importance of R Programming.
- implement various Data Mining Algorithms in R.
- be proficient in various File format using R.
- gain the knowledge of dataset creation and usage.

Course Code 18PCSC41P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	S	-	-
CO 2	S	S	L	S	M	S	S	M	L
CO 3	S	S	-	-	-	-	S	-	-
CO 4	S	-	-	-	-	-	S	-	-
CO 5	S	S	L	M	-	M	S	-	-

Semester IV	DATA ANALYTICS	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PCSE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- gain fundamental knowledge about the data analysis.
- analyze the data with the help of R Program.
- understand the different types of tests to analyze the data.
- gain the knowledge of Graph Plotting.
- learn about different types of ANOVA and Regression.

Course Code 18PCSE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	-	-	M
CO 2	S	S	-	L	-	-	S	-	M
CO 3	S	S	L	-	-	-	S	-	M
CO 4	S	S	-	-	-	-	S	-	S
CO 5	S	S	L	L	-	-	S	M	S

Semester IV	SOFTWARE TESTING	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PCSE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- apply software testing knowledge and engineering methods.
- design and conduct a software test process for a software testing project.
- identify the needs of software test automation, define and develop a test tool to support test automation.
- use various communication methods and skills to communicate their practice-oriented software testing projects.
- have basic understanding and knowledge of contemporary issues in software testing, such as component-based software testing problems
- use software testing methods and modern software testing tools

Course Code 18PCSE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	L	-	-	-	-	-	-
CO 2	S	S	-	-	-	-	-	-	-
CO 3	S	S	-	-	L	-	-	S	S
CO 4	S	S	L	L	-	-	-	-	-
CO 5	S	S	-	-	-	-	-	S	S
CO 6	S	S	L	L	-	S	-	S	S

Semester IV	SOFTWARE PROJECT MANAGEMENT	Hours/Week: 6	
DSEC-3		Credits: 5	
Course Code 18PCSE43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- Keep up to date with the concepts of Software Project Management
- differentiate various process models, planning and risks.
- Identify the concepts of project approach, activity planning, monitoring and control.
- learn the UML case diagrams

Course Code 18PCSE43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	-	-	L
CO 2	S	S	-	-	-	-	-	-	-
CO 3	S	S	-	-	M	L	-	-	-
CO 4	S	S	L	-	-	-	-	L	L
CO 5	S	S	-	L	-	-	L	-	L

Semester IV	WEB TECHNOLOGY	Hours: 0
Extra Credit Paper		Credits: 3
Course Code 18PCSO41		External 100

COURSE OUTCOMES

On completion of the course, the learners will be able to

- identify the key components of HTML document
- design a website using CSS and HTML
- create interactive web pages using JavaScript
- access and process various elements of web page using DOM
- analyse web data using XML and perform translation using XSLT
- design Web Pages using AJAX
- innovate new animated web pages using SVG

Semester IV	STEGANOGRAPHY	Hours: 0
Extra Credit Paper		Credits: 3
Course Code 18PCSO42		External 100

COURSE OUTCOMES

On completion of the course, the learners will be able to

- understand the art of hiding of information in the ease of inoffensive objects or images.
- understand the building blocks of communication in digital media files and know the application of techniques in practice.
- Acquire the knowledge about Steganography tools.
- learn information theory, coding, signal estimation and detection, and statistical signal processing in Steganography.

Semester IV	SOFTWARE ENGINEERING	Hours: 0
Extra Credit Paper		Credits: 3
Course Code 18PCSO43		External 100

COURSE OUTCOMES

On completion of the course, the learners will be able to

- analyze different life cycle models.
- understand the concept of analysis modeling and specification.
- gain knowledge of architectural and detailed design methods.
- illustrate various implementation and testing strategies.
- analyze the test of verification and validation techniques.

M.Sc. Information Technology

PROGRAMME SPECIFIC OUTCOMES

- **PSO1: Acquiring the Knowledge of Information Technology:** Focusing on technological information by understanding the concepts and applications in the field of Information Technology like Web designing, Mobile application development, Big Data Analytics, Text Mining, Image Processing, Network, Open Source Platform, Distributed Systems and Communication Technologies.
- **PSO2: Analyze Real World Problems and Apply Solutions:** Examine the complex real world problems in Information Technology and find out the solution by applying the research literature.
- **PSO3: Modern Tools Usage:** Understand the technological developments in the modern design and development tools and implement them for a variety of applications.
- **PSO4: Design and Analysis:** Plan, Create, Analyze and design novel products and technologies for software based problems by extending their knowledge in specific areas of interest in academia and the industry.
- **PSO5: Emerge as a Researcher:** Develop knowledge of scientific theories and methods, to get awareness in the field of research.
- **PSO6: Interdisciplinary Project Management:** Inculcate multidisciplinary knowledge through projects and industrial training, which provides sustainable competitive edge in Research & Development.
- **PSO7: Career development:** Acquire technical knowledge in diverse areas of Information Technology for becoming a successful entrepreneur in various fields.
- **PSO8: Developing Project Skills:** Comprehend the knowledge of Software Engineering and management principles and apply it to manage projects in multidisciplinary environments.
- **PSO9: Life Long Learning:** Recognize the need for life-long learning in the broadest context of technological change.

Semester III	OPEN SOURCE TECHNOLOGY	Hours/Week: 6	
Core Course-7		Credits: 5	
Course Code 18PITC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with basic building blocks, Flow Control and Functions in PHP.
- know about PHP Arrays, Objects and Date & Time Functions.
- practice Form Validation using Advanced Validation Methods.
- gain knowledge on working in files and directories.
- earn skill set to develop advanced web applications those are efficient and secure.
- learn to use both PHP and MySQL to Manage Databases.

Course Code 18PITC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	M	S	-	M	S	S	S
CO 2	S	L	M	S	-	M	S	S	S
CO 3	S	M	M	S	L	S	S	S	S
CO 4	S	M		S	-	S	S	S	S
CO 5	S	S	M	S	L	S	S	S	S
CO 6	S	S	M	S	M	S	S	S	S

Semester III	FUNDAMENTALS OF INFORMATION TECHNOLOGY	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PITN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- study about Basics of Computers.
- get knowledge about Input / Output devices.
- learn about the basics of computer networks.
- understand the intranet concepts.
- know about e-commerce
- implementation of computers in business and industries

Course Code 18PITN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	L	-	-	L	L	-	L	L
CO 2	L	L	-	-	L	L	-	L	L
CO 3	S	L	-	-	L	L	-	L	L
CO 4	S	L	-	-	L	L	-	L	L
CO 5	L	L	-	-	L	L	-	L	L
CO 6	L	L	-	-	L	L	-	L	L

Semester IV	BIG DATA ANALYTICS	Hours/Week: 6	
DSEC-4		Credits: 5	
Course Code 18PITE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be exposed to big data
- learn the different ways of Data Analysis
- be familiar with data streams
- understand the impact of big data for business decisions
- master the use of the R interactive environment
- explore and understand how to use the R documentation

Course Code 18PITE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	S	-	L	S	S
CO 2	L	-	-	S	S	M	S	S	S
CO 3	M	M	S	M	S	-	-	S	S
CO 4	S	M	S	S	S	S	M	S	S
CO 5	S	L	S	S	M	M	S	S	S

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PROGRAMME SPECIFIC OUTCOMES

The students will be

PSO1 - excel as intrapreneurs with imparted knowledge and imbibed skill in management.

PSO2- serve as Financial Consultant, Tax Adviser and Accountant and assess the income-tax Liability of self and others.

PSO3 - apply the principles of Global Marketing, Services Marketing in commercial activities.

PSO4 - take up or get through SET/NET exams and other competitive exams with ease.

PSO5 - qualify themselves for education programme in Commerce.

PSO6 - complete professional courses like ACS, ICWA, ICMA and CA successfully.

PSO7 - pursue research programme in all areas of Commerce.

PSO8 - apply technology in Banking, Accounting, Relationship Management and Data Analysis.

PSO9 - create financial awareness on Tax payment, Tax filing, accounting standards and cyber activities.

Semester III	ADVANCED CORPORATE ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- acquire knowledge on the preparation of Holding Company Accounts.
- develop the skill in the preparation of Banking Company Accounts.
- enrich their knowledge in preparation of Life Insurance and General Insurance Company Accounts.
- know about the accounting for Price Level Changes in Public Utility Concerns.
- familiarise with the methods of preparation of Human Resources Accounting.
- understand the valuation of investments using Investment Accounts.

Course Code 18PCOC31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	S	M	S	L	S	S	S	S
CO2	M	S	S	S	L	S	S	S	S
CO3	S	S	S	S	L	S	S	S	S
CO4	M	S	S	S	L	S	S	S	S
CO5	S	S	S	S	L	S	S	S	S
CO6	M	S	S	S	L	S	S	S	S

Semester III	CUSTOMER RELATIONSHIP MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the nature and importance of Customer Relationship Management.
- understand the effectiveness in acquisition of customers.
- get knowledge about Customer Interaction Management and Electronic Data Interchange.
- familiarise with e-CRM and the future of e-CRM.
- know the importance of implementing CRM.
- understand the Enterprise Resource Planning(ERP)

Course Code 18PCOC32	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	M	S	L	L	L	S	S	M
CO2	S	S	S	-	-	L	S	S	S
CO3	S	S	S	-	-	-	S	S	S
CO4	S	M	S	-	-	-	M	S	S
CO5	S	M	S	-	-	-	M	S	S
CO6	S	S	S	-	-	-	S	S	S

Semester III	DIRECT TAXES - PRINCIPLES AND PROCEDURES	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the concepts related to income tax.
- understand the treatment of Agricultural income.
- determine the residential status of assessee.
- familiarise with the provisions of computation of taxable income under head of salary and house property.
- compute the tax liability under the head of business income and capital gain.
- know the various available deductions from Gross Total income

Course Code 18PCOC33	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	L	S	S	S	S	S	M	L	L
CO2	L	S	L	S	L	S	S	L	L
CO3	L	S	L	S	L	S	S	L	L
CO4	M	S	S	S	L	S	M	L	M
CO5	M	S	L	S	L	S	M	L	M
CO6	M	S	L	S	L	S	M	L	M

Semester III	RESEARCH METHODS IN COMMERCE	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 5	
Course Code 18PCOE31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- Design the study of any research topic.
- estimate the sample size.
- know about the research methods.
- familiarise with sources of data.
- know the technique used for testing hypothesis.
- prepare for the effective presentation of the project report.

Course Code 18PCOE31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	L	-	S	S	M	L	S	M	-
CO2	L	-	S	S	M	M	S	M	-
CO3	L	-	M	S	M	M	S	M	-
CO4	M	M	S	S	M	M	S	S	-
CO5	L	-	M	S	-	M	S	S	-
CO6	M	M	S	S	M	S	S	S	S

Semester III	MARKETING MANAGEMENT	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 5	
Course Code 18PCOE32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand and distinguish the concepts of marketing and basis of market segmentation
- familiarise with the process of marketing research
- know about the stages of buying process
- analyse new product development process and stages in product life cycle
- recognize and differentiate different methods of pricing
- identify the channels of distribution and types of promotion mix

Course Code 18PCOE32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	S	M	M	M	S	S	-
CO 2	S	-	S	M	M	M	S	L	S
CO 3	S	M	S	S	S	M	S	M	S
CO 4	S	M	S	S	L	-	S	L	S
CO 5	S	M	S	S	S	M	S	L	S
CO 6	S	-	S	L	L	S	S	M	S

Semester: III	TAXATION CONCEPTS AND ASSESSMENT	Hours/Week: 6	
Non Major Elective Course		Credits: 4	
Course Code: 18PCON31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the basic concepts in income tax
- familiarise with various heads of income
- find out the residential status of an individual
- compute the income under the heads salary and house property
- develop the skill of assessing income tax liability of an individual
- identify and fill up the income tax return forms for an individual

Course Code 18PCON31	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	M	S	L	S	L	M	S
CO2	M	S	M	S	L	S	L	M	S
CO3	M	S	M	S	L	M	L	M	S
CO4	S	S	M	S	L	S	L	S	S
CO5	S	S	M	S	L	M	S	S	S
CO6	S	S	M	S	L	S	S	S	S

Semester: IV	FINANCIAL MANAGEMENT	Hours/Week: 6	
Core Paper		Credits: 5	
Course code: 18PCOC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about financial management and financial statements.
- understand the time valuation concepts of money.
- apply the technique of ratio analysis to take financial decisions.
- develop the skill of preparation of capital budgets.
- make capital structure decisions applying the cost of capital.
- analyse working capital requirements and working capital management.

Course Code 18PCOC41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	-	S	S	S	S	M	S
CO2	M	S	-	S	L	S	S	S	S
CO3	S	S	-	-	L	S	S	S	S
CO4	S	S	-	S	S	S	S	M	S
CO5	S	S	-	S	S	S	S	L	S
CO6	S	S	-	S	L	S	M	M	S

Semester IV	PORTFOLIO MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the difference between investment, speculation and gambling
- know about industry analysis and stages of industry life cycle
- be thorough with different theories of technical analysis
- know about different kinds of risks and relationship between risk and return
- recognize the theories of portfolio management
- evaluate the performance of portfolio by using Sharpe, Treynor & Jensen Performance Index.

Course Code 18PCOC42	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	S	M	L	M	M	M	S
CO2	S	M	S	M	L	M	M	S	S
CO3	S	S	S	M	L	M	-	S	S
CO4	S	S	S	L	L	L	S	S	S
CO5	S	M	M	M	L	L	M	M	S
CO6	S	M	M	M	L	L	S	M	S

Semester IV	TAX ASSESSMENT AND PLANNING	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about how to compute the taxable income of Individual and HUF.
- clarify the difference in the assessments of firms- u/s 184, u/s 185 and company.
- understand the procedure for filing of return and due date for filing.
- differentiate various methods of collecting tax.
- realise the strategies for tax planning.
- get clear knowledge about the procedure for e-filing of income tax return

Course Code 18PCOC43	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	L	S	L	S	L	S	L	L	S
CO2	L	S	L	S	L	S	L	L	S
CO3	M	S	L	S	L	S	L	S	S
CO4	L	S	S	S	L	S	S	M	S
CO5	S	S	S	S	L	S	S	S	S
CO6	S	S	M	S	L	S	L	S	S

Semester IV	BANKING TECHNOLOGY	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 18PCOC44		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- introduce e-banking technologies to the learners
- know about EPS
- avail Electronic Fund Transfer
- get clear knowledge about Electronic Clearing System
- understand the impact of IT on Banking Sector
- realise Cyber issues in Online Banking

Course Code 18PCOC44	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	M	M	S	S	S	M	S	S	M
CO2	M	L	S	S	M	-	S	S	S
CO3	M	L	S	S	M	-	S	S	S
CO4	S	L	L	S	M	-	S	S	L
CO5	S	S	S	S	L	-	S	S	S
CO6	S	S	S	S	M	-	S	S	S

Semester IV	ELECTRONIC PRACTICES IN COMMERCE	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 5	
Course Code 18PCOE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- familiarise with E-Commerce applications
- know about the driving forces of E-Commerce
- understand the strategies of web advertisement
- realise the procedure for online transactions
- understand the procedure for receiving and sending E-mail
- know about the creation of web pages by using HTML tags

Course Code 18PCOE41	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	S	S	-	M	-	S	S	S
CO2	S	S	S	-	M	-	S	S	S
CO3	S	S	S	M	M	M	S	S	S
CO4	S	S	S	-	-	-	S	S	S
CO5	S	S	S	M	M	M	S	S	S
CO6	S	S	S	M	-	-	S	S	S

Semester IV	STRATEGIC MANAGEMENT	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 5	
Course Code 18PCOE42		Internal 40	External 60

COURSE OUTCOMES





On completion of the course, the students will be able to

- know about the evolution of strategy and features of strategic management.
- familiarise with strategic management elements and role of strategists.
- analyse the factors influencing strategic management and role of internal and external environment influencing strategies.
- understand and distinguish the different kinds of strategies.
- know about BCG portfolio matrix and General Electric Spotlight strategy.
- be thorough with the strategy implementation and evaluation.

Course Code 18PCOE42	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	S	-	M	S	L	M	L	M	M
CO2	S	-	L	L	-	L	-	-	L
CO3	M	-	L	L	-	L	M	S	M
CO4	M	-	L	L	L	M	M	M	M
CO5	L	-	-	S	-	L	-	-	-
CO6	S	-	S	M	-	L	M	L	M

M.C.A

PROGRAMME SPECIFIC OUTCOMES

-  Apply knowledge of computing fundamentals, computing specialization and domain knowledge for the abstraction and conceptualization of computing models from defined problems and requirements.
-  Analyze, design, develop, test and maintain the software applications with newest computing tools and technologies.
-  Recognize the social, professional, cultural and ethical issues involved in the use of computer technology and give them due consideration in developing software systems.
-  Assess the need for innovation and initiate the process through entrepreneurship.

Semester III	ADVANCED DATA STRUCTURES	Hours/Week: 5	
Core Course-10		Credits: 5	
Course Code 18PCAC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with the tree data structures.
- understand graphs and Applications.
- acquire knowledge on indexing
- learn multidimensional data structures.
- know special data structure.
- acquire knowledge on image data structure.

Course Code 18PCAC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	-	-	-	-	-	-
CO 2	-	M	-	-	-	-	-	-	-
CO 3	L	-	-	-	-	-	-	-	-
CO 4	-	-	-	-	M	-	-	-	-
CO 5	-	L	-	-	L	-	-	-	-
CO 6	-	-	-	-	L	-	-	-	-

Semester III	OPEN SOURCE SOFTWARE	Hours/Week: 5	
Core Course-11		Credits: 5	
Course Code 18PCAC33		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with basic building blocks, Flow Control and Functions in PHP.
- know PHP Arrays, Objects and Date & Time Functions.
- do Form Validation using Advanced Validation Methods.
- earn skill set to develop advanced web applications.
- learn to use both PHP and MySQL to manage Databases.
- write PHP programs for real time applications

Course Code 18PCAC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	L	-	-	M	-	-
CO 2	-	-	M	-	-	S	-	S	-
CO 3	-	L	-	-	S	-	-	M	-
CO 4	S	-	-	-	-	S	-	-	M
CO 5	-	S	-	-	M	-	L	-	-
CO 6	-	-	S	-	L	-	-	M	-
CO 7	M	-	L	-	-	S	-	-	-

Semester III	ADVANCED DATA STRUCTURES USING C++ LAB	Hours/Week: 5	
CorePractical-5		Credits: 3	
Course Code 18PCAC31P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop program to implement Binary tree data structure.
- efficiently implement Binary search tree.
- efficiently implement Height balanced tree.
- represent and traverse Graph data structure.
- design program for tree and graph applications.
- choose an appropriate algorithm for problem solving.

Course Code 18PCAC31P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	-	-	-	-	-	-
CO 2	-	L	-	-	-	-	-	-	-
CO 3	-	-	L	-	-	-	-	-	-
CO 4	-	M	-	L	-	-	-	-	-
CO 5	-	-	-	-	-	L	-	-	-
CO 6	-	S	-	-	-	L	-	-	-

Semester III	OPEN SOURCE SOFTWARE LAB	Hours/Week: 5	
CorePractical-6		Credits: 3	
Course Code 18PCAC32P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- study the concepts of PHP tags
- know about PHP Arrays, String and Date & Time Functions.
- learn about Object Oriented Programming Concepts in PHP.
- learn about Form Validation using Advanced Validation Methods.
- develop advanced web applications programs using PHP.
- learn to use both PHP and MySQL to Manage Databases.
- to know about how to write PHP programs for real time application

Course Code 18PCAC32P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	S	-	-	-	-	M	-	-
CO 2	-	S	M	-	-	-	-	-	-
CO 3	-	-	-	-	S	-	-	M	-
CO 4	-	S	-	-	-	-	-	-	-
CO 5	-	S	-	M	-	-	-	-	-
CO 6	-	-	S	-	-	-	M	-	-
CO 7	-	-	S	-	-	S	-	-	-

Semester III	PRINCIPLES OF INFORMATION TECHNOLOGY	Hours/Week: 5	
NMEC		Credits: 4	
Course Code 18PCAN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the basics of computers.
- be familiar with the different number systems.
- know the functions of memory & its categories
- gain knowledge on software and operating systems
- have good knowledge on networks and its types & components
- know more information about email & intranet

Course Code 18PCAN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	-	-	-
CO 2	M	-	-	M	-	L	-	-	-
CO 3	M	-	-	-	-	L	-	-	-
CO 4	M	-	-	L	-	-	-	-	-
CO 5	M	-	-	-	-	-	-	-	-
CO 6	S	-	-	L	-	-	L	-	-

Semester IV	BIG DATA ANALYTICS	Hours/Week: 5	
Core Course-12		Credits: 5	
Course Code 18PCAC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand tools and techniques which aid the specification, design and implementation of a Big Data Analytics.
- get an idea about the Big Data Fundamentals, evolution of Big Data and its characteristics and Hadoop.
- learn MapReduce and HBase fundamentals.
- know machine learning techniques and to analyze and extract useful information from complex data stores about Big Data Analytics.
- get knowledge on Social Media analytics.
- make an understanding about Mobile Analytics.
-

Course Code 18PCAC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	M	-	-	L	-	-	S	-
CO 2	-	S	-	-	M	-	-	S	-
CO 3	-	S	-	-	M	-	-	M	-
CO 4	-	M	L	-	-	-	-	M	-
CO 5	-	M	-	-	-	-	-	S	M
CO 6	-	M	-	-		-	-	M	L

Semester IV	ADVANCED JAVA PROGRAMMING	Hours/Week: 5	
Core Course-13		Credits: 5	
Course Code 18PCAC42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get the overview of Database Connectivity through JDBC.
- get an idea about building applications using Databases.
- do web application development with Servlets and JSP.
- know dynamic web page creation using AJAX.
- get knowledge about Model-View-Controller through Struts.
- apply building struts applications.

Course Code 18PCAC42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	M	-	-	-	-	-
CO 2	S	M	-	-	-	-	-	-	L
CO 3	M	S	-	-	L	-	-	-	-
CO 4	M	S	-	-	M	-	-	-	-
CO 5	S	M	-	-	-	-	-	-	M
CO 6	M	S	-	-	-	-	-	-	L

Semester IV	DISTRIBUTED DATABASES	Hours/Week: 5	
Core Course-14		Credits: 4	
Course Code 18PCAC43		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the architecture of Distributed Databases.
- get an idea about levels of Distribution transparency.
- understand the design of Distributed database.
- gain knowledge on Optimization of Access Strategies.
- understand Transaction Management, Concurrency Control and Reliability.
- acquire knowledge about Distributed Databases Systems.

Course Code 18PCAC43	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	-	M	-	S	-	-	-	-	M
CO 2	M	M	-	M	-	-	-	-	-
CO 3	L	M	-	M	-	-	-	-	-
CO 4	M	-	-	-	L	-	-	-	M
CO 5	M	-	-	-	M	M	-	-	-
CO 6	-	-	-	-	L	-	L	-	M
CO 7	S	-	M	M	-	-	-	M	-

Semester IV	R PROGRAMMING LAB	Hours/Week: 5	
CorePractical-7		Credits: 3	
Course Code 18PCAC41P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- write programs using built-in functions
- implement programs to produce graphs
- have an understanding to write programs to create simple Histogram
- write programs to import data from various files
- write programs using dataset
- write programs implementing simple and multiple linear regression

Course Code 18PCAC41P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	-	-	-	-
CO 2	S	-	-	-	-	-	-	-	-
CO 3	S	M	-	-	-	-	-	-	-
CO 4	S	M	-	-	-	-	-	-	-
CO 5	S	S	-	M	-	-	-	S	M
CO 6	S	S	-	M	-	-	-	S	S

Semester IV	ADVANCED JAVA PROGRAMMING LAB	Hours/Week: 5	
CorePractical-8		Credits: 3	
Course Code 18PCAC42P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- write Java programs connecting Databases
- have a understanding about writing programs in Servlets
- write to create server side programs using JSP
- implement programs using JSTL
- write programs implementing AJAX
- write programs in struts

Course Code 18PCAC42P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	-	-	-	-	-
CO 2	M	M	-	-	L	-	-	-	-
CO 3	M	M	-	-	M	-	-	-	-
CO 4	M	M	-	-	M	-	-	S	-
CO 5	M	M	-	-	M	-	M	S	-
CO 6	M	M	-	-	M	-	-	S	-

Semester IV	COMPUTER SECURITY	Hours/Week: 5	
DSEC-1		Credits: 5	
Course Code 18PCAE41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- have a good knowledge about computer security & its requirements
- comprehend cryptography & program security
- apply malicious and nonmalicious programs
- know the details of general purpose and trusted operating systems and their security
- know the requirements and methods of protecting databases
- acquire skill on security in database and networks

Course Code 18PCAE41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	L	-	L	-	-	L	-	-
CO 2	M	M	L	L	L	-	M	-	-
CO 3	L	-	-	L	M	-	-	-	-
CO 4	-	M	L	L	L	-	-	-	-
CO 5	M	-	L	-	M	-	-	-	-
CO 6	M	L	L	-	M	-	-	L	-
CO 7	S	L	-	L	-	-	L	-	-

Semester IV	EMBEDDED SYSTEMS AND REAL TIME OPERATING SYSTEM	Hours/Week: 5	
DSEC-1		Credits: 5	
Course Code 18PCAE42		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know the Hardware fundamentals of the Embedded systems
- understand Interrupts, Microcontroller Architecture
- gain knowledge about Real Time Operating system architecture
- know on Operating system services
- use Development tools of Embedded system
- design Embedded system

Course code 18PCAE42	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	-	-	-	-	-
CO 2	S	M	-	-	-	-	-	-	-
CO 3	S	S	-	-	-	-	-	-	-
CO 4	S	-	M	M	M	-	-	M	-
CO 5	S	S	-	-	-	-	-	M	-
CO 6	S	-	-	-	-	-	-	M	-

Semester V	MOBILE COMPUTING	Hours/Week: 5	
Core Course-		Credits: 5	
Course Code 18PCAC51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- get access to the concepts of Mobile Market and Mobile Architecture and Applications.
- learn the concept of Mobile Design.
- understand Mobile Web Development.
- learn Android Programming, Activities and Intents.
- acquire the knowledge of User Interface and Screen Interface.
- learn to display Pictures, Menus with Views and Data Persistence.

Course Code 18PCAC51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	-	-	-	-	-	-
CO 2	M	S	-	-	-	-	-	-	M
CO 3	-	S	-	M	L	-	-	-	M
CO 4	L	S	-	-	M	-	-	-	M
CO 5	L	S	-	-	-	-	-	-	M
CO 6	-	S	-	-	-	-	M	-	M

Semester V	DIGITAL IMAGE PROCESSING	Hours/Week: 5	
Core Course-16		Credits: 4	
Course Code 18PCAC52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- grasp the theories of image fundamentals and mathematical transforms necessary for image processing.
- get knowledge on image processing operations.
- know on image enhancement techniques .
- understand image restoration and image compression techniques.
- gain knowledge of image segmentation and color image models.

Course Code 18PCAC52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-		-	-	-	-
CO 2	M	M	-	-	L	-	-	-	-
CO 3	M	M	-	-	M	-	-	-	-
CO 4	M	M	-	-	M	-	-	S	-
CO 5	M	M	-	-	M	-	M	S	-
CO 6	M	M	-	-	M	-	-	S	-

Semester V	MACHINE LEARNING	Hours/Week: 5	
Core Course-17		Credits: 4	
Course Code 18PCAC53		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- learn the basics of Learning System.
- understand the concept of Decision Tree Learning and to solve problems using Artificial Neural Network.
- make the skillful use of Bayes Theorem and algorithm.
- know about Instance based learning and Genetic algorithms.
- become proficient in Analytical learning and Reinforcement learning.

Course Code 18PCAC53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	-	-	-	-	L	-	-	M
CO 2	-	S	M	-	-	-	-	S	-
CO 3	-	S	-	L	-	-	-	M	-
CO 4	-	-	M	-	-	S	-	-	S
CO 5	-	S	-	-	M	-	L	-	-
CO 6	-	-	S	-	L	-	-	M	-
CO 7	-	M	L	-	-	-	-	-	S

Semester V	MOBILE APPS DEVELOPMENT LAB	Hours/Week: 5	
Core Practical-9		Credits: 3	
Course Code 18PCAC51P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop applications using user interface controls
- implement list view and spinner controls
- create applications using built-in functions
- have an understanding to develop applications using Menu View
- use databases in Android Applications

Course Code 18PCAC51P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	M	-	-	-	-	-	-	-
CO 2	M	S	-	-	-	-	-	-	M
CO 3	-	S	-	M	L	-	-	-	M
CO 4	L	S	-	-	M	-	-	-	M
CO 5	L	S	-	-	-	-	-	-	M
CO 6	-	S	-	-	-	-	M	-	M

Semester V	DIGITAL IMAGE PROCESSING LAB	Hours/Week: 5	
Core Practical-		Credits: 3	
Course Code 18PCAC52P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- be familiar with basic image processing commands available in MATLAB.
- perform arithmetic and logical operations using images.
- obtain histogram of an image.
- perform geometric transformation of an image.
- enhance images using various filters.
- segment region of interest from an image.

Course Code 18PCAC52P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	S	-	-	M	-	-	-	-
CO 2	S	S	-	-	-	-	-	-	-
CO 3	S	S	-	-	-	-	-	M	-
CO 4	S	S	-	-	M	-	-	M	-
CO 5	S	S	-	-	M	-	-	M	-
CO 6	S	S	-	-	-	-	-	-	-

Semester V	COMPILER DESIGN	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 18PCAE51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know about the need of compilers and translators.
- learn the structure of a compiler in detail.
- understand the role of lexical analyzer and its design.
- learn the syntactic specification of programming languages and parsing techniques.
- acquire the knowledge of syntax-directed translation, symbol tables, error detection and recovery.
- grasp the principle sources of code optimization and its generation.

Course Code 18PCAE51	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	M	M	-	L	-	-	-	-	-
CO 2	M	L	-	-	-	-	-	-	-
CO 3	M	-	M	-	-	-	-	-	-
CO 4	-	M	-	M	-	-	-	L	-
CO 5	-	M	-	-	-	-	-	L	-
CO 6	S	-	-	-	M	-	-	-	-
CO 7	-	S	-	-	M	-	-	M	

Semester V	PATTERN RECOGNITION	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 18PCAE52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- become familiar with pattern classifier.
- understand the concept of unsupervised classification procedures.
- get familiarized with structural pattern recognition.
- gain knowledge on feature extraction and selection.
- Keep up to date knowledge in pattern recognition.

Course Code 18PCAE52	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	M	M	-	-	-	M	-
CO 2	S	M	M	M	-	-	M	-	-
CO 3	S	S	-	-	-	-	M	-	-
CO 4	S	-	M	M	M	-	-	M	-
CO 5	S	S	-	-	-	-	M	M	-
CO 6	S	-	-	-	-	-	M	M	-

Semester V	CLOUD COMPUTING	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 18PCAE53		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamentals of cloud computing.
- learn the advanced techniques in cloud computing.
- understand the cloud services and various devices used for storage.
- gain knowledge on security in cloud environment.
- implement online analytical processing (OLAP).

Course Code 18PCAE53	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	L	S	S	-	L	L	L	-	M
CO 2	-	L	L	L	-	-	M	-	M
CO 3	-	M	M	M	-	-	M	-	M
CO 4	M	M	M	M	-	-	M	-	M
CO 5	L	L	L	M	-	-	M	-	M

Semester VI	PYTHON PROGRAMMING	Hours/Week: 6	
Core Course-18		Credits: 4	
Course Code 18PCAC61		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- know Python basis and programming.
- learn control structures and strings in Python.
- study about handling of recursion function in Python.
- represent compound data using Python lists, tuples, dictionaries.
- read and write data from/to files in Python Programs
- Process images using Python.

Course Code 18PCAC61	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	M	-	-	-	-
CO 2	M	S	-	-	-	-	-	-	L
CO 3	S	M	L	-	-	-	-	-	-
CO 4	M	S	-	M	-	-	-	-	-
CO 5	S	M	-	-	-	-	-	-	L
CO 6	M	S	-	-	-	-	-	-	M
CO 7	M	M	-	-	-	-	-	M	-

Semester VI	PYTHON PROGRAMMING LAB	Hours/Week: 6	
CorePractical-11		Credits: 3	
Course Code 18PCAC61P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop programs using control structures and loops.
- write programs using built-in functions.
- implement programs using list and sets.
- have an understanding to write programs using dictionary and tuples.
- be familiar with writing programs using files.
- implement programs using images.

Course Code 18PCAC61P	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO 1	S	M	-	-	M	-	-	-	-
CO 2	M	S	-	-	-	-	-	-	L
CO 3	S	M	L	-	-	-	-	-	-
CO 4	M	S	-	M	-	-	-	-	-
CO 5	S	M	-	-	-	-	-	-	L
CO 6	M	S	-	-	-	-	-	-	M

Semester VI	PROJECT WORK AND VIVA-VOCE (INDUSTRY/ INSTITUTIONAL BASED)	Hours/Week: 18	
Core Project-1		Credits: 9	
Course Code 18PCAC61PR		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop the ability to solve a specific problem by analyzing its identification and literature review.
- be familiar with the state of art in their respective fields.
- apply the concepts learnt to relevant research problems or practical applications

Semester VI	ONLINE CERTIFICATION COURSE	Hours/Week: -	
Extra Credit Course		Credit: 1	
Course Code 18PCACC1		Internal -	External -

COURSE OUTCOMES





On completion of the course, the students will be able to

- pursue a suitable higher education programme.
- explore new areas of interest.
- learn in greater depth the subjects they wish to master.
- become employable in the industry .
- bring out the self-learning initiative.

M.B.A

PROGRAMME SPECIFIC OUTCOMES

The Students will

-  be placed as managers in various functional teams in corporate and discharge the responsibilities effectively
-  be able to establish and run entrepreneurial ventures successfully
-  get focused on professional ethics, values and the holistic welfare of the society.
-  be able to undertake doctoral research and contribute to academic knowledge in the contemporary areas of management.

Semester III	MANAGEMENT INFORMATION SYSTEM	Hours/Week: 5	
Core Course		Credits: 3	
Course Code 18PBAC31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- cope up with the contemporary management information system.
- interpret new developments in information systems.
- grasp the components of database management system.
- apply the various information system concepts in the organization.
- analyze the various types of information and segregate it
- build knowledge on artificial intelligence

Course Code 18PBAC31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	S	M	S	S	S
CO 3	S	S	S	M	S	S	S
CO 4	S	S	M	S	S	S	S
CO 5	S	S	M	M	S	S	S
CO 6	S	S	M	M	S	S	S

Semester III	RESEARCH METHODOLOGY	Hours/Week: 4	
Core Course		Credits: 3	
Course Code 18PBAC32		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- Understand some basic concepts of research and its methodologies
- identify appropriate research topics
- select and define appropriate research problem and parameters
- prepare a project proposal (to undertake a project)
- organize and conduct research (advanced project) in a more appropriate manner
- write a research report and thesis

Course Code 18PBAC32	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	L	S	-	-	L
CO 2	-	L	-	S	M	S	S
CO 3	L	M	-	S	--	S	L
CO 4	-	S	L	S	-	L	M
CO 5	-	L	-	S	M	-	M
CO 6	-	S	-	S	-	-	L

Semester III	BANKING AND INSURANCE	Hours/Week: 5	
Core Course		Credits: 3	
Course Code 18PBAC33		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

- analyze the different kinds of deposit schemes.
- identify the banker's rights.
- assess the various types of negotiable instruments available.
- understand the methods and procedures used in endorsement.
- comprehend insurance agent's role in society and conversely society's impact on insurance.
- recognize how different insurance schemes offer benefits to the insurer.

Course Code 18PBAC33	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	S	-	L	L
CO 2	S	S	-	S	-	-	L
CO 3	S	S	-	S	-	-	L
CO 4	S	S	-	S	-	-	L
CO 5	-	S	S	M	-	S	M
CO 6	-	S	M	S	-	M	-

Semester III	NON MAJOR ELECTIVE ENTREPRENEURSHIP	Hours/Week: 6	
NMEC		Credits: 4	
Course Code 18PBAN31		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- research and evaluate the personal attributes and skills that characterize a successful entrepreneur.
- compare their personal characteristics and interests to that of a successful entrepreneur.
- identify the ideas of business startup and thereby prepare & appraise the business plan
- identify & assess sources of support for small businesses and entrepreneurs.
- illustrate examples of current social rural entrepreneurs, their companies, and their contributions towards Indian Economic development.
- assess the modes of entry into International Entrepreneurship.
- analyze the growth of Women Entrepreneurship in India and apprehend its contribution to Indian Economy.

Course Code 18PBAN31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	S	L	L	S	S	L
CO 2	M	S	L	L	S	S	L
CO 3	M	S	L	L	S	S	L
CO 4	M	S	L	L	S	S	L
CO 5	M	S	L	L	S	S	L
CO 6	M	S	L	L	S	S	L
CO 7	M	S	L	L	S	S	L

Semester III	RETAIL MARKETING	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE301		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

- analyze the method of using marketing tools to interact with their customers.
- identify the shopping behaviours, decision processes for evaluating retail offering and purchasing merchandise and services.
- assess how to extract profit and fix the price from a retail offering.
- understand the methods and procedures used by successful retailers in today's global economy.
- comprehend retailing's role in society and, conversely, society's impact on retailing.
- recognize how retailers differentiate their offering as an element in their corporate strategy.

Course Code 18PBAE301	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	S	S	S
CO 2	S	S	S	S	S	S	S
CO 3	S	S	S	M	M	S	S
CO 4	S	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S
CO 6	S	S	S	S	S	S	S

Semester III	PRODUCT MANAGEMENT AND DIGITAL MARKETING	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE302		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- formulate a product strategy for the organization.
- maintain a good relationship with customers and provide good customer service in an ethical manner.
- identify the methods of positioning the product.
- prepare a good digital media advertisement.
- analyze the various social media advertisement for boosting the sales.

Course Code 18PBAE302	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	S	S	M	S	S
CO 3	S	M	S	S	S	M	S
CO 4	S	M	S	S	S	S	S
CO 5	S	S	M	S	S	S	S

Semester III	SALES PROMOTION AND SALES MANAGEMENT	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE303		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- formulate a sales promotion strategy for the organization.
- maintain a good relationship with customers and provide good customer service in an ethical manner.
- identify the methods of training the sales executives.
- prepare a good sales promotion budget.
- analyze the various techniques of sales promotion.

Course Code 18PBAE303	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	M	S	S	S
CO 2	S	S	S	L	S	S	S
CO 3	S	S	S	M	S	S	S
CO 4	S	S	S	M	S	S	S
CO 5	S	S	S	M	S	S	S

Semester III	INDIAN CAPITAL MARKETS	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE304		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- suggest a company about the various methods of raising capital.
- draft a course of action for companies from SCRATCH to raise funds.
- trade and invest in companies in secondary market.
- select companies for investment.
- interpret the guidelines and regulations imposed by regulatory authorities in raising capital and investments.
- interpret the movements in indices like SENSEX and NIFTY 50.

Course Code 18PBAE304	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	L	M	-	S	L	M
CO 2	S	-	S	-	L	L	M
CO 3	L	-	-	L	-	M	S
CO 4	-	-	-	M	-	M	M
CO 5	S	L	M	L	-	M	-
CO 6	S	-	-	M	M	L	S

Semester III	INTERNATIONAL TRADE, FINANCE AND DOCUMENTATION	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE305		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- comprehend the foreign trade environment.
- analyze the various alternatives available for foreign trade and finance.
- explain the management about different risks in foreign trade.
- assess the financial risk management strategies in foreign trade.
- carry out documentation required for foreign trade.
- appraise the management about various promotion schemes related to exports, apply and avail them.

Course Code 18PBAE305	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	L	-	-	L
CO 2	S	-	-	S	M	-	L
CO 3	S	-	-	-	M	M	-
CO 4	S	M	-	M	M	M	M
CO 5	S	S	-	M	-	S	L
CO 6	S	S	-	-	M	-	L

Semester III	STRATEGIC FINANCIAL MANAGEMENT	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE306		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the tools and techniques of cost management.
- interpret the perspectives of business ethics.
- plan strategic and financial planning in their organization.
- apply various theories to analyse the portfolios.
- practice various techniques in investment analysis
- face the risk and uncertainty in their business.

Course Code 18PBAE306	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	-	S	M	S	-
CO 2	L	M	S		L	M	-
CO 3	S	S	-	M	S	-	-
CO 4	S		-	M	-	-	-
CO 5	S	S	-	-	-	S	L
CO 6	S	S	-	-	-	-	L

Semester III	INDUSTRIAL RELATIONS AND LABOUR LAW	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE307		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the importance and impact of good industrial relations in business
- know the features of various labour legislations enacted to safeguard the rights of workforce in India.
- apply concepts of industrial relations at their workplace to efficiently protect and manage the labours rights and safety.
- know the role of national and International Labour Organizations in protecting labour welfare and safety in India
- promote, develop and maintain the industrial peace and democracy at their workplaces.
- prevent and avoid the industrial conflicts, strike, lockouts and other forms of disputes at workplaces to maintain industrial harmony.

Course Code 18PBAE307	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	L	M	-	L	L	M
CO 2	L	L	L	-	-	S	L
CO 3	S	M	S	M	S	S	S
CO 4	L	M	M	-	-	S	-
CO 5	S	S	S	S	S	S	S
CO 6	S	S	S	L	S	S	S

Semester III	WAGES AND SALARY ADMINISTRATION	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE308		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- practice some of basic rules and regulations of wages and salary administration.
- analyze the methods of Payment, Differentials and Structure, Role In Employee Morale, Motivation And Productivity.
- to educate the students in the Use of Necessary and Tools Techniques of Wage and Salary Administration.
- to acquire a glimpse of wage and salary administration function in the organization
- point out the benefits of Fringe Benefits
- calculate the preparation of Payroll and Wage Calculations

Course Code 18PBAE308	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	S	-	-	M	-	L
CO 2	-	S	-	-	-	L	M
CO 3	S	L	-	L	M	-	-
CO 4	-	-	-	L	-	M	S
CO 5	-	-	M	-	-	L	L
CO 6	-	L	-	-	-	L	S

Semester III	ORGANIZATIONAL DEVELOPMENT	Hours/Week: 4	
Elective		Credits: 3	
Course Code 18PBAE309		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- realize the concept of organizational development.
- discuss the characteristics of organizational climate.
- identify the importance of managerial grid.
- distinguish the future prospects of od.
- argue the techniques for successful od effects.
- indicate the importance of collecting data.

Course Code 18PBAE309	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	-	L	L	M	S	S
CO 2	-	L	L	-	-	S	M
CO 3	L	-	L	-	M	L	-
CO 4	L	-	L	-	-	M	S
CO 5	-	-	L	L	M	S	M
CO 6	-	-	L	S	-	L	-

Semester III	INTERNSHIP & SEMINAR ON MANAGERIAL SKILLS II	Hours/Week: 1	
Skill Enhancement Course -2		Credits: 1	
Course Code 18PBAS31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- undertake various activities in the function of marketing / finance / hr.
- analyze a business situation in any functional area.
- work as a member of team.
- come out with recommendation for business problems by discussing in a group.
- undertaking initiatives in a team.
- develop the interpersonal communication skills.

Course Code 18PBAS31	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO7
CO 1	S	S	S	L	S	S	M
CO 2	S	S	S	L	S	S	M
CO 3	S	S	S	L	S	S	M
CO 4	S	S	S	L	S	S	M
CO 5	S	S	S	L	S	S	M
CO 6	S	S	S	L	S	S	M
CO 7	S	S	S	L	S	S	M

Semester III	BUSINESS PLAN PREPARATION	Hours/Week: -	
Extra Credit Paper:1		Credits: 1	
Course Code 18PBAO31		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- identify the business opportunities available in the environment.
- formulate the identified idea into business plan.
- preparation of comprehensive marketable business plan.
- analyse the financial requirements to start the business.
- provides students with the tools and insights to start their business.
- understand the internal resources available and the external influencers that need to be considered.

Semester III	STRATEGIC MANAGEMENT	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 18PBAC41		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the different types of strategies.
- make strategic decision on their own.
- analyses their own internal and external environment.
- evaluate the factors influencing strategic management.
- select the best strategy and apply it in their business.
- control the strategy using various techniques.

Course Code 18PBAC41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	L	S		S
CO 2	M		M	L		S	S
CO 3	S	S	S	M	L	L	S
CO 4	M		M		L	M	S
CO 5	L	M	L	S	M		S
CO 6	S	L	L	M	S	L	S

Semester IV	ADVERTISING	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE401		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- develop creative strategies for advertising.
- prepare a good advertisement layout for the products.
- choose the channels and media for advertisement.
- identify the correct advertisement appeals and designs.
- create an advertising agency based on the interest of the consumers.
- select an appropriate advertising method to be used by the advertising agency.

Course Code 18PBAE401	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	S	S	S
CO 2	S	S	M	M	S	S	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	M	S	S	S	S
CO 5	S	S	M	M	S	S	S
CO 6	S	S	M	S	S	S	S

Semester IV	CONSUMER BEHAVIOUR	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE402		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the behaviour of the consumers and maintain a good rapport with them.
- provide good customer service in an ethical manner.
- identify the purchasing pattern of the consumers.
- analyze the demand of consumers based on the demographic and cultural profile.
- plan the stages in the life cycle of the product.
- identify the needs and demands of the rural consumers in India.

Course Code 18PBAE402	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	S	M	S	S
CO 2	S	S	S	S	M	S	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	S	S	S	S	S
CO 5	S	M	M	M	S	S	S
CO 6	S	S	S	S	S	S	S

Semester IV	BRAND MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE403		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- manage brand portfolio for products and services
- formulate strategic brand decisions in the market.
- position the brand in the minds of the customers.
- design labels based on the recent trends in the market.
- create brand and business values among consumers.

Course Code 18PBAE403	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	M	S	S	S	M
CO 2	S	S	M	S	S	S	S
CO 3	S	S	S	S	S	S	S
CO 4	S	S	S	S	M	S	S
CO 5	S	S	S	S	S	S	S

Semester IV	SERVICES MARKETING	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE404		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concepts and theories of services marketing in real life situations.
- extend competency in designing services marketing mix.
- realize the role of media selection in advertising a service.
- develop the strategy for realizing the services marketing objective of an organization.
- formulate a better service process for realizing the company's objective.

Course Code 18PBAE404	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	M	S	S	S
CO 2	S	S	S	M	S	S	S
CO 3	S	S	S	M	S	S	S
CO 4	S	S	S	M	S	S	S
CO 5	S	S	S	M	S	S	S

Semester IV	INTERNATIONAL MARKETING	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE405		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- formulate an international marketing strategy for the organization.
- maintain a good relationship with customers and provide good customer service in an ethical manner.
- identify the data required for fixing price for exporting a product.
- discover the methods for international product launch after market analysis.
- analyze the various international sales promotion strategies.

Course Code 18PBAE405	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	L	S	S	S
CO 2	S	S	S	M	S	S	S
CO 3	S	S	S	L	S	S	S
CO 4	S	S	S	M	S	S	S
CO 5	S	S	S	M	S	S	S

Semester IV	INVESTMENT AND PORTFOLIO MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE406		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- evaluate various investment options.
- calculate risks involved in investments.
- attempt to determine a fair value of an investment.
- choose shares for short-term returns and long-term investments.
- calculate returns for a simple portfolio.
- evaluate and revise a portfolio.

Course Code 18PBAE406	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	L	-	M	L
CO 2	-	-	-	L	-	M	L
CO 3	S	-	L	-	L	S	L
CO 4	-	M	L	M	L	L	M
CO 5	S	-	L	M	L	L	M
CO 6	S	M	L	M	L	-	M

Semester IV	MICROFINANCE	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE407		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- assess the need for microfinance in the development of our nation.
- identify the various models of microfinance.
- assess the impact of microfinance on our economy.
- evaluate the operational risk of microfinance Institutions.
- identify the issues related to microfinance and frame strategies to address it.

Course Code 18PBAE407	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	L	-	-	S	-
CO 2	M	M	-	S	-	S	-
CO 3	M	M	-	S	-	S	-
CO 4	-	S	-	M	-	S	-
CO 5	S	M	-	S	-	S	-

Semester IV	FINANCIAL INSTITUTIONS AND SERVICES	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE408		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- evaluate alternatives for raising short term capital.
- interpret the role of insurance in corporate sectors.
- interpret the role of banking services in corporate companies.
- identify the scope of merchant banking services in raising capital.
- assess the role of non-banking institutions.
- analyse and select an appropriate mutual fund.

Course Code 18PBAE408	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	L	S	L	M	S	L	M
CO 2	S	M	-	S	S	L	L
CO 3	S	L	L	M	-	M	L
CO 4	M	S	-	L	S	M	M
CO 5	L	M	-	M	L	L	M
CO 6	S	S	L	M	-	M	S

Semester III	INTERNATIONAL FINANCIAL MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE409		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concept of functioning of finance.
- manage the transaction exposure.
- emphasize the importance of finance in a global market scenario.
- illustrate the functioning of foreign exchanges and their role.
- interpret exchange rate in their real time.
- understand the concept of exchange rate determination.

Course Code 18PBAE409	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	-	-	M	S	L
CO 2	S	S	-	-	-	S	-
CO 3	S	S	-	-	-	S	S
CO 4	S	-	-	M	-	S	S
CO 5	S	S	-	M	-	S	-
CO 6	S	L	-	-	-	S	M

Semester III	BUDGETING, PROFIT PLANNING AND CONTROL	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE410		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- prepare budget in an efficient way.
- achieve higher efficiency in profile planning and control.
- specialize in finance and have good knowledge in corporate budgeting.
- plan their services and sales in their day to day business.
- plan and control their material, work in progress and finished goods in their day to day business.
- prepare flexible and capital expense budget.

Course Code 18PBAE410	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	M	-	S	L	L	M
CO 2	S	M	-	-	-	M	L
CO 3	M	-	L	S	L	S	S
CO 4	S	M	-	S	M	-	-
CO 5	S	M	L	-	L	M	M
CO 6	S	L	L	L	-	M	-

Semester IV	TRAINING AND DEVELOPMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE411		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the concepts, principles, and process of training and development in an organizational setting.
- assess training needs at various levels and design training and development programmes accordingly.
- design a well-structured and efficient training and development programme according to the needs of the business.
- forecast and analyze various costs involved in training programs and prepare the best suitable training budget.
- evaluate the effectiveness and efficiency of training and development programmes with the help of various tools and techniques.
- contribute to the success and growth of an organization in the global competition by updating and enriching the skills and knowledge of workforce with the competitive training programmes.

Course Code 18PBAE411	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	-	L	S	S	S	S
CO 2	S	-	M	S	L	S	M
CO 3	S	S	S	S	M	S	S
CO 4	L	-	-	S	-	L	-
CO 5	S	-	-	S	S	S	M
CO 6	S	S	S	S	S	S	S

Semester IV	INTRODUCTION TO PSYCHOLOGY	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE412		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the fundamental concepts and various branches of psychology.
- know the importance of basic applications of psychology in everyday life.
- identify their personality and ensure their effective participation in responding to the needs and challenges of society and business.
- become more adaptive to the changing nature of society, educational institutions and organizations.
- being more efficient in managerial positions by identifying and understanding the psychological problems of individuals at workplaces.
- identify, manage and control mental, psychological and emotional potentials for efficient accomplishment of social and business goals.

Course Code 18PBAE412	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	-	M	-	S	-
CO 2	-	-	M	-	-	S	L
CO 3	S	L	S	L	S	S	S
CO 4	M	M	M	-	M	-	L
CO 5	S	M	S	S	S	L	L
CO 6	S	S	S	L	S	S	S

Semester IV	INTERNATIONAL HUMAN RESOURCE MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE413		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- apply the knowledge about the best practices followed on a world-wide scale.
- relate the Cross Culture of people in the world with respect to industrial relations.
- discuss the Industrial relations at international level.
- identify the International HR practices.
- compare the International trade union with the National Trade union.
- understand the selection process in various MNCs.

Course Code 18PBAE413	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	-	L	L	S	S	S
CO 2	M	-	S	L	M	S	S
CO 3	-	-	M	-	-	S	M
CO 4	M	-	-	L	S	S	S
CO 5	-	-	-	M	L	S	M
CO 6	M	-	L	-	M	M	S

Semester IV	PERFORMANCE MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE414		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- analyze overview about the performance management.
- understand the importance of maintaining the efficient performance in the organizations.
- categorize the steps involved in implementing the performance management in organizations.
- identify the barriers to effective performance and resolve those barriers through constant monitoring, coaching and development interventions.
- predict the Organization performance through various strategic approaches.
- identify the importance of 360 degree feedback system.

Course Code 18PBAE414	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	S	L	L	S	L	L
CO 2	S	M	L	L	S	S	S
CO 3	S	S	M	L	S	S	M
CO 4	S	S	L	S	S	S	S
CO 5	S	S	L	M	S	S	S
CO 6	S	M	M	M	S	M	M

Semester IV	STRATEGIC HUMAN RESOURCE MANAGEMENT	Hours/Week: 6	
Elective		Credits: 4	
Course Code 18PBAE415		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- understand the strategic role of specific HR systems in business growth.
- distinguish the strategic approach to manage the workforce in corporate through the traditional and functional approach.
- develop competent human resource policies by applying the strategic HRM concepts in workplace.
- manage and motivate employees using the basic principles of strategic human resource management.
- construct sound strategic human resource policies and practices in business to attract and retain qualified personnel.
- modify and update the human resource policies and practices according to the business requirements.

Course Code 18PBAE415	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	S	S	S	L	S	S	M
CO 2	S	S	S	M	S	S	S
CO 3	S	S	S	M	S	S	S
CO 4	S	S	S	L	S	S	S
CO 5	S	S	S	L	S	S	S
CO 6	S	S	M	M	S	S	M

Semester IV	SEMINAR ON INDIAN ETHOS	Hours/Week: 1	
Value Enhancement Course -1		Credits: 1	
Course Code 18PBAS41		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- undertake activities in business with a strong focus on human values
- engage in business activities that promotes development in society
- enhance one's skills to become a learning professional
- come out with recommendation for business problems without compromising ethical focus.

Course Code 18PBAS41	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	-	M	S	M	M	-	-
CO 2	-	S	S	M	M	-	L
CO 3	S	S	-	-	M	-	S
CO 4	S	S	S	-	L	-	-

UG Programmes

Programme Educational Objectives (PEOs)

PEOs are broad statements that describe the career and professional achievements, that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the Mission of the Institution.

Programme Outcomes (POs)

POs shall be based on Graduate Attributes (GAs) of the Programme. The GAs are the attributes expected of a graduate from a Programme in terms of knowledge, skills, attitude and values. The Graduate Attributes include Disciplinary Knowledge, Communication Skills, Critical Thinking, Problem Solving, Analytical Reasoning, Research Related Skills, Co-operation/Team Work, Scientific Reasoning, Reflective Thinking, Information/Digital Literacy, Multicultural Competence, Moral and Ethical Awareness/Reasoning, Leadership Qualities and Lifelong Learning.

On successful completion of the Programme, the students will be able to

- 1 apply effectively the acquired knowledge and skill in the field of Arts, Physical Science, Life Science, Computer Science, Commerce and Management for higher studies and employment. (*Disciplinary Knowledge*)
- 2 communicate proficiently and confidently with the ability to express original/complex ideas effectively in different situations. (*Communication Skills*)
- 3 identify, formulate and solve problems in real life situations scientifically/systematically by adapting updated skills in using modern tools and techniques. (*Scientific Reasoning and Problem Solving*)
- 4 critically analyse, synthesise and evaluate data, theories and ideas to provide valid suggestions for the betterment of the society. (*Critical Thinking and Analytical Reasoning*)
- 5 use ICT in a variety of self-directed lifelong learning activities to face career challenges in the changing environment. (*Digital Literacy, Self - directed and Lifelong Learning*)
- 6 self-manage and function efficiently as a member or a leader in diverse teams in a multicultural society for nation building. (*Co-operation/Team Work and Multicultural Competence*)
- 7 uphold the imbibed ethical and moral values in personal, professional and social life for sustainable environment. (*Moral and Ethical Awareness*)

B.A.Tamil

Programme Educational Objectives (PEOs)

The students will be able to

PEO1: மிகச்சிறந்த ஆசிரியர், மொழிப்பயிற்சியாளர், படைப்பாளர், பத்திரிக்கையாளர், ஊடகவியலாளர் எனப் பல்துறைகளில் வல்லமை பெறுதல்.

PEO2: வேலைவாய்ப்பிற்கான தளங்கள் மற்றும் சவால்களை எதிர்கொள்ளுதல், காலமாற்றங்களுக்கேற்ப புதியதிறன்களைப் பெறுதல்.

PEO3: தமிழர் மரபுகள் பண்பாடுகள், சமூகக்கடமைகள், பொறுப்புகள் போன்ற வாழ்வியல் விழுமியங்களைப் பெறுதல்.

குறிக்கோளை மையமிட்ட முக்கியக் கூறுகள்	PEO1	PEO2	PEO3
ஆசிரியர்திறன் மற்றும் படைப்புத்திறன் உருவாக்கம்	✓	-	-
தமிழ் இலக்கண இலக்கிய நூல்களில் ஆழ்ந்த புலமை	✓	✓	-
வேலைவாய்ப்பிற்கான மொழித்திறன்	✓	✓	-
நல்வாழ்வுக்கான வாழிமுறைகள்	-	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of B.A. Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

*இலக்கிய, இலக்கணங்களைக் கற்றதன் வாயிலாகத் தமிழரின் பண்பாடு மற்றும் பழக்கவழக்கங்கள் குறித்த வாழ்வியல் ஒழுக்கமும் அறிவார்ந்த புலமையும் பெற்று, வேலைவாய்ப்பு மற்றும் உயர் கல்வி கற்பதற்குத் தகுதியும் திறமையும் பெறுவர்.

PO2 - *Communication Skills*

*மொழி மற்றும் கருத்துத் தொடர்புத் திறனில் மேம்பாடு அடைந்து, தமிழில் பேசுவதற்கும் எழுதுவதற்குமான தனித்திறன்களை மொழி வளர்ச்சிக்கும், கல்வியாளர்களுக்கும், ஊடகங்களுக்கும் பயன்படுத்துவதில் தமது பங்களிப்பினை நல்குவர். மேலும் ஆங்கிலமொழி அறிவையும் நடைமுறையில் பயன்படுத்துவர்.

PO3 - *Scientific Reasoning and Problem Solving*

*காலந்தோறும் இலக்கியங்களிலும் மொழிகளிலும் ஏற்படுகின்ற மாற்றங்களையும் சிக்கல்களையும் பகுத்துணர்ந்து அவற்றை அடுத்த தலைமுறையினருக்கு எளிய முறையில் எடுத்துரைப்பர்.

*இலக்கியம், கலை, அறிவியல் தொடர்புகளை ஆராய்ந்து பயன்பாட்டு முறைகளைத் தமிழ் மொழி வளர்ச்சிக்கும் பண்பாட்டு வளர்ச்சிக்கும் பயன்படுத்துவர்.

PO4 - *Critical thinking and Analytical Reasoning*

*இலக்கண மரபுகளையும் மாற்றங்களையும் வளர்நிலைகளையும் திறனறிந்து மொழிநடையை எளிமையாக்குவர் புதுமையைப் புகுத்துவர்.

*தமிழ் இலக்கிய, இலக்கணங்களைப் பிறமொழி இலக்கியங்களோடு ஒப்பிட்டு ஆய்வு மேற்கொள்வதன் மூலம் புதிய இலக்கிய இலக்கண வகைமைகளை உருவாக்குவர்.

PO5 - *Digital Literacy, Self - directed and Lifelong learning*

*கலைச் சொல்லாக்கம், மொழிபெயர்ப்பு, இணையம் போன்ற பல்துறைகளில் தமிழ் மொழியைப் பயன்படுத்துவர். தமிழோடு பிற்துறைசார் அறிவினைச் சமுதாயத்திற்கு எடுத்துரைப்பர்.

*இலக்கியப் பாத்திரங்களுக்கும் நடைமுறை மாந்தர் இயல்புகளுக்கும் உள்ள ஒற்றுமை வேற்றுமைகளை மதிப்பிடுவர். சிறந்தவற்றைச் சமுதாயத்தினர் பின்பற்ற அறிவுறுத்துவர்

PO6 - Cooperation/Team Work and Multi-Cultural Competence

*படைப்பாற்றல், கலைவெளிப்பாடுஇசுற்றுப்புறச் சூழல் பாதுகாப்பு, சமூகத்தொடர்பு, பேரிடர் மேலாண்மை போன்றவற்றில் இணைந்த(கூட்டான) செயல்திறன்களை வெளிப்படுத்துவர். இதன்மூலம் தலைமைப்பண்பு, திட்டமிடல், பணிப்பங்கீடு, கால மேலாண்மை, ஒருங்கிணைப்புத் திறன் போன்ற தனித்திறன்களை வெளிப்படுத்துவர்.

PO7 - Moral and Ethical awareness

*தார்மீக மற்றும் நெறிமுறை மதிப்புகளை வாழ்வில் பின்பற்றுவதுடன் பிறருக்கும் அறிவுறுத்தி விழிப்புணர்வு பெறச்செய்வர்.

முதற் பருவம்	பொதுத்தமிழ் தாள் 1	நேரம் / வாரம் : 6	
பகுதி I		தர மதிப்பு : 3	
பாடக் குறியீட்டு எண் 20UTAG11		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழ் மொழியின் பயன்பாடுகள், இலக்கிய இலக்கண மரபுகள், வடிவங்கள், வகைகள், வரலாறுகளை வெளிப்படுத்துவர். [K1]

CO2: இக்கால இலக்கியப் பாடுபொருள்களையும் இலக்கிய நயங்களையும் இலக்கண வடிவங்களையும் பண்பாட்டுக் கூறுகளையும் எடுத்துரைப்பர். [K2]

CO3: காலந்தோறும் இலக்கிய, இலக்கணங்களில் ஏற்படுகின்ற மாற்றங்களை அறிவர். மொழியைப் பிழையறப் பேசுவதற்கும் எழுதுவதற்கும் கருத்துப் பரிமாற்றம் செய்வதற்கும் உரியதிறன் பெற்றுப் பயன்படுத்துவர். [K2]

CO4: இக்கால இலக்கியங்களின் உருவம், உள்ளடக்கம், உத்திகள் போன்றவற்றை முறையாகப் பயின்று, படைப்புத் திறன் பெறுவர். இருமொழிப் புலமை பெற்று ஆங்கிலச் சொற்களை மொழி பெயர்ப்பர். புதிய கலைச்சொற்களை உருவாக்குவர். [K3]

CO5: இலக்கியப் படைப்புகளில் இடம்பெறும் மாந்தர்களின் வாழ்வியல் விழுமியங்கள், சமூகச் சிக்கல்கள், மொழி நடைக்கூறுகள், பண்பாட்டு மாற்றங்கள் போன்றவற்றை நடைமுறை வாழ்வியலோடு ஒப்பிட்டுப் பகுத்தாய்வர்; சிறந்தவற்றைப் பின்பற்றுவர். [K4]

Course Code 20UTAG11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	H	H	M	L	H	H
CO2	H	H	H	M	H	H	H
CO3	H	H	H	H	H	H	H
CO4	H	H	H	H	H	H	H
CO5	H	H	H	H	M	H	H

முதற் பருவம்	இக்கால இலக்கியம்	நேரம் / வாரம் : 5	
Core Course		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 20UTAC11		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: இக்கால இலக்கியப் படைப்புகளின் வரலாறு, மரபுகள், வளர்ச்சிப் போக்குகள் வகைமைகள் போன்றவற்றைப் புலப்படுத்துவர். [K1]

CO2: இக்காலக் கவிதைகளின் உருவம், உள்ளடக்கம், உத்திகள், பாடுபொருள்கள் ஆகியவற்றை எடுத்துரைப்பர். [K2]

CO3: இலக்கிய வகைமைகளான கவிதை, சிறுகதை, உரைநடை, புதினம், நாடகம் போன்றவற்றின் மாற்றங்கள், வளர்ச்சி நிலைகளை அறிந்து வெளிப்படுத்துவர். [K2]

CO4: இலக்கியங்கள் அறிவுறுத்தும் வாழ்வியல் விழுமியங்களை நடைமுறை வாழ்வியலோடு பொருத்திக் காண்பர்; புதிய இலக்கியங்கள் படைப்பர். [K3]

CO5: இலக்கியப் படைப்புகளின் வழி இலக்கிய மாந்தர்கள், பண்பாட்டுச் சூழல்கள், சமூக வாழ்வியல் போன்றவற்றைப் பகுத்து ஆய்வர். [K4]

Course Code 20UTAC11	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2.a	2.b	3.a	3.b	4.a	4.b	5.a	5.b	6	7
CO1	H	-	H	-	H	H	H	H	M	H	H	H
CO2	H	-	H	-	H	H	H	H	H	M	M	H
CO3	H	-	H	-	H	H	H	H	H	H	H	H
CO4	H	-	H	-	H	H	H	H	M	H	M	H
CO5	H	-	H	-	H	H	H	H	M	H	H	H

முதற் பருவம்	இலக்கணம் - நன்னூல் - எழுத்ததிகாரம்	நேரம் / வாரம் : 5	
Core Course		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 20UTAC12		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழ் மொழி வளர்ச்சியில் இலக்கணத்தின் பங்கு, இலக்கணம் கற்பதன் நோக்கம், பயன்பாடுகள், இலக்கண வகைகள், போன்றவற்றை எடுத்துரைப்பர். [K1]

CO2 : நூல் மரபுகள், நூலைக்கற்போர், கேட்போர் இலக்கணம், எழுத்து வகைகள், வடிவங்கள், மாற்றங்களை வெளிப்படுத்துவர். [K2]

CO3 : தமிழ் எழுத்துக்களின் வகைகள், பிறப்பு முறைகள், வடமொழி ஆதிக்கம், புணர்ச்சி விதிகளைப் புலப்படுத்துவர். [K2]

CO4: மொழியில் ஏற்படுகின்ற புணர்ச்சி மாற்றங்களையும் புதிய சொல்லாக்கங்களையும் பிரித்தறிந்து பயன்படுத்துவர். [K3]

CO5: தமிழ் எழுத்துக்கள் புணர்ச்சியில் பெறும் மாற்றங்கள், மரபுகள் போன்றவற்றைப் பகுத்தாய்வர். [K4]

Course Code 20UTAC12	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	-	H	-	L	M	H	L	L	L	L	M
CO2	H	-	H	-	L	M	M	M	M	M	L	H
CO3	H	-	H	-	H	H	H	H	H	H	M	H
CO4	H	-	H	-	H	H	H	H	H	M	H	H
CO5	H	-	H	-	H	H	H	H	H	M	M	H

முதற் பருவம்	தமிழக வரலாறும் பண்பாடும்	நேரம் / வாரம் : 6	
Allied Course		தர மதிப்பு : 5	
பாடக் குறியீட்டு எண் 20UTAA11		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழகத்தின் வரலாறு, வாழ்வியல் முறைகள், பண்பாட்டுக் கூறுகள், நாகரிகம், போன்றவற்றை எடுத்துரைப்பர். [K1]

CO2: தமிழக வரலாற்றின் அடிப்படை ஆதாரங்கள், கலை, இலக்கிய வரலாற்றுச் சான்றுகள், இயற்கை வளங்கள், பண்டைய தமிழர்களின் வணிக முறைகள் போன்றவற்றை வெளிப்படுத்துவர். [K2]

CO3: தமிழக வரலாற்றில் ஏற்பட்ட ஆட்சி மாற்றங்கள் சமூக, பொருளாதார, வாழ்வியல் மாற்றங்கள் போன்றவற்றை எடுத்துரைப்பர். [K3]

CO4: தமிழக வரலாற்றில் காலந்தோறும் ஏற்பட்ட அரசியல், சமுதாய பொருளாதார, பண்பாட்டு மாற்றங்களைப் பிரித்தறிவர். [K3]

CO5: தமிழக வரலாற்றில் நடைபெற்ற மன்னர் ஆட்சி முறையையும், இக்கால ஆட்சி முறையையும் வாழ்வியற் கூறுகளையும் பகுத்தாராய்வர். [K4]

Course Code 20UTAA11	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	-	H	-	M	H	M	M	L	M	H	H
CO2	H	-	H	-	M	H	M	M	M	M	H	H
CO3	H	-	H	-	H	H	H	M	M	H	H	H
CO4	H	-	H	-	H	H	H	M	M	H	H	H
CO5	H	-	H	-	H	H	H	H	M	H	H	H

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUT COMES

On completion of the course,the students will be able to

- CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]
- CO2: indicate the importance and benefits of upholding human values. [K2]
- CO3: explain the steps to be taken for upholding human values and human rights. [K2]
- CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]
- CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

இரண்டாம் பருவம்	பொதுத்தமிழ் தாள் II	நேரம் / வாரம் : 6	
பகுதி - I		தர மதிப்பு : 3	
பாடக் குறியீட்டு எண் 20UTAG21		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1 : பக்தி இலக்கியம், புதினம், இலக்கணம், இலக்கியவரலாறு ஆகியவற்றின் அடிப்படைக் கூறுகளை வெளிப்படுத்துவர். [K1]

CO2 : பக்தி இலக்கியம், புதினம், இலக்கணம், இலக்கியவரலாறு ஆகியவற்றின் சிறப்புக் கூறுகளைத் தெளிவுபடுத்துவர். [K2]

CO3 : பக்தி இலக்கியம், புதினம், இலக்கணம், இலக்கியவரலாறு ஆகியவற்றின் இயல்புகளையும், நெறிமுறைகளையும் விவரிப்பர். [K2]

CO4 : பக்தி இலக்கியம், புதினம், இலக்கணம், இலக்கியவரலாறு ஆகியவற்றின் பயன்பாடுகளை எடுத்துரைப்பர். [K3]

CO5 : பக்தி இலக்கியம், புதினம், இலக்கணம், இலக்கியவரலாறு ஆகியவற்றின் மரபுகளையும், உள்ளடக்கங்களையும் பகுத்து ஆராய்வர். [K4]

Course Code 20UTAG21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	H	H	H	H	M	H
CO2	H	H	H	H	H	M	H
CO3	H	H	H	H	M	H	H
CO4	H	H	M	H	M	H	H
CO5	H	H	H	H	M	H	H

இரண்டாம் பருவம்	அற இலக்கியம்	நேரம் / வாரம் : 5	
Core Course		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 20UTAC21		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: அற இலக்கியங்களின் பின்புலங்கள், வளர்நிலைகள், வகைமைகளைத் தெரிந்து வெளிப்படுத்துவர். [K1]

CO2: அற இலக்கியங்கள் காட்டும் வாழ்வியல் நெறிமுறைகளையும் காலச் சூழல்களையும் தேவைகளையும் விவரிப்பர். [K2]

CO3: மனிதன் கொள்ளத்தக்க அறங்கள், தள்ளத்தக்க அறமற்ற செயல்கள் போன்றவற்றை எடுத்துரைப்பர். [K2]

CO4: காலந்தோறும் மாறும் அறங்களை மனித வாழ்வியலோடு இணைத்துப் பயன்படுத்துவர். [K3]

CO5: பிற்கால அற இலக்கிய வடிவங்களையும், வளர்ச்சிக் கூறுகளையும் ஆராய்வர். [K4]

Course Code 20UTAC21	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	-	H	-	M	M	H	M	M	H	H	H
CO2	H	-	H	-	H	M	H	H	M	H	H	H
CO3	H	-	H	-	H	H	H	H	H	H	H	H
CO4	H	-	H	-	H	H	H	H	M	H	H	H
CO5	H	-	H	-	H	H	H	H	M	H	H	H

இரண்டாம் பருவம்	இலக்கணம் - நன்னூல் - சொல்லதிகாரம்	நேரம் / வாரம் : 5	
Core Course		தர மதிப்பு : 4	
பாடக் குறியீட்டு எண் 20UTAC22		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: இலக்கண வகைகள், சொல்லிலக்கணப் பகுப்பு முறைகள் மற்றும் அடிப்படை

விதிமுறைகளை எடுத்துரைப்பர். [K1]

CO2: சொற்களின் பாகுபாடுகளையும் அமைப்பு முறைகளையும் அறிந்து

வெளிப்படுத்துவர். [K2]

CO3: நால்வகைச் சொற்களின் சிறப்புக் கூறுகளையும் ஒற்றுமை வேற்றுமைகளையும்

தெளிவாகக் குறிப்பிடுவர். [K2]

CO4: சொற்களின் பொதுவான தன்மைகளையும் பயன்பாடுகளையும் பிரித்தறிவர். [K3]

CO5: சொல்வகைகளில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களையும் வளர்ச்சிப்

போக்குகளையும் பகுத்து ஆராய்வர். [K4]

Course Code 20UTAC22	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	-	H	-	M	H	M	M	L	L	L	H
CO2	H	-	H	-	H	M	H	M	H	M	H	H
CO3	H	-	H	-	H	H	M	H	M	M	H	H
CO4	H	-	H	-	H	H	H	H	H	M	H	H
CO5	H	-	H	-	H	H	H	H	H	H	H	H

இரண்டாம் பருவம்	நாடகவியல்	நேரம் / வாரம் : 4	
Allied Course		தர மதிப்பு: 5	
பாடக் குறியீட்டு எண் 20UTAA21		அகமதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: நாடகக் கலையின் தோற்றம், வரலாறு, அமைப்பு மற்றும் அடிப்படை நாடக மரபுகளை எடுத்துரைப்பர். [K1]

CO2: நாடக வகைகள், நாடகத்தின் வளர்ச்சிநிலைகள், பண்பாட்டுக் கூறுகள் ஆகியவை பற்றிய செய்திகளை வெளிப்படுத்துவர். [K2]

CO3: காலந்தோறும் நாடகக்கலையில் ஏற்படுகின்ற மாற்றங்களையும், புதிய போக்கினையும், உத்திகளையும், மொழிநடைக் கூறுகளையும், பண்புகளையும், புதிய நாடக வடிவங்களையும் விவரிப்பர். [K2]

CO4: காலச் சூழலுக்கேற்ற நாடக வடிவங்களை அறிந்து நாடகங்கள் எழுதுவர். [K3]

CO5: நாடகக் கலையின் வளர்ச்சிப் போக்கினையும் தற்கால நாடக மரபுகளையும் பகுத்து ஆராய்வர். [K4]

Course Code 20UTAA21	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO6	PSO7
	1.a	1.b	2.a	2.b	3.a	3.b	4.a	4.b	5.a	5.b		
CO1	M	-	M	-	L	L	M	M	L	L	M	H
CO2	H	-	H	-	H	M	M	M	M	M	L	H
CO3	H	-	H	-	H	H	H	H	M	M	H	H
CO4	H	-	H	-	M	H	H	H	H	H	H	H
CO5	H	-	H	-	H	H	H	H	H	H	H	H

இரண்டாம் பருவம்	இதழியல்	நேரம் / வாரம் : 2	
Skill Enhancement Course		தர மதிப்பு: 2	
பாடக் குறியீட்டு எண் 20UTAS21		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: இதழ்களின் அடிப்படைக் கூறுகளை எடுத்துரைப்பர். [K1]

CO2: இதழ்களின் வரலாற்றினையும், வளர்ச்சி நிலைகளையும் விரிவாகக் குறிப்பிடுவர். [K2]

CO3: இதழியல் உத்திகள், இதழ்களின் வடிவமைப்பு, இதழ் வகைகளின் உட்கூறுகளை விவரிப்பர். [K2]

CO4: தலையங்கம், விளம்பரங்கள், கையெழுத்துப் பிரதிகள், வாசகர் கடிதம், கேள்வி-பதில் போன்றவற்றை இதழியல் உத்திகளோடு பொருத்திப் பயன்படுத்துவர். [K3]

CO5: இதழியல் உத்திகள், இதழ்களின் வடிவமைப்பு, இதழ் வகைகளின் உட்கூறுகளைப் பகுத்து ஆராய்வர். [K4]

Course Code 20UTAS21	PO1		PO2		PO3		PO4		PO5		PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO6	PSO7
	1.a	1.b	2.a	2.b	3.a	3.b	4.a	4.b	5.a	5.b		
CO1	M	-	H	-	L	L	L	L	M	H	H	H
CO2	H	-	H	-	M	H	H	M	H	H	H	H
CO3	H	-	H	-	H	H	H	M	H	M	H	H
CO4	H	-	H	-	H	H	H	H	H	M	H	H
CO5	H	-	H	-	M	H	H	H	H	M	H	H

இரண்டாம் பருவம்	மொழிபெயர்ப்பியல்	நேரம் / வாரம் : 2	
Skill Enhancement Course		தர மதிப்பு: 2	
பாடக் குறியீட்டு எண் 20UTAS22		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்தப் பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

- CO1 : மொழி பெயர்ப்பின் வரலாறு, நோக்கம், அடிப்படைத் தன்மைகள், இன்றியமையாமை, தேவைகள், பண்பாட்டுக் கூறுகள் போன்றவற்றை வெளிப்படுத்துவர். [K1]
- CO2: மொழி பெயர்ப்புக் கோட்பாடுகள், மற்றும் மொழி பெயர்ப்பாளன் தகுதிகளை எடுத்துரைப்பர். [K2]
- CO3: மொழி பெயர்ப்பின் வகைகள் மற்றும் மொழி பெயர்ப்பு நிகரன்களை விரித்துரைப்பர். [K2]
- CO4: மொழி பெயர்ப்புத் துறையில் பயன்படுத்தப்படும் கலைச் சொல்லாக்கம், புதிய சொல்லாக்கம் போன்றவற்றை அறிந்து சொல், தொடர், கவிதை, உரைநடை, பழமொழி போன்றவற்றை மொழி பெயர்ப்பர். [K3]
- CO5: கவிதைமொழிபெயர்ப்பு, உரைநடைமொழிபெயர்ப்பு மற்றும் பண்பாட்டு மொழிபெயர்ப்பு ஆகியவற்றின் மாற்றங்களைப் பகுத்தாய்வர். [K4]

Course Code 20UTAS22	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	-	H	-	H	M	H	H	M	L	H	H
CO2	H	-	H	-	H	H	M	M	M	L	H	H
CO3	H	-	H	-	H	H	H	M	H	M	H	M
CO4	H	-	H	-	H	H	H	H	H	L	H	H
CO5	H	-	H	-	H	H	H	H	H	M	H	H

B.A. English

Programme Educational Objectives (PEOs)

The students will be able to

- become successful teachers in schools & colleges, language trainers, creative writers, critics, journalists, translators, front office personnel's, event managers, anchors, radio & video jockeys, script writers
- employ their proficiency in English language skills for effective day to day communication both at the work place and the domestic sphere
- uphold the standards of their respective professions without compromising on the work ethics, engage in lifelong learning and lead a value-centric life

Key Components of the Mission Statement	PEO1	PEO2	PEO3
chisel the creative and critical faculties through in-depth study of English literary texts	✓	✓	-
instill a fervour for research endeavours	✓	-	-
strengthen their linguistic competency for employability	✓	✓	✓
better living	-	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of B.A. English Programme, the students will be able to

PO1: Disciplinary Knowledge

PSO 1.a : Appraise various literary genres and movements with a wholesome understanding of the social history of England and English literature across the world for better conceptual discourses and pursuit of higher studies.[K5]

PSO 1.b : Employ the acquired profound knowledge of English literature and language skills for better career prospects.[K3]

PO2: Communication Skills

PSO 2.a : Showcase enhanced knowledge of English grammar and enriched reservoir of English vocabulary effectively and efficiently in formal and informal situations. [K3]

PSO 2.b : Express their thoughts and ideas clearly and concisely with their proficiency in the English Language and efficacy in Soft Skills and overcome the challenges in every stage of life.[K2]

PO3 : Scientific Reasoning and Problem Solving

PSO 3 : Apply the nuances of literature to formulate ways and means to overcome crises in real life situations.[K3]

PO4 : Critical thinking and Analytical Reasoning

PSO 4.a : Evaluate the life oriented concepts and ideas reflected in literature and infer suitable means to improve the standard of living in the society. [K5]

PSO 4.b : Generate innovative thinking through intensive and extensive reading of literary and non-literary texts and excel as eminent writers and critics.[K6]

PO5: Digital Literacy, Self - directed and Lifelong learning

PSO 5 : Augment the opportunities for prospective careers and entrepreneurial endeavours with in-depth domain knowledge, honed language proficiency and updated digital skills. [K6]

PO6: Cooperation/Team Work and Multi-Cultural Competence

PSO 6 : Establish and maintain a harmonious relationship with heterogeneous groups of people and serve with a sense of social responsibility for the cause of the nation. [K3]

PO7: Moral and Ethical awareness

PSO 7 : Uphold the ethical and moral values in all the walks of life and create a sustainable environment for humanity.

Semester I	SHORT STORIES	Hours/Week: 4	
Core Course - 1		Credits: 4	
Course Code 20UENC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the incidents portrayed in the prescribed short stories. [K1]

CO2: discuss the themes and structure in the given short stories. [K2]

CO3: identify and explain the essential elements of a short story and the plot in the prescribed short stories. [K2]

CO4: determine the writer's skills in the art of characterization and depiction of moral values. [K3]

CO5: analyze the narrative style employed in the short stories of different countries. [K4]

Course Code 20UENC11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO6	PSO7
CO1	H	M	M	H	M	H	M	-	-	H
CO2	H	H	M	H	H	H	H	-	-	H
CO3	H	H	H	H	M	M	H	-	-	M
CO4	H	H	H	H	H	H	H	-	-	H
CO5	H	M	M	M	L	M	M	-	-	L

Semester I	POETRY - I	Hours/Week: 4	
Core Course		Credits: 4	
Course Code 20UENC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define various forms and genres of English poetry. [K1]

CO2: discuss the themes and settings in the given poems. [K2]

CO3: explain the moral values depicted in the prescribed poems. [K2]

CO4: determine the greatness of the poets and the poetic devices used by them. [K3]

CO5: interpret the poems by analyzing the denotative and connotative meanings. [K4]

Course Code: 20UENC12	PO1	PO2			PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	L	M	M	-	-	L
CO2	H	H	M	M	L	M	M	-	-	L
CO3	H	H	M	M	M	M	M	-	-	H
CO4	H	H	M	M	L	H	H	-	-	L
CO5	H	H	M	M	L	H	H	-	-	L

Semester I	READING AND SPEAKING SKILLS	Hours/Week: 2	
Skill Enhancement Course 1		Credits: 2	
Course Code 20UENS11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state and define the different methods of reading English texts. [K1]

CO2: distinguish the implied meaning from the literal meaning in the given context and upgrade their level of comprehension. [K2]

CO3: employ different strategies to gain deeper critical understanding of Prose and Poetic works. [K3]

CO4: exhibit their verbal competence to facilitate fruitful inter-personal communication. [K3]

CO5: integrate their listening and reading skills for effective writing and oral discourse. [K4]

Course Code 20UENS11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	L	H	H	H	M	L	H	-	-	L
CO2	L	H	H	H	M	M	H	-	-	M
CO3	H	H	H	H	M	M	H	-	-	M
CO4	L	M	H	H	L	M	H	-	-	M
CO5	L	H	H	H	L	M	L	-	-	M

Semester I	VALUE EDUCATION	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practise the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	PROSE - I	Hours/Week: 5	
Core Course 3		Credits: 4	
Course Code 20UENC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the main concepts in the prescribed essays and the characteristic features of different kinds of prose forms in English. [K1]

CO2: discuss the style and the development of plot, character and setting employed by different writers. [K2]

CO3: determine the life-oriented concepts and ideas in the prescribed essays and their role in the enhancement of human nature in general. [K3]

CO4: analyse the aesthetic and moral values ingrained in the prescribed essays. [K4]

CO5: examine the life skills imparted by eminent prose writers through an intensive reading of their works. [K4]

Course Code 20UENC21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	H	L	H	-	-	H
CO2	H	H	H	H	M	L	H	-	-	M
CO3	H	H	L	M	H	H	H	-	-	H
CO4	H	H	L	M	L	L	H	-	-	H
CO5	H	H	M	M	H	H	M	-	-	H

Semester II	LITERARY FORMS	Hours/Week: 5	
Core Course-4		Credits: 4	
Course Code 20UENC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO 1: define the existing forms of literature in English and their characteristic features. [K1]

CO 2: explain the themes associated with respective literary forms. [K2]

CO 3: illustrate the literary genres with prominent works by representative writers. [K2]

CO 4: determine the norms and principles governing different literary genres in English literature. [K3]

CO 5: analyse the use of literary devices in various literary forms. [K4]

Course Code: 20UENC22	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	L	L	M	-	-	L
CO2	H	H	M	M	L	M	M	-	-	L
CO3	H	H	M	M	L	M	M	-	-	L
CO4	H	H	M	M	L	M	M	-	-	L
CO5	H	H	M	M	L	L	M	-	-	L

Semester II	MODERN ENGLISH GRAMMAR AND USAGE	Hours/Week: 6	
Allied Course 2		Credits: 5	
Course Code 20UENA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: find the basic rules of English grammar and construct grammatically correct sentences. [K1]

CO2: explain the nuances of the English language and exhibit a comprehensive understanding of English grammar. [K2]

CO3: apply their acquired knowledge of English grammar in various forms of writings for their better career prospects. [K3]

CO4: employ the basic grammatical structures and enhance their communication skills. [K3]

CO5: analyse the grammar patterns of the English language and relate their importance in cracking competitive examinations. [K4]

Course Code 20UENA21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	L	H	H	H	M	L	H	-	-	L
CO2	L	H	H	H	M	M	H	-	-	M
CO3	M	H	H	H	H	M	H	-	-	M
CO4	L	H	H	H	H	M	H	-	-	M
CO5	M	H	H	H	M	M	H	-	-	M

Semester II	WRITING SKILLS	Hours/Week: 2	
Skill Enhancement Course 2		Credits: 2	
Course Code 20UENS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the types of written communication and communicate effectively in formal and informal situations. [K1]

CO2: explain method of expressing ideas, opinions and information in an organised way. [K2]

CO3: apply the writing skills required for social, business and career related correspondence. [K3]

CO4: organise the thoughts logically into meaningful sentences and exhibit their writing skills. [K3]

CO5: analyse the various writing skills required for prospective career and entrepreneurial endeavours. [K4]

Course Code: 20UENS21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	L	H	H	H	H	M	M	-	-	L
CO2	L	H	H	H	M	M	M	-	-	L
CO3	L	H	H	H	H	L	L	-	-	M
CO4	L	M	H	H	L	M	L	-	-	L
CO5	L	H	H	H	L	M	M	-	-	L

B.A. History

Programme Educational Objectives

The Students will be able to

- To become successful research scholars, govt servants, teachers, journalists, archaeologists, curators, administrators, social workforces and tourist guide.
- To develop necessary skills to analyse the happenings of the past for facing the challenges in the current scenario.
- To uphold their standards by inculcating the spirit of Nationalism and moral values and making them as a responsible citizen.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
Enriching the intellectual acumen of the students with the past and present of India and the world	✓	✓	✓
Empowering the Womenfolk with quality education and digital literacy.	✓	✓	-
Stimulating research attitude, skills and Preparing for range of careers	✓	✓	-

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of B.A. History Programme, the students will be able to

PO1: *Disciplinary Knowledge*

PSO 1.a: apply profound knowledge of the subjects of Regional, National and International importance, the allied subject General Economics and analyse the development of the period under study in pursuing Higher Education.

PSO 1.b: enhance their administrative skills and other professional skills in acquiring jobs like Teacher, Epigraphist, Curator, Archaeologist, Social Worker, Tourist Guide and Tourist Agent and thereby becoming a responsible citizen and an empowered woman.

PO2: *Communication Skills*

PSO2: uphold their ability to convey and exchange the historical information and interact efficiently in a diverse and ever-changing world.

PO3: *Scientific Reasoning and Problem Solving*

PSO3.a: identify the remarkable events in history, analyse from an economic perspective and understand its impact to meet the conflicting situations in the current scenario.

PSO3.b: recognise the policies, economic theories and the reforms of administrators and develop Justice, Peace and Harmony in a pluralistic society for sustainable environment.

PO4: *Critical thinking and Analytical Reasoning*

PSO4: analyse the pros and cons in History and widen their perspective for the establishment of a welfare State.

PO5: *Digital Literacy, Self - directed and Lifelong learning*

PSO5: make use of basic familiarities with digital tools and platform towards the betterment of their Self-directed and Lifelong learning activities for their successful career development in a competitive world.

PO6: *Cooperation/Team Work and Multicultural Competence*

PSO6: uphold the spirit of Nationalism and Patriotism by imbibing the historical, Multicultural and traditional values in preserving the unity of a State.

PO7: *Moral and Ethical awareness*

PSO7.a: practice the Moral, Ethical and Social values by abiding the Constitution and the gospels of the great men and women.

PSO7.b: construct their knowledge over Gender Equality, Social Justice, Communal Harmony, Secularism and Human Rights in maintaining equality in society.

Semester I	HISTORY OF INDIA (up to A.D. 900) – Paper I	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 20UHIC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognise the historical and cultural importance of India's Ancient past. [K1]

CO2: identify the remarkable events of Ancient India during the period under study. [K2]

CO3: trace the condition of Ancient India on the basis of historical sources. [K2]

CO4: illustrate and mark the places and boundaries of the Empires of Ancient past and its history. [K3]

CO5: organize the traditional, moral, cultural and religious values in protecting heritage of India. [K4]

Course Code 20UHIC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7.a	PSO 7.b
CO1	H	L	H	-	-	M	-	H	L	L
CO2	H	L	H	-	-	M	-	H	L	L
CO3	H	L	H	-	-	M	-	-	-	M
CO4	H	L	L	-	-	-	-	H	H	H
CO5	H	M	L	-	-	L	M	-	-	-

Semester I	HISTORY OF TAMIL NADU (up to A.D. 850) Paper I	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20UHIC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recall the sources and conditions of Tamil Nadu during the period under study. [K1]

CO2: discuss the remarkable events and its impact on Ancient Tamil Nadu. [K2]

CO3: illustrate the political, economic and cultural history of Ancient Tamils. [K2]

CO4: construct knowledge over the legacy of Tamils to Indian Culture. [K3]

CO5: analyse the rise of Tamil society in pre-historic and historic period. [K4]

Course Code 20UHIC12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4	PSO 5	PSO 6	PSO 7.a	PSO 7.b
CO1	H	L	M	-	-	-	-	L	L	L
CO2	H	L	-	-	-	-	L	M	M	L
CO3	H	L	M	-	-	-	L	L	L	L
CO4	H	L	M	-	-	-	-	M	-	-
CO5	H	L	M	-	-	-	L	L	-	-

Semester I	GEOGRAPHY OF INDIA	Hours/Week: 5	
Allied Course		Credits: 4	
Course Code 20UHIA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognize the Geographical features and its importance in India. [K1]

CO2: trace the uses of natural, energy resources and transportation sector. [K2]

CO3: discuss the impact of Geography in India. [K3]

CO4: apply their knowledge in marking the topography of India and transportation networks. [K4]

CO5: analyse the relationship between Geography and Indian Economy. [K5]

Course Code 20UHIA11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1. a	1.b	2	3. a	3. b	4	5	6	7.a	7.b
CO1	H	M	L	-	-	-	L	M	-	-
CO2	H	M	L	-	-	-	-	L	L	-
CO3	H	M	L	-	-	-	M	M	-	-
CO4	H	M	H	-	-	-	L	M	-	-
CO5	H	M	L	-	-	-	M	L	-	-

Semester I	VALUE EDUCATION	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External 1 -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health And happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	HISTORY OF INDIA (A.D. 900 – 1761) Paper II	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 20UHIC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recollect various dynasties and their systems of administration during the period under study. [K1]

CO2: trace the Political, Economic and Social conditions of Medieval India. [K2]

CO3: recognize the remarkable events of Muslim rule in India. [K2]

CO4: identify the achievements of rulers and the boundaries of Hindu and Muslim Empires of India. [K3]

CO5: analyse the nature of polity and fusion of culture in the Indian subcontinent. [K4]

Course Code 20UHIC21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4	PSO 5	PSO 6	PSO 7.a	PSO 7.b
CO1	H	H	H	-	-	H	-	H	M	M
CO2	H	H	H	-	-	H	-	M	M	L
CO3	H	H	H	-	-	H	-	H	M	M
CO4	H	H	H	-	-	H	-	H	M	M
CO5	H	H	H	-	-	H	-	H	M	M

Semester II	HISTORY OF TAMIL NADU (A.D. 850 -1529) Paper II	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20UHIC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recall the sources and conditions of Tamil Nadu during the period under study. [K1]

CO2: identify the administrative system of various dynasties. [K2]

CO3: outline the contributions of Empires to Medieval Tamil Nadu. [K2]

CO4: trace the legacy of Tamils and great kingdoms to Indian culture. [K3]

CO5: analyse the remarkable events and its impact on Tamil Nadu. [K4]

Course Code 20UHIC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1. a	1. b	2	3. a	3. b	4	5	6	7.a	7.b
CO1	H	M	M	-	-	-	M	H	L	L
CO2	H	M	M	-	-	-	L	M	L	-
CO3	H	M	M	-	-	-	M	L	L	L
CO4	H	M	M	-	-	-	L	M	-	L
CO5	H	M	H	-	-	-	M	M	-	L

Semester II	MODERN GOVERNMENTS	Hours/Week: 5	
Allied Course		Credits: 4	
Course Code 20UHIA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the importance of Constitution in a State. [K1]

CO2: trace the concepts and features of various constitutions. [K2]

CO3: discuss the forms and functions of Government and its political institutions. [K2]

CO4: construct knowledge over the theories and working system of the three organs of a State. [K3]

CO5: classify the Constitutions of comparative Governments. [K4]

Course Code 20UHIA21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1. a	1. b	2	3. a	3. b	4	5	6	7.a	7.b
CO1	H	H	H	M	M	-	-	-	L	-
CO2	H	H	H	M	M	-	-	-	L	-
CO3	H	H	H	M	M	-	-	-	L	-
CO4	H	H	H	M	M	-	-	-	L	-
CO5	H	H	H	M	M	-	-	-	L	-

Semester II	JOURNALISM	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 20UHS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: visualize the importance of journalism in a Democratic State. [K1]

CO2: identify the multifaceted role of Journalism and Journalist. [K2]

CO3: summarise the canons, laws, works and functions of Journalism and Journalist in India. [K2]

CO4: develop their awareness on Journalism as a community service.[K3]

CO5: analyse the rights and limitations of Journalism and Journalist in a State. [K4]

Course Code 20UHS21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4	PSO 5	PSO 6	PSO 7.a	PSO 7.b
CO1	H	M	M	-	-	-	H	M	H	H
CO2	H	M	-	-	-	-	-	-	L	-
CO3	H	M	M	-	-	-	M	M	-	-
CO4	H	H	H	-	-	-	M	L	-	-
CO5	H	M	M	-	-	-	H	L	M	M

B.Sc. Mathematics

Programme Educational Objectives (PEOs)

The students will be able to

1. become successful teachers in schools, Bank officers, government officials, Statisticians and IT professionals.
2. apply mathematical skills in analyzing and solving problems in real life situations.
3. upgrade themselves by pursuing higher education and engaging in social work to boost their morality.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
Pro found knowledge in Mathematics	√	√	√
Logical reasoning and analytical Skills	√	√	-
Focus on moral and ethical Values	√	-	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Mathematics Programme, the students will be able to

PO1-Disciplinary Knowledge

PSO1.a: apply the strong knowledge acquired in core and related areas of mathematics and its applications to continue higher studies or for employment.

PSO 1.b: apply the concrete subject knowledge and skill obtained in mathematics and carrier oriented courses to appear for competitive examinations.

PO2–Communication Skills

PSO2: communicate efficaciously on complex mathematical concepts, theorems and models with mathematics community and with society at a large.

PO3–Scientific Reasoning and Problem Solving

PSO 3.a: implement logical reasoning and analytical skills in mathematics as foundation for advanced cases in other disciplines.

PSO3.b: formulate real life problems into mathematical model and apply mathematical techniques to find solutions to the problems.

PO4–Critical Thinking and Analytical Reasoning

PSO 4.a: consider the social, cultural, economic and environmental constraints, apply the mathematical knowledge and skills to arrive at optimal solutions.

PSO 4.b: analyse mathematical data using principles of mathematics, interpret the results and provide valid conclusions applicable to various sectors of the nation.

PO5–Digital Literacy, Self-directed and Lifelong Learning

PSO5: make use of e-resources and strive for self- directed life long learning in their field of interest to face career challenges.

PO6–Co-operation / Team Work and Multicultural Competence

PSO6: work effectively as a member or leader of a diverse team in multidisciplinary environment to bring multicultural richness in mathematics.

PO7–Moral and Ethical Awareness

PSO7: practice the code of ethics of mathematics community in their career.

Semester I	DIFFERENTIAL CALCULUS	Hours/Week:4	
Core Course-1		Credits:4	
Course Code 20UMTC11		Internal 25	External 75

COURSEOUTCOMES

On completion of the course, the students will be able to

CO1: convey the fundamental concepts in differential calculus and its applications. [K1]

CO2: explain the concepts and method of finding tangent, normal, curvature, envelopes and asymptotes of a given curve. [K2]

CO3: find the p-r equations, polar subtangent and polar subnormal of the curve. [K2]

CO4: apply the knowledge gained in calculus to find n^{th} derivative, maxima and minima, curvature, evolutes, asymptotes and p-r equation of given curves. [K3]

CO5: analyse the concept of Leibnitz's formula in finding n^{th} derivative of a function, curvature, evolutes, p-r equations and asymptotes of a curve. [K4]

Course Code 20UMTC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2	3.a	3.b	4.a	4.b	5	6	7
CO1	H	H	M	M	H	L	H	H	L	-
CO2	H	M	M	M	H	L	H	H	L	-
CO3	H	M	L	M	H	L	H	M	L	-
CO4	H	M	L	H	H	M	H	M	L	-
CO5	H	M	L	M	H	M	H	M	L	-

Semester I	THEORY OF EQUATIONS	Hours/Week:4	
CoreCourse-2		Credits:4	
Course Code 20UMTC12		Internal 25	External 75

COURSEOUTCOMES

On completion of the course, the students will be able to

CO1: communicate the relation between roots and coefficients of an equation. [K1]

CO2: explain the transformed equation whose roots are related to the roots
of the given equation. [K2]

CO3: solve the polynomial equation with multiple roots. [K3]

CO4: identify the number of positive and negative real roots for any polynomial. [K3]

CO5: estimate the real roots of a cubic and biquadratic equation by Cardon's method and
Ferrari's method. [K4]

Course Code 20UMTC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO6	PSO7
CO1	H	H	M	M	H	M	M	L	L	-
CO2	H	H	M	M	H	M	M	L	L	-
CO3	H	H	M	M	H	M	M	L	L	-
CO4	H	H	M	M	H	M	M	L	L	-
CO5	H	H	M	M	H	M	M	L	L	-

Semester I	Properties of Matter, Heat and Electricity	Hours/Week: 4	
Allied Course I		Credits: 4	
Course Code 20UPMA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the basic laws, concepts in gravitation, properties of matter, relativity, electricity and heat. [K1]

CO2: derive mathematical relations involved in gravitation, properties of matter, relativity, heat, static and current electricity by applying the relevant concepts. [K2]

CO3: discuss the experimental methods to determine the physical parameters related to gravitation, relativity, properties of matter and heat. [K2]

CO4: illustrate the applications of relativistic variation, properties of matter, heat and electricity. [K3]

CO5: analyze the different moduli of elasticity, molecular theory of surface tension, acceleration due to gravity at different places and relativistic variation of length, time and mass with velocity. [K4]

Course Code 20UPMA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	L	-	-	-	M
CO2	H	H	H	L	-	-	-
CO3	H	M	M	M	-	-	-
CO4	H	H	H	M	-	L	-
CO5	H	M	M	M	H	-	-

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of up holding human values. [K2]

CO3: explain the steps to be taken for up holding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious Relationship With members of family, institution, organization or society for preserving transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and Happiness Leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	INTEGRAL CALCULUS	Hours/Week:4	
Core Course-3		Credits:4	
Course Code 20UMTC21		Internal 25	External 75

COURSEOUTCOMES

On completion of the course, the students will be able to

CO1: list the various properties of proper and improper integrals. [K1]

CO2: explain the properties of various integrals, Beta and Gamma functions and their applications.[K2]

CO3: determine the given integrals, Fourier series for a given function and solve problems using its applications. [K3]

CO4: apply integration techniques and Fourier series in higher mathematics. [K3]

CO5: analyze the application of integration in real life problems. [K4]

Course Code 20UMTC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	H	M	H	H	L	-	
CO2	H	H	H	H	H	M	H	L	L	-
CO3	H	H	H	H	H	M	M	L	L	-
CO4	H	H	M	M	H	H	M	L	L	-
CO5	H	M	M	H	M	M	H	L	L	-

Semester II	ANALYTICAL GEOMETRY OF THREE DIMENSIONS	Hours/Week:4	
Core Course-5		Credits:4	
Course Code 20UMTC22		Internal 25	External 75

COURSEOUTCOMES

On completion of the course, the students will be able to

CO1: list the different forms of equations of planes, straight lines, sphere and cone. [K1]

CO2: explain the basic concept of straight lines, planes, plane and line, angle between two planes, sphere and cone. [K2]

CO3: describe the properties of straight lines, planes, plane and line, sphere and cone. [K2]

CO4: apply the appropriate formulae to solve problems in straight lines, planes, sphere and cone. [K3]

CO5: analyze different forms of equations of straight lines, planes, sphere and cone. [K4]

Course Code 20UMTC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	H	M	M	L	L	-
CO2	H	M	M	L	M	L	L	L	M	-
CO3	H	M	M	L	M	L	L	L	M	-
CO4	H	M	L	L	H	L	L	L	M	-
CO5	H	M	M	L	H	L	L	L	L	-

Semester I & II	OFFICE AUTOMATION FOR MATHEMATICS AND DTP - PRACTICAL	Hours/Week:2	
Core Practical-1		Credits:2	
Course Code 20UMTC21P		Internal 40	External 60

COURSEOUTCOMES

On completion of the course, the students will be able to

CO1: apply the acquired skills to design the documents. [K3]

CO2: demonstrate different types of charts in MS-Excel. [K3]

CO3: apply their creativity skill in power point presentation. [K3]

CO4: manipulate the Microsoft office programs to create professional and academic documents. [K3]

CO5: analyze the data using mathematical functions, charts in spread sheet and develop their technical skill. [K4]

Course Code 20UMTC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	M	M	L	M	L	L
CO2	H	H	L	M	M	M	L	H	H	M
CO3	H	H	M	M	M	M	L	M	L	L
CO4	H	H	M	L	L	M	L	M	M	L
CO5	H	H	H	L	L	M	L	M	L	-

Semester II	Electromagnetism, Optics and Electronics	Hours/Week: 4	
Allied Course I		Credits: 4	
Course Code 20UPMA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the fundamentals aspects of electromagnetism, optics, analog and digital electronics. [K1]

CO2: derive mathematical relations as well as the experimental concepts related to electromagnetism, geometrical and physical optics. [K2]

CO3: discuss the construction, working principle of electronic components also interpret the Boolean equations with number system & Boolean algebra. [K2]

CO4: apply the related concepts to solve the problems in electromagnetism, optics and basic Electronics. [K3]

CO5: compile the applications of electromagnetism, optics, amplifiers and number Systems. [K4]

Course Code 20UPMA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	L	-	-	-	M
CO2	H	H	H	L	-	-	-
CO3	H	M	M	M	-	-	-
CO4	H	H	H	M	-	L	-
CO5	H	M	M	M	H	-	-

Semester I/II	GENERAL PHYSICS	Hours/Week: 2	
Allied Course I Practical		Credits: 2	
Course Code 20UPMA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the practical, the students will be able to

CO1: apply the theoretical concepts in Mechanics and Properties of matter, Optics and Electronics related experiments. [K3]

CO2: draw the circuit diagram /experimental set up with tabular column/model graph and write the formula to calculate the required physical parameters. [K3]

CO3: execute the technical skills in handling the equipment and observe the required measurements related to the experiment. [K3]

CO4: calculate the necessary parameters using the formula/graph and complete the record work. [K3]

CO5: analyze the accuracy of the results obtained and compare it with the theoretical value. [K4]

Course Code 20UPMA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	L	H	L	-	-	M
CO2	H	H	H	M	-	-	L
CO3	H	H	H	M	L	H	-
CO4	H	H	H	M	L	M	H
CO5	M	M	M	H	M	M	H

Semester II	FUNDAMENTALS OF ACCOUNTING	Hours/Week:2	
SEC		Credits:2	
Course Code 20UMTS21		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

CO1: identify and be familiar with the classification of accounts and accounting terminology. [K1]

CO2: describe the rules of accounting and accounting process. [K2]

CO3: apply the rules for journalising, preparing day book and balancing the accounts. [K3]

CO4: prepare the final accounts. [K4]

CO5: integrate the trial balance and balance sheet. [K4]

Course Code 20UMTS21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	H	-	-	-	-	-
CO2	H	H	-	-	-	-	L
CO3	H	H	L	L	-	-	L
CO4	H	H	L	L	-	-	L
CO5	H	H	L	L	-	L	L

B.Sc. Physics

Programme Educational Objectives (PEOs)

The students will be able to

- acquire comprehensive knowledge and sound understanding of concepts in various branches of Physics and exhibit their abilities and skills leading to professional development and lifelong learning
- be empowered with a successful career in academia, research and industry by developing their scientific temper and communication skills
- possess cultural, social and spiritual values, sense of responsibility and character integrity for better citizenship.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
conceptual knowledge	√	√	-
logical thinking, problem solving, communication skills, research and employability	√	√	√
sustainable development	-	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Physics Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a : apply the acquired core knowledge in the concepts, principles and theories of fundamental and advanced Physics to pursue higher studies or employment.

PSO 1.b: be able to demonstrate their technical and observational skills in handling the equipments/instruments with precautions and to interpret the data.

PO2 – Communication Skills

PSO 2: exhibit oral and written communication skills in presenting complex and technical concepts of Physics to wider group of audience such as academic experts, professionals and society.

O3 – Scientific Reasoning and Problem Solving

PSO 3.a: determine the various parameters in Physics by appropriate experimental methods and thereby updating their knowledge and skills.

PSO 3.b: enrich their problem-solving skills that prepare them to meet the challenges in higher studies/career

PO4 – Critical Thinking and Analytical Reasoning

PSO 4.a: analyze the equations / theories /models in different branches of Physics and realize their significance in Science and technology and industry.

PSO 4.b: apply the principles of various fields of Physics/ Interdisciplinary areas to design innovative experiments and thereby developing their analytical skills.

PO5 – Digital Literacy, Self - directed and Lifelong Learning

PSO 5: be capable of utilizing modern digital tools, pertaining to their field of interest that enable them for self-directed lifelong learning.

PO6 – Co-operation/Team Work and Multi-Cultural Competence

PSO 6: build up their leadership qualities, team spirit and good interpersonal relations through their group practical, co-curricular and extra-curricular activities, internship and project work.

PO7 –Moral and Ethical Awareness

PSO 7: adhere the global standards of codes of conduct in Physics community and practice the imbibed moral values in their profession and society to attain sustainable environment.

Semester I	MECHANICS AND PROPERTIES OF MATTER	Hours/Week: 4	
Core Course 1		Credits: 4	
Course Code 20UPHC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the laws, concepts and theorems in Mechanics and Properties of Matter. [K1]

CO2: derive mathematical relations involved in Mechanics, Gravitation and Properties of matter by applying the concepts. [K2]

CO3: discuss the experimental methods to determine the various physical parameters related to Gravitation and Properties of Matter. [K2]

CO4: use the learned concepts to solve problems in Mechanics and Properties of Matter. [K3]

CO5: analyze the applications of laws and concepts in Mechanics and Properties of matter. [K4]

Course Code 20UPHC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	-	H	-	-	L	-	-	-	M
CO 2	H	-	H	-	M	M	-	-	-	-
CO 3	H	M	H	M	-	M	M	M	-	-
CO 4	H	-	M	-	H	H	-	-	M	-
CO 5	H	L	M	-	H	H	-	H	-	-

Semester I	ELECTRICITY	Hours/Week: 4	
Core Course 2		Credits: 4	
Course Code 20UPHC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the laws of electricity and magnetic effects of current. [K1]

CO2: derive the mathematical expression for electric field & potential in various charge distribution, capacitance of capacitors, sensitivity of bridge, thermodynamics of thermocouple and magnetic field due to current in different dimension. [K2]

CO3: explain the experimental methods for the determination of parameters related to electrostatics, current electricity, thermal and magnetic effects of current. [K2]

CO4: solve problems using the concepts learned in electricity. [K3]

CO5: analyze the capacitors of different configurations & combinations to determine the capacitance and to compute electrical parameters in current and thermoelectricity. [K4]

Course Code 20UPHC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	-	H	L	-	L	-	-	-	H
CO 2	H	M	H	M	-	-	-	-	M	-
CO 3	H	H	H	-	M	M	-	M	-	H
CO 4	H	H	H	H	-	M	-	H	-	-
CO 5	H	-	M	-	H	H	M	-	-	-

Semester I	ALLIED MATHEMATICS – I	Hours/Week: 6	
Allied Course-I		Credits: 4	
Course Code 20UMTA11		Internal 25	External 75

COURSE OUTCOMES

On completion of this course, the students will be able to

CO1: retrieve the fundamental principles, concepts in the areas of differential calculus, Integral calculus, differential equations and Algebra. [K1]

CO2: explain curvature & evolute of a curve, method of solving exact differential equations and linear differential equations with constant coefficients. [K2]

CO3: find the derivative and partial derivative of a given function, solution of simultaneous linear equations, eigen values and eigen vectors of a given matrix and double & triple integrals. [K2]

CO4: apply the knowledge gained in calculus, differential equations and algebra to other fields. [K3]

CO5: analyse the challenging problems in calculus, differential equations and algebra. [K4]

Course Code 20UMTA11	PO1	PO 2	PO3	PO4	PO5	PO6	PO 7
CO1	H	M	H	M	L	M	-
CO2	H	M	H	M	L	M	-
CO3	M	M	H	M	L	M	-
CO4	H	H	H	H	L	M	-
CO5	H	M	H	M	L	H	-

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11 UBCC11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]
- CO2: indicate the importance and benefits of upholding human values. [K2]
- CO3: explain the steps to be taken for upholding human values and human rights.[K2]
- CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]
- CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	-	-	L	-	H
CO 2	H	M	-	-	L	-	H
CO 3	H	M	-	-	L	-	H
CO 4	H	M	-	-	H	H	H
CO 5	H	M	-	-	L	H	H

Semester II	ELECTROMAGNETISM	Hours/Week: 4	
Core Course 3		Credits: 4	
Course Code 20UPHC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the concepts and principles in electromagnetism. [K1]

CO2: discuss the theories and experiments related to electromagnetism, principle of ac induction motor, ac circuits & ac bridges and magnetic materials. [K2]

CO3: derive the expressions related to transient response current and Maxwell's equations. [K2]

CO4: apply the learnt concepts and principles to solve problems in electromagnetism. [K3]

CO5: analyze the transient current in simple electronic circuits, ac circuits with LCR series & parallel, transformers and magnetic properties of materials. [K4]

Course Code 20UPHC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO7
CO 1	H	-	M	L	L	L	-	-	-	M
CO 2	H	H	H	M	M	M	-	-	-	-
CO 3	H	L	H	M	M	M	-	H	-	-
CO 4	H	L	M	M	H	H	-	-	L	-
CO 5	H	M	M	M	H	H	-	H	-	-

Semester II	HEAT AND THERMODYNAMICS	Hours/Week: 4	
Core Course 4		Credits: 4	
Course Code 20UPHC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain laws, concepts and physical parameters related to Heat & thermodynamics.

[K1]

CO2: describe experimental methods related to calorimetry, heat transfer process and liquefaction of gases. [K2]

CO3: derive the expressions for laws, physical parameters related to Heat & Thermodynamics and liquefaction of gases. [K2]

CO4: apply the learned concepts to solve the problems in Heat and Thermodynamics. [K3]

CO5: analyse variation of specific heat capacity with temperature, isothermal & adiabatic processes, change of entropy, applications of laws of thermodynamics and heat transfer process. [K4]

Course Code 20UPHC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	-	H	-	L	L	-	-	-	M
CO 2	H	H	H	H	M	M	L	-	-	-
CO 3	H	-	H	L	M	M	-	-	-	L
CO 4	H	-	M	-	H	H	-	-	-	-
CO 5	H	M	M	M	H	H	M	H	-	-

Semester I/II	GENERAL PHYSICS I	Hours/Week: 2	
Core Course Practical I		Credits: 2	
Course Code 20UPHC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the theoretical concepts in Properties of matter, Heat & Thermodynamics, electricity and Electromagnetism related experiments. [K3]

CO2: draw the circuit diagram /experimental set up with tabular column/model graph and write the formula to calculate the required physical parameters. [K3]

CO3: execute the technical skills in handling the equipment and observe the required measurements related to the experiment. [K3]

CO4: calculate the necessary parameters using the formula/graph and complete the record work [K3]

CO5: analyze the accuracy of the results obtained and compare it with the theoretical value. [K4]

Course Code 20UPHC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO6	PSO 7
CO 1	H	M	L	H	-	-	L	-	-	M
CO 2	H	H	H	H	-	M	-	-	-	L
CO 3	H	H	H	H	-	M	-	L	H	-
CO 4	H	H	H	-	H	M	-	L	M	H
CO 5	M	M	M	M	H	H	M	M	M	H

Semester II	ALLIED MATHEMATICS - II	Hours/Week: 3	
Allied Course-I		Credits: 3	
Course Code 20UMTA21		Internal 25	External 75

COURSE OUTCOMES

On completion of this course, students will be able to

CO1: retrieve the basic concepts in differentiation, integration, algebraic equations and trigonometric functions. [K1]

CO2: explain the concepts in Algebra, Vector Calculus and Trigonometry. [K2]

CO3: apply vector differentiation, vector integration and trigonometric functions in various fields. [K3]

CO4: find approximate solutions, establish the relation between roots and coefficients of an equation. [K3]

CO5: analyze the challenging problems in Vector Calculus, Algebra and Trigonometry. [K4]

Course Code 20UMTA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	M	M	-	-
CO2	H	L	H	M	M	L	-
CO3	H	M	H	M	M	L	-
CO4	M	M	L	M	M	-	-
CO5	H	L	L	M	M	L	-

Semester II	ALLIED MATHEMATICS - III	Hours/Week: 3	
Allied Course-I		Credits: 3	
Course Code 20UMTA22		Internal 25	External 75

COURSE OUTCOMES

On completion of this course, students will be able to

CO1: retrieve the basic concepts in Statistics and Operations Research. [K1]

CO2: explain the techniques used to solve the problems in Statistics and Operations research. [K2]

CO3: calculate some statistical constants to get statistical inference and O.R techniques to solve real life problems.[K3]

CO4: examine the statistical data to draw conclusion in Correlation and Regression. [K4]

CO5: analyze the challenging problems in real life to get solutions. [K4]

Course Code 20UMTA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	H	H	H	-
CO2	H	M	H	H	H	M	-
CO3	H	H	H	H	H	H	-
CO4	H	M	H	H	H	H	-
CO5	H	M	H	H	H	H	

Semester II	PROGRAMMING IN C	Hours/Week: 2	
SEC1		Credits: 2	
Course Code 20UPHS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO 1: write the basics of 'C' fundamentals. [K1]

CO 2: explain the functions of structures, arrays, and unions. [K2]

CO 3: describe how to use functions, category of functions and nesting functions. [K2]

CO 4: demonstrate a program by applying syntax in C language. [K3]

CO 5: illustrate the concepts behind constants, variables, data types, control statements, functions, arrays and structure. [K4]

Course Code 20UPHS21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO 7
CO 1	H	-	M	-	L	L	-	L	-	M
CO 2	H	-	H	-	L	L	-	M	-	M
CO 3	H	-	M	L	L	L	-	M	-	M
CO 4	H	H	M	H	H	H	M	H	L	-
CO 5	H	M	M	H	H	H	H	H	-	-

B.Sc. Chemistry

Programme Educational Objectives (PEOs)

PEOs are broad statements that describe the career and professional achievements that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the mission of the Institution.

The Programme Educational Objectives of B.Sc. Chemistry programme

The students will be able to

- ❖ To pursue further studies and succeed in academic and research Careers. To have opportunities to get employment at local and national level and to work as a teacher, analyst, quality controller, research assistant and in government sector jobs.
- ❖ To provide solutions for social issues such as environmental protection, occupational health and safety resource management and appropriate business skills.

Key components of the mission statement	PEO 1	PEO 2	PEO 3
Deep knowledge in theoretical and practical chemistry	✓	✓	✓
Profession development	✓	✓	✓
Research aptitude and personality	✓	✓	-
Applications of chemistry in everyday life to progress as entrepreneurs	-	✓	✓
Social awareness and responsibility	-	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Chemistry Programme, the students will be able to

PO1-*Disciplinary Knowledge*

PSO 1.a: apply the gained advanced knowledge in inorganic, organic and physical chemistry and related courses to pursue higher studies and employment.

PSO 1.b: Apply the good laboratory practices in core and related courses by appropriate experimental methods and safety measures and thereby updating their knowledge and skills.

PO2-*Communication Skills*

PSO 2: develop the confidence to articulate the basic concepts in chemistry in a clear and concise manner, to draw complex chemical structures and to execute and report the results of an experiment in a systematic way.

PO3 -*Scientific Reasoning and Problem Solving*

PSO 3.a: identify chemical formulae and analyse food, water and oil samples qualitatively and quantitatively by adapting updated skills in using modern tools and techniques.

PSO 3.b: characterize the compounds extracted from natural sources by applying the basic principles of various chemical methods.

PO4 -*Critical thinking and Analytical Reasoning*

PSO 4.a: critically analyze the concepts, theories and equations in various divisions of chemistry and perceive their significance in chemical industries and to conserve the environment in daily life

PSO 4.b: apply the integrated knowledge of different sections of chemistry and associated courses to design experiments and thereby developing their analytical experiences.

PO5 -*Digital Literacy, Self - directed and Lifelong learning*

PSO 5: Acquire the ability to engage in independent and life-long learning trained at personal/ career development concerning to their area of interest using contemporary digital tools to face the alteration of personal and social circumstances.

PO6 -*Cooperation/Team Work and Multi-Cultural Competence*

PSO 6: Promote self management in efficient functioning of an individual as an exemplary in representing and solving the current issues in a multicultural society for good nation building through their internship, group practical, co-curricular, extracurricular and extension activities.

PO7- *Moral and Ethical awareness*

PSO 7: Adapt the universal ethics and morals of chemical acts and practice the imbibed moral principles in their career and humanity to accomplish a green environment.

Semester I	INORGANIC CHEMISTRY - I	Hours/Week: 4	
Core Course-1		Credits: 4	
Course Code 20UCHC11		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- CO1: explain the basic concepts of inorganic chemistry, arrangements of elements in the long form of the Periodic table, nature of bonding, compounds of hydrogen and general properties of IA, IIA, and IIIA group elements. [K1]
- CO2: understand the periodic properties of elements, postulates of various theories, molecular forces, redox reactions, manufacturing process, properties and uses of some inorganic compounds. [K2]
- CO3: determine the periodic properties by different scales, hybridization- sp, sp², sp³, sp³d and sp³d² of inorganic molecules, balancing of redox equation, diagonal relationship of IA, IIA and IIIA group elements. [K2]
- CO4: examine the shielding effect on periodic properties, VSEPR theory in simple inorganic molecules, oxidation state of redox equations, peculiar structure of IA, IIA and III A elements. [K3]
- CO5: analyze the cause of effective nuclear charge in periodicity, lattice energy, bonding properties, oxidation number and ion-electron methods, process of metallurgy and contrast behavior of elements in the same group. [K4]

Course Code 20UCHC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1. b	PSO 2	PSO 3a	PSO 3.b	PSO 4a	PSO 4b	PSO5	PSO6	PSO7
CO 1	L	L	H	L	M	L	M	L	-	L
CO 2	L	L	H	M	M	H	M	M	-	L
CO 3	M	M	H	M	H	H	M	M	-	L
CO 4	M	M	H	L	L	H	H	M	-	L
CO 5	M	M	H	L	L	M	M	M	-	L

Semester I	ORGANIC AND PHYSICAL CHEMISTRY	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UCHC12		Internal 25	External 75

COURSE OUTCOME

On completion of the course, the students will be able to

- CO1: remember the IUPAC nomenclature of organic compounds, the gas laws, postulates of kinetic theory of gases, velocity of gas, movement of gas particles, size and types of colloids. [K1]
- CO2: understand the detection procedure for the elements present, nature of intermediates, nature of isomeric relation existing between organic compounds, critical phenomena, liquefaction of gases, effect of temperature on the various velocities, nature of collision, classification and properties of colloids. [K2]
- CO3: determine the molecular weight of organic acids and bases, empirical and molecular formula, Avogadro number – Loschmidt number, calculation of various velocities, van der Waal's and critical constants and applications of colloids. [K3]
- CO4: examine the type of organic reaction, polarization effects on the reaction mechanism, stability of intermediates, the reactivity of hydrocarbons, deviation of gases from ideal behavior, the different types of velocities, properties of colloids. [K4]
- CO5: analyse the PV isotherm of real and ideal gases, Maxwell's distribution curve, effect of temperature on various velocities, verification of Maxwell's law, stability of colloids. [K4]

Course Code 20UCHC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4. a	PSO 4. b	PSO5	PSO6	PSO7
CO 1	L	L	H	L	L	M	M	H	-	L
CO 2	L	L	H	L	L	L	M	M	-	M
CO 3	M	L	M	L	L	L	M	H	-	L
CO 4	M	M	H	L	L	H	M	H	-	L
CO 5	M	M	M	L	L	H	M	H	-	M

Semester I	ALLIED MATHEMATICS–I	Hours/Week:6	
Allied Course-I		Credits:4	
Course Code 20UMTA11		Internal 25	External 75

COURSEOUTCOMES

On completion of this course, the students will be able to

CO1: retrieve the fundamental principles, concepts in the areas of differential calculus, integral calculus, differential equations and Algebra. [K1]

CO2: explain curvature & evolute of a curve, method of solving exact differential equations and Linear differential equations with constant coefficients. [K2]

CO3: find the derivative and partial derivative of a given function, solution of simultaneous linea equations, eigen values and eigen vectors of a given matrix and double & triple integrals. [K2].

CO4: apply the knowledge gained in calculus, differential equations and algebra to other field [3]

CO5: analyse the challenging problems in calculus, differential equations and algebra. [K4]

Course Code 20UMTA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	M	L	M	-
CO2	H	M	H	M	L	M	-
CO3	M	M	H	M	L	M	-
CO4	H	H	H	H	L	M	-
CO5	H	M	H	M	L	H	-

Semester I	TAXONOMY OF ANGIOSPERMS AND MEDICINAL BOTANY	Hours/Week: 4	
Allied Paper		Credits: 4	
Course Code 20UBYA11		Internal 25	External 75

COURSE OUTCOMES

On completion of this course, the students will be able to

- CO1 : state the important plants in the natural ecosystem. [K1]
- CO2 : interpret the different groups of plants on earth with their names, distribution, habit, characteristics and affinities. [K2]
- CO3 : explain the medicinal and economic importance of angiosperms. [K2]
- CO4 : identify angiosperms in the field condition with their vegetative and floral characters and prepare herbarium as per the principles. [K3]
- CO5 : distinguish the use of traditional medicine in their life and to develop herbal preparations. [K4]

Course Code 20UBYA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	M	L	L	-	-
CO 2	H	M	M	L	L	-	-
CO 3	H	M	M	L	L	-	-
CO 4	M	M	M	M	L	-	-
CO 5	M	M	M	M	M	-	-

Semester I	VALUE EDUCATION	Hours/Week: 2	
Ability Enhancement Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	-	-	L	-	H
CO 2	H	M	-	-	L	-	H
CO 3	H	M	-	-	L	-	H
CO 4	H	M	-	-	H	H	H
CO 5	H	M	-	-	L	H	H

Semester II	ORGANIC CHEMISTRY-I	Hours/Week: 4	
Core Course III		Credits: 4	
Course Code 20UCHC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognize the reactivities of organic compounds in a given chemical reaction. [K1]

CO2: explain the preparation, properties and uses of aliphatic halogens, alcohols, ethers and carbonyl compounds, summarise the chemistry of aliphatic acids and their derivatives. [K2]

CO3: sketch the process of rectification of alcohols, predict the mechanism of various organic reactions, relate the properties of aliphatic acids. [K3]

CO4: discriminate the reactivities of aldehydes and ketones, compare the acidity of Aliphatic carboxylic acids, estimate the number of hydroxyl and alkoxy groups, categorise substituted acids. [K4]

CO5: analyze the synthetic utility of organometallic compounds, active methylene compounds, aldehydes & ketones, alcohols and ethers. [K4]

Course Code 20UCHC21	PO1		PO2	PO3		PO4		PO6	PO7	
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4. a	PSO 4. b	PSO5	PSO6	PSO7
CO 1	M	M	M	M	H	H	M	M	-	L
CO 2	L	L	M	M	H	H	M	M	-	L
CO 3	L	L	L	L	H	H	H	H	-	-
CO 4	L	L	H	H	H	H	H	H	-	L
CO 5	H	H	L	M	M	H	H	H	-	L

Semester II	INORGANIC AND PHYSICAL CHEMISTRY	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UCHC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO 1: recognize the metallurgical process, adsorption, catalysis, characteristics of IV A, VA, VII group elements and liquid state. [K1]

CO 2: understand the important ores, extraction of the metals, oxides, preparation, properties and uses of carbon, nitrogen and halogen compounds, properties of liquid state and the importance of catalysis and adsorption. [K2]

CO 3: explain the extraction of metals from the ores, preparation and properties of sulphur compounds, estimation of available chlorine in bleaching powder, predict the various physical properties of substances in liquid state, surface area, factors influencing adsorption. [K2]

CO4: apply the alloys, oxides, interhalogen compounds, xenon compounds, properties of liquid state, types of adsorption isotherm and catalysis to diversified fields. [K3]

CO 5: analyze the separation, purification of metals, preparation and properties of various compounds in IV A and VA group, isolation and estimation of halogens, various properties of liquids, different isotherms and catalysis. [K4]

Course Code 20UCHC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	L	M	M	L	H	M	L	-	-	L
CO 2	L	M	L	L	H	M	L	-	-	L
CO 3	M	L	L	L	H	L	M	-	-	L
CO 4	M	M	H	L	H	L	M	-	-	-
CO 5	M	M	H	L	H	L	M	-	-	L

Semester I/II	CORE PRACTICAL - I VOLUMETRIC ANALYSIS	Hours/Week: 2	
Core Course Practical -I		Credits: 2	
Course Code 20UCHC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: prepare the primary standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHC21P	PO1		PO2	PO3		PO4		PO6	PO7	
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4 .a	PSO 4. b	PSO5	PSO6	PSO7
CO 1	L	L	L	L	L	L	L	M	H	H
CO 2	L	M	M	M	M	M	M	M	H	H
CO 3	M	L	H	M	M	M	M	L	H	H
CO 4	H	M	H	M	M	H	M	L	H	H
CO 5	H	H	H	H	M	M	M	L	H	H

Semester II	ALLIED MATHEMATICS -II	Hours/Week:3	
Allied Course-I		Credits:3	
Course Code		Internal	External
20UMTA21		25	75

COURSEOUTCOMES

On completion of this course, the students will be able to

CO1: retrieve the basic concepts in differentiation, integration, algebraic equations and trigonometric functions. [K1]

CO2: explain the concepts in Algebra, Vector Calculus and Trigonometry. [K2]

CO3: apply vector differentiation, vector integration and trigonometric functions in various fields. [K3]

CO4: find approximate solutions, establish the relation between roots and coefficients of an equation. [K3]

CO5: analyze the challenging problems in Vector Calculus, Algebra and Trigonometry. [K4]

Course Code 20UMTA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	M	M	-	-
CO2	H	L	H	M	M	L	-
CO3	H	M	H	M	M	L	-
CO4	M	M	L	M	M	-	-
CO5	H	L	L	M	M	L	-

Semester II	ALLIED MATHEMATICS - III	Hours/Week:3	
Allied Course-I		Credits:3	
Course Code		Internal	External

COURSEOUTCOMES

On completion of this course, the students will be able to

CO1: retrieve the basic concepts in Statistics and Operations Research. [K1]

CO2: explain the techniques used to solve the problems in Statistics and Operations Research. [K2]

CO3: calculate some statistical constants to get statistical inference and use O.R techniques to solve real life problems. [K3]

CO4: examine the statistical data to draw conclusion in Correlation and Regression. [K4]

CO5: analyze the challenging problems in real life to get solutions. [K4]

Course Code 20UMTA22	PO1	PO2	PO3	PO4	PO5	PO6	PO 7
CO1	H	M	H	H	H	H	-
CO2	H	M	H	H	H	M	-
CO3	H	H	H	H	H	H	-
CO4	H	M	H	H	H	H	-
CO5	H	M	H	H	H	H	-

Semester II	APPLIED BOTANY	Hours/Week: 4	
Allied Course		Credits: 4	
Course Code 20UBYA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : state the applied areas of Botany. [K1]
- CO2 : learnt skills related to laboratory as well as industries based work. [K2]
- CO3 : explain the applications of plants in various industries and how to become an entrepreneur. [K2]
- CO4 : solve the issues related to the applied areas of Botany. [K3]
- CO5 : analyze the applied potential areas/branches of Botany. [K4]

Course Code 20UBYA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	L	L	L	-	-
CO 2	H	M	M	M	L	-	-
CO 3	H	M	M	M	L	-	-
CO 4	M	M	M	M	L	-	-
CO 5	M	M	M	M	L	-	-

Semester II	TAXONOMY OF ANGIOSPERMS, MEDICINAL BOTANY AND APPLIED BOTANY	Hours/Week: 2	
Allied Course		Credits: 2	
Course Code 20UBYA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : apply the basic concepts learn in taxonomy for the identification of Botanical families and preparation of slides. [K3]
- CO2 : draw the morphological features and identify the therapeutic properties of medicinal plants. [K3]
- CO3 : observe and comment on the applied botany specimens. [K3]
- CO4 : infer about the Horticulture technique. [K3]
- CO5 : analyze and categorize the horticultural techniques and in the related areas. [K4]

Course Code 20UBYA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	H	M	L	-	L
CO 2	H	M	H	M	L	M	L
CO 3	H	M	H	M	L	M	L
CO 4	H	M	H	M	L	M	L
CO 5	H	M	H	M	L	M	L

Semester II	POLYMER CHEMISTRY	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course -1			
Course Code 20UCHS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: remember the basic concepts in organic and inorganic polymers. [K1]

CO2: understand the various types and synthesis of organic and inorganic polymers. [K2]

CO3: discuss about the various types of polymerization, plastics and rubber with its preparation and uses. [K2]

CO4: apply the steps to prepare and improve the quality of different types of polymers. [K3]

CO5: analyse the different methodology for preparations, classification, properties and uses of polymers.[K4]

Course Code	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1. a	PSO 1. b	PSO 2	PSO 3. a	PSO 3. b	PSO 4. a	PSO 4 b	PSO5	PSO 6	PSO7
20UCHS21										
CO 1	H	M	H	H	L	L	M	--	-	M
CO 2	H	H	H	H	M	M	M	--	-	M
CO 3	H	H	H	H	H	H	H	---	-	H
CO 4	H	H	M	M	H	L	M	---	-	H
CO 5	H	H	H	M	M	M	M	---	-	H

B.Sc. Zoology

Programme Educational Objectives (PEOs)

The students will be able to

- To mould the students into efficient professionals in educational Institutions, Research centres, Medical laboratory, Zoos, Museums etc.
- To empower the learners with skills to promote self-employment opportunities.
- To uphold the moral standards of students to enable them to face challenges in life and to be better citizens.

Key components of mission statement	PEO1	PEO2	PEO3
To impart quality education to meet out the needs of rural women folk.	√	√	-
To mould the students to be responsible and successful citizens.		√	√
To motivate them to apply the academic skills for the improvement of society.	√	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Zoology Programme, the students will be able to

PO1- *Disciplinary Knowledge*

PSO 1.a: Apply their knowledge of fundamental principles in biological sciences to pursue higher studies in interdisciplinary subjects and compete in their profession.

PSO 1.b: Use their practical skills gained in various branches of biology to promote their career, entrepreneurial skills and research activities.

PO2-Communication Skills

PSO 2: Communicate the biological concepts confidently in interviews and career for their personal betterment and extension programmes to create awareness among the villagers.

PO3- Scientific Reasoning and Problem Solving

PSO 3.a: Identify the causes for the environmental and health issues by the application of biological principles.

PSO 3.b: Solve the problems in the management of quality of environmental resources and culture units of economically valuable animals by adapting the scientific methods.

PO4 - Critical thinking and Analytical Reasoning

PSO 4.a: Design innovative projects for the betterment of their research endeavors in the various branches of animal sciences.

PSO 4.b: Design self employment units with the knowledge gained in applied biology to promote self employment and entrepreneurship in the society.

PSO5- Digital Literacy, Self - directed and Lifelong Learning

PSO 5: Use their computer skills in M.S Office to compete in their higher education, competitive exams and career.

PO6 - Cooperation/Team Work and Multi-Cultural Competence

PSO 6: Work efficiently with team spirit in a team for its success by the skills acquired through internship programmes and group practicals and assignments.

PO7 –Moral and Ethical Awareness

PSO 7: Could develop scientific responsibilities regarding the disposal of wastes, usage of natural products instead of chemicals in day today life and preservation of fauna in their locality.

Semester I	INVERTEBRATA-I	Hours/Week: 4	
Core Course-1		Credits: 4	
Course Code 20UZYC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts of taxonomy and organization of invertebrates. [K1]

CO2: understand the biology and special adaptations of invertebrates. [K2]

CO3: explain the specialized structures and its role in physiology of invertebrates. [K2]

CO4: apply their knowledge to identify the special features of invertebrates. [K3]

CO5: analyze the salient features in invertebrates. [K4]

Course Code 20UZYC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	H	M	H	H	H	-	M	M
CO 2	H	M	H	M	H	H	H	L	M	H
CO 3	H	M	M	M	H	H	L	M	M	M
CO 4	H	M	H	H	H	H	M	M	M	H
CO 5	H	H	H	H	H	H	L	H	M	H

Semester I	INVERTEBRATA-II	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UZYC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts of taxonomy and organization of invertebrates. [K1]

CO2: understand the biology and special adaptations of invertebrates. [K2]

CO3: explain the specialized structures and its role in physiology of invertebrates. [K2]

CO4: apply their knowledge to identify the special features of invertebrates. [K3]

CO5: analyze the salient features in invertebrates. [K4]

Course Code 20UZYC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	H	M	H	H	H	-	M	M
CO 2	H	M	H	M	H	H	H	L	M	H
CO 3	H	M	M	M	H	H	L	M	M	M
CO 4	H	M	H	H	H	H	M	M	M	H
CO 5	H	H	H	H	H	H	L	H	M	H

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights.[K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	-	-	L	-	H
CO 2	H	M	-	-	L	-	H
CO 3	H	M	-	-	L	-	H
CO 4	H	M	-	-	H	H	H
CO 5	H	M	-	-	L	H	H

Semester II	CHORDATA- I	Hours/Week: 4	
Core Course-3		Credits: 4	
Course Code 20UZYC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy of chordates. [K1]

CO2: understand the biology of chordates. [K2]

CO3: explain the various physiological processes in chordates. [K2]

CO4: apply the knowledge to appreciate the adaptations of chordates. [K3]

CO5: analyze the unique features in chordates. [K4]

Course Code 20UZYC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	H	M	H	H	L	L	M	H
CO 2	H	H	L	H	M	M	L	L	M	L
CO 3	H	M	L	H	H	H	L	L	M	H
CO 4	M	M	M	H	H	M	L	L	M	H
CO 5	H	H	M	H	H	M	M	H	M	H

Semester II	CHORDATA- II	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UZYC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in taxonomy and internal organization of chordates.[K1]

CO2: understand the biology and special adaptations of animals. [K2]

CO3: explain the various physiological processes in chordates. [K2]

CO4: apply their knowledge to identify the special features of chordates. [K3]

CO5: analyze the salient features and evolution of organs in chordates.[K4]

Course Code 20UZYC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	H	M	H	H	L	L	M	H
CO 2	H	H	L	H	M	M	L	L	M	L
CO 3	H	M	L	H	H	H	L	L	M	H
CO 4	M	M	M	H	H	M	L	L	M	H
CO 5	H	H	M	H	H	M	M	H	M	H

Semester II	VERMICULTURE	Hours/Week: 2	
SEC -1		Credits: 2	
Course Code 20UZYS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: describe the basic concepts in vermitechology. [K1]

CO2: understand the culturable species of earthworm, techniques, methodology and management of pest in vermiculture. [K2]

CO3: explain the economic and ecological importance of vermiculture. [K2]

CO4: apply their knowledge and skills to set a vermiculture unit. [K3]

CO5: analyze the methods of vermiculture to carry out a successful culture unit for self employment.[K4]

Course Code 20UZYS21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	M	H	H	H	H	-	H	H
CO 2	H	M	M	H	H	H	H	-	H	H
CO 3	H	M	M	H	H	M	H	L	M	H
CO 4	H	M	L	H	H	M	H	H	L	H
CO 5	H	H	L	H	H	M	H	H	M	H

Semester I/II	CORE PRACTICAL - I LAB IN INVERTEBRATA AND CHORDATA	Hours/Week: 2	
Core Course-3		Credits: 2	
Course Code 20UZYC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the key concepts in biology to identify the invertebrates and chordates. [K3]

CO2: use the theoretical concepts to learn the various systems in animals. [K3]

CO3: make use of their knowledge and skills to observe the unique features of animals.[K3]

CO4: identify the features in the anatomical systems of invertebrates and chordates. [K3]

CO5: compare the ecological and economic importance of invertebrates and chordates. [K4]

Course Code 20UZYC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	M	H	H	H	H	L	H	H
CO 2	H	H	M	M	H	H	M	L	H	H
CO 3	H	M	M	M	H	H	H	L	H	H
CO 4	H	H	M	M	H	H	H	L	H	H
CO 5	H	H	M	L	H	H	H	H	M	H

Semester I	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – I	Hours/Week: 4	
Allied Course -1		Credits: 4	
Course Code 20UCHA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: define the basic principles, statements, laws and theories in chemistry. [K1]

CO2: understand the fundamental concepts in organic, inorganic and physical chemistry.
[K2]

CO3: illustrate the preparations, uses and applications of polymers, hydrogen and water, various metallurgical process, bonding theories, colloids, sols, emulsion and gels
[K2]

CO4: predict the type of reactions involved in polymers preparation, utility of biomedical polymers, suitable process for metal extraction and water purification, shape of molecules using VSEPR, VB and MO theories, properties of gaseous and colloidal substances. [K3]

CO5: analyze different methodology of preparing polymers, separation of metals from their ores, water purification processes, various bonding theories, gas laws and properties various colloids, applications of colloids and biomedical polymers. [K4]

Course Code 20UCHA11	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO 1	H	L	L	H	L	L	L
CO 2	L	L	-	-	L	-	-
CO 3	-	H	-	M	L	-	M
CO 4	H	L	-	L	M	L	L
CO 5	H	H	M	M	L	L	-

Semester II	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II	Hours/Week: 4	
Allied Course I		Credits: 4	
Course Code 20UCHA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils, fats, soaps, detergents, biomolecules, fuels, fertilizers and pollutants. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds, sources, effects and control measures of pollutions, methods for removal of salt from water. [K2]

CO4: comprehend the classification of biomolecules, fuels, fertilizers, catalyst, pollutions, application of adsorption and biomolecule. [K3]

CO5: analyze the oils, fats and biomolecules functions, sources of pollutions, characteristics of catalysts and the effects with control measures for various pollution.[K4]

Course Code 20UCHA21	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO 1	M	-	H	-	-	-	L
CO 2	H	H	M	M	M	-	L
CO 3	H	H	M	M	L	H	-
CO 4	H	H	H	M	M	H	M
CO 5	H	H	L	-	H	-	L

Semester II	VOLUMETRIC ANALYSIS	Hours/Week: 2	
Allied Course I		Credits: 2	
Practical Course			
Course Code 20UCHA21P		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	H	-	M	M	M
CO 2	H	H	H	M	H	-	M
CO 3	H	H	H	L	-	-	L
CO 4	H	H	H	M	L	M	M
CO 5	H	H	M	L	L	M	L

B.Sc. Home Science - Nutrition and Dietetics

Programme Educational Objectives (PEOs)

The students will be able to

- become professionally competent nutritionist, dieticians, health care workers in hospitals, health departments, speciality clinics, fitness centres, hospitality industries, Social welfare organizations. and public health agencies or member of teaching faculty in higher education or become self-employed.
- employ their culinary skills, artistic skills, interpersonal skills and technical skills both in career and home for holistic living.
- follow professional ethics and provide feasible solutions for health related problems in social, cultural and environmental issues.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
prepare the students in becoming self-reliant	√	√	√
establish of an entrepreneur in any of the varied fields of Home Science	√	√	√
uphold professionalism and ethics for improving their quality of living	√	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Home Science – Nutrition and Dietetics Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO1.a: apply the knowledge of the basic principles involved in various branches of Home Science incorporated with knowledge in related courses in higher studies.

PSO1.b : apply their professional and entrepreneurial skills in the areas such as Food Science, Nutrition Science, Dietetics, Human Development, Textiles and Clothing, Family Resource Management, Food Service Management, Community Nutrition,

Family Dynamics, Extension Education and Computer for establishing a career in food and hospitality industries and other allied organizations leading to economic empowerment.

PO 2: *Communication Skills*

PSO 2.a: use appropriate communication strategies to deliver the learnt concepts effectively to peer groups, job providers and common people in relevant situations.

PSO 2.b: hone communication skills in effective presentation of curricular ideas, concept and scientific principles in various circumstances.

PO 3: *Scientific Reasoning and Problem Solving*

PSO 3: categorise the prevalent demands for Home Science related issues in the contemporary society and formulate new methods to fulfill them with the best possible service for human upliftment.

PO 4: *Critical thinking and Analytical Reasoning*

PSO 4.a: evaluate the practices in cookery, diet planning, diet counselling, food analysis, food preservation, food safety and quality control, bakery and confectionary, Human Development, pre-school management, textiles and clothing, resource management, interior decoration, housekeeping and arrive at a conclusion to instill a health culture in the community through outreach programmes.

PSO 4.b : analyse critically the current situation of the society in human health related issues and find out the solutions from acquired practical skills gained in the laboratory.

PO 5: *Digital Literacy, Self - directed and Lifelong learning*

PSO 5: upgrade their learning skills in their field of interest through ICT to meet the challenges in competitive examinations and grab more career opportunities.

PO 6: *Cooperation/Team Work and Multi-Cultural Competence*

PSO 6: maintain a harmonious interpersonal relationship as member or leader in team works and their wholesome personality, to attain a goal.

PO 7: *Moral and Ethical awareness*

PSO 7: practise the inculcated moral values and ethics for promoting sound health and holistic living by considering about environmental issues.

	NUTRITION SCIENCE	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UHSC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the concept of health, nutrition, nutritional status, the food sources and deficiency diseases of all nutrients. [K1]

CO2: discuss the dimensions of health, energy value of food, BMR, quality of protein and classification of macro and micro nutrients. [K2]

CO3: explain the functions, digestion and absorption of macro and micro nutrients. [K2]

CO4: identify the factors affecting BMR, absorption of various nutrients and write the recommended Dietary Allowances for different stages of life. [K3]

CO5: analyze the causes and consequences of nutrient deficiency diseases. [K4]

Course Code 20UHSC12	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO7
CO1	M	M	M	H	L	L	L	H	-	-
CO2	H	M	M	H	L	L	L	H	-	-
CO3	H	M	M	H	L	M	M	H	-	-
CO4	H	M	M	H	H	H	H	H	-	-
CO5	H	M	M	H	H	H	H	H	-	-

Semester I	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – I	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCNA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical components involved in polymers, drugs, reagents
and the removal of hardness of water, types of hydrogen isotopes and colloids. [K2]

CO3: discuss about the preparations and properties of polymers, antibiotics, different
concentrated reagents, soft water and colloids; inter conversion of hydrogen. [K2]

CO4: apply different type of reactions and steps involved in polymer synthesis, water
purification, reagents, drugs and colloidal substances. [K3]

CO5: analyze various forms of polymers, isotopes of hydrogen, water softening processes,
reagent used in laboratory, drug action with side effects and different colloids. [K4]

Course Code 20UCNA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	M	L	M	M	H
CO2	H	M	M	L	M	M	H
CO3	M	M	M	L	H	M	H
CO4	H	M	M	L	H	M	H
CO5	M	M	M	L	H	M	H

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them

committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	FOOD SERVICE MANAGEMENT	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UHSC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concept and history of food service establishment, physical plant and equipment, quantity food production and service, financial management, hygiene, sanitation and safety. [K1]

CO2: explain the different types of food service establishment, kitchen, storage areas, equipment, menus, styles of service, cost, account, hygiene and accidents. [K2]

CO3: discuss the functions and laws of food service management, selection criteria of kitchen, storage, service area and equipment, factors influencing menu planning, food losses and safety. [K2]

CO4: identify the management tools, plant locations, effective use of left over foods, profit and loss account and safety measures in food service establishments. [K3]

CO5: focus on the organisation structure of the food service establishment, care and maintenance of equipment, method of purchasing, storage, receiving of food, cost control and safe handling of food. [K4]

Course Code 20UHSC22	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	L	M	-	-	-	M	-	-
CO2	H	M	L	M	-	L	L	M	-	-
CO3	H	L	M	M	L	L	L	M	-	-
CO4	H	L	M	M	H	L	H	M	-	M
CO5	H	M	M	M	H	M	H	M	-	L

Semester II	FOOD SCIENCE LAB	Hours/Week: 2	
Core Practical - 1		Credits: 2	
Course Code		Internal	External
20UHSC21P		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the structure of starches and techniques involved in food preparations. [K3]

CO2: prepare various recipes by using different cooking methods. [K3]

CO3: determine the changes that occur during cooking of different foods such as cereals, pulses, vegetables, fruits, sugars, milk, egg, meat, poultry and fish. [K3]

CO4: calculate the percentage of edible portion of various foods and utilize the prepared score card for evaluating the sensory characteristics of foods and prepare the record. [K3]

CO5: analyse the factors affecting the cooking quality of different foods. [K4]

Course Code 20UHSC21P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO6	PSO7
CO 1	H	H	L	L	H	H	H	L	L	L
CO 2	H	H	M	M	H	H	H	H	H	M
CO 3	H	H	M	M	H	H	H	H	M	L
CO 4	H	H	M	M	H	H	H	H	M	-
CO 5	H	H	M	M	H	H	H	H	H	M

Semester II	ALLIED COURSE -I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCNA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils and fats, soaps and detergents, biomolecules, fuels and fertilizers, cosmetics and cleaning agents. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds. [K2]

CO4: comprehension about the classification of biomolecules, fuels, fertilizers and catalyst; properties of oil & fats; application of adsorption ; uses of biomolecule, cleaning agents and cosmetics. [K3]

CO5: Analyze the oils, fats and biomolecule functions, fuel and fertilizers, cleaning agents and cosmetics; characteristics and catalytic properties of chemicals. [K4]

Course Code 20UCNA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	M	M	L	M	H
CO2	H	M	M	M	L	M	H
CO3	M	M	M	M	L	M	H
CO4	M	M	M	M	L	M	H
CO5	M	M	M	M	L	M	H

Semester II	VOLUMETRIC ANALYSIS	Hours/Week: 2	
Allied Course Practical -I		Credits: 2	
Course Code 20UCNA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCNA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	M	L	H	M
CO2	H	M	H	M	L	H	M
CO3	H	M	H	M	L	H	M
CO4	H	M	H	M	L	H	M
CO5	H	M	H	M	L	H	M

Semester II	MS-OFFICE – LAB	Hours/Week: 2-T-1,P-1	
Skill Enhancement Course Practical-1		Credits: 2	
Course Code 20UHSS21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the commands for windows and Microsoft Office. [K3]

CO2: apply the technical skills to create the documents in MS Office. [K3]

CO3: execute the prepared documents in MS Word, MS Excel, MS Power point and MS Access. [K3]

CO4: prepare the record with formatted outputs. [K3]

CO5: examine the formatting options and short cut keys used in MS Office. [K4]

Course Code 20UHSS21P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	L	M	L	M	M	H	-	-
CO2	H	H	L	M	H	H	H	H	-	-
CO3	H	H	M	M	H	H	H	H	-	-
CO4	H	H	M	H	L	H	H	H	M	-
CO5	H	H	M	H	L	H	H	H	-	M

Semester I	HOME FURNISHING	Hours/Week: 4	
Allied Course-I		Credits: 4	
Course Code 20UHSA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the concept, objectives and importance of home furnishing accessories, stain removal and dry cleaning. [K1]

CO2: classify the types of home furnishing, stain and dry cleaning. [K2]

CO3: select the appropriate furnishing materials for various home furnishing and methods of stain removal and dry cleaning. [K2]

CO4: apply the techniques involved in home furnishing, stain removal and dry cleaning. [K3]

CO5: analyze the factors to be considered while planning to furnish the home and care and maintenance of home furnishing materials. [K4]

Course Code 20UHSA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	M	M	-	-	H	-	-
CO2	H	M	-	-	H	-	-
CO3	H	M	-	-	H	-	-
CO4	H	M	H	M	H	-	M
CO5	H	M	H	M	H	-	-

Semester II	ENTREPRENEURIAL SKILL DEVELOPMENT	Hours/Week: 4	
Allied Course-1		Credits: 4	
Course Code 20UHSA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: state the concept of entrepreneurship, entrepreneur management, supporting institutions and organizational structure of a garment unit, departments in a garment unit, factory design and layout and performance of Indian garment export. [K1]
- CO2: indicate the qualities of an entrepreneur, characteristics and scope of management, production, planning and controlling process in garment industries, personnel involved in different departments and SWOT analysis. [K2]
- CO3: classify the types of entrepreneur, building, factory layout process and commercial banks. [K2]
- CO4: identify the role of factory layout, merchandiser, entrepreneur, manager, supporting institutions and departments in a garment unit, advantages and limitations of building and setting of a garment unit for export market. [K3]
- CO5: analyse the functions of management, supporting institutions, personnel nature of the job, requirements of personnel related to health, safety and export procedures. [K4]

Course Code 20UHSA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	H	H	-	-	M	-	-
CO2	H	H	-	-	M	-	-
CO3	H	H	-	-	M	-	-
CO4	H	H	H	H	M	-	L
CO5	H	H	M	H	M	-	L

Semester II	HOME TEXTILES LAB	Hours/Week: 2	
Allied Course		Credits: 2	
Practical-1		Internal	External
Course Code 20UHSA21P		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: choose the appropriate raw materials and principles involved in developing home furnishing accessories. [K3]

CO2: make use of the basic drafting and stitching procedure for preparing household accessories. [K3]

CO3: construct the home furnishing accessories with novel ideas. [K3]

CO4: identify the type of stain and techniques involved to remove it and prepare the record. [K3]

CO5: analyse the factors influencing the preparation of home accessories. [K4]

Course Code 20UHSA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO 1	PSO 2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	H	M	L	M	M	-	-
CO2	H	M	M	M	M	-	-
CO3	H	M	H	M	M	-	-
CO4	H	M	H	H	M	M	-
CO5	H	M	M	H	M	-	-

B.Sc. Biochemistry

Program Educational Objectives (PEOs)

The students will be able to

- apply fundamental knowledge related to pure sciences in an interdisciplinary manner for providing innovative solutions to need based problems for national and global impact.
- analyze scientific data, draw objective conclusions related to Biochemistry and apply this knowledge for human welfare.
- gain domain knowledge and know-how for successful career in academia and industry.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
Enhancing understanding of biochemistry, molecular biology, and science	√	√	√
To develop entrepreneur skill	√	√	√
Innovative research and careers, to create a positive impact on society	√	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO. **PROGRAMME SPECIFIC OUTCOMES**

On completion of B.Sc. Biochemistry Programme the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1: Apply the fundamental knowledge of Biochemistry incorporated with knowledge in related courses that would enable them to comprehend the emerging and advanced biochemical concepts in life sciences to pursue higher studies.

PO2 – Communication Skills

PSO 2: Apply the acquired conceptual knowledge with communicative skills by connecting disciplinary and interdisciplinary aspects of Biochemistry, Microbiology, Biotechnology and Biology which can be extended to society.

PO3 – Scientific Reasoning and Problem Solving

PSO 3.a: Evaluate the need and impact of scientific solutions on the environment and society, keeping in view of their sustainable development and to have entrepreneurial skills acquired by skill oriented course

PSO 3.b: Strengthen their biochemical, biological and chemical sciences experimental techniques to meet future challenges in their career.

PO4 – Critical Thinking and Analytical Reasoning

PSO 4.a: Analyze the techniques, reactions and concepts in various fields of Biochemistry and to provide valid suggestions to the industry.

PSO 4.b: Apply the principles of various fields of biochemistry to provide cost efficient solutions in life science related issues for the betterment of society.

PO5 – Digital Literacy, Self - directed and Lifelong Learning

PSO 5.a: Use standard laboratory protocols of Biochemistry and biology and apply computers for data acquisition through available software's.

PSO 5.b: Apply various technical knowledge with more parameters and updating their academics as lifelong learning activities.

PO6 – Co-operation/Team Work and Multicultural Competence

PSO 6: Uphold leadership qualities, team spirit and good interpersonal skills in team works.

PO7 –Moral and Ethical Awareness

PSO 7: Follow the global standards of codes of conduct in life science community and practice the imbibed moral values in their profession and society to maintain sustainable environment.

Semester I	BIOMOLECULES	Hours/Week: 4	
Core Course1		Credits: 4	
Course Code 20UBCC11		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: explain the various elements present in the biomolecules such as carbohydrates, proteins, lipids, nucleic acids and vitamins, their occurrence and classification [K1].

CO2: identify various molecular structures and to understand monomers, polymers and isomeric forms. [K2]

CO3: Explain the properties of biomolecules. [K2]

CO4: Apply the role of biomolecules in life. [K3]

CO5: correlate fundamental properties of biomolecules, their role in chemical reactions within living system and to prevent diseases. [K4]

Course Code 20UBCC11	PO1	PO2	PO3		PO4		PO5		PO6	PO7
	PSO1	PSO2	PSO3.a	PSO3.b	PSO4.a	PSO4.b	PSO5.a	PSO5.b	PSO6	PSO7
CO 1	H	H	M	M	L	L	H	M	L	L
CO 2	H	H	H	M	M	L	H	M	L	L
CO 3	H	H	H	M	M	M	H	H	L	L
CO 4	H	H	H	M	H	M	H	H	L	M
CO 5	H	H	H	M	H	M	H	H	L	H

Semester I	BIOCHEMICAL TECHNIQUES	Hours/Week: 4	
Core Course 2		Credits: 4	
Course Code 20UBCC12		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

- CO1 : explain the basic principles of Biochemical Techniques. [K1]
- CO2 : determine the applications of biochemical techniques in various fields. [K2]
- CO3 : extract various biomolecules using biochemical techniques. [K2]
- CO4 : apply various biochemical Techniques in analytical Laboratories. [K3]
- CO5 : demonstrate various analytical techniques to interpret biological studies. [K4]

Course Code 20UBCC12	PO1	PO2	PO3		PO4		PO5		PO6	PO7
	PSO 1	PSO 2	PSO3 3.a	PSO3 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO 6	PSO7
CO 1	H	H	M	H	H	M	H	H	L	M
CO 2	H	M	H	H	H	H	H	H	L	M
CO 3	H	H	M	H	H	H	H	H	L	M
CO 4	H	H	H	H	M	H	H	H	L	M
CO 5	H	H	H	M	H	H	H	M	L	H

Semester I	ALLIED COURSE -I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – I	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCHA11		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: define the basic principles, statements, laws and theories in chemistry. [K1]

CO2: understand the fundamental concepts in organic, inorganic and physical chemistry.
[K2]

CO3: illustrate the preparations, uses and applications of polymers, hydrogen and water,
various metallurgical process, bonding theories, colloids, sols, emulsion and gels. [K2]

CO4: predict the type of reactions involved in polymers preparation, utility of biomedical
polymers, suitable process for metal extraction and water purification, shape of
molecules using VSEPR, VB and MO theories, properties of gaseous and colloidal
substances. [K3]

CO5: analyze different methodology of preparing polymers, separation of metals from their
ores, water purification processes, various bonding theories, gas laws and properties of
various colloids, applications of colloids and biomedical polymers. [K4]

Course Code 20UCHA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	M	M	H	M	L	L	L
CO 2	H	M	H	M	L	L	L
CO 3	H	M	H	M	M	L	M
CO 4	H	M	H	M	M	L	M
CO 5	H	M	H	M	M	L	M

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]
- CO2: indicate the importance and benefits of upholding human values. [K2]
- CO3: explain the steps to be taken for upholding human values and human rights.[K2]
- CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]
- CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	-	-	L	-	H
CO 2	H	M	-	-	L	-	H
CO 3	H	M	-	-	L	-	H
CO 4	H	M	-	-	H	H	H
CO 5	H	M	-	-	L	H	H

Semester II	ENZYMES	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UBCC21		Internal 25	External 75

COURSE OUTCOME

On Completion of the course, the students will be able to

- CO1 : define the fundamentals of enzymology and the importance of enzymes in biological reactions. [K1]
- CO2 : understand the enzyme classification, functions, isolation, extraction and Purification. [K2]
- CO3 : infer the enzyme catalysed reactions and the factors affecting enzymatic actions. [K2]
- CO4 : apply biochemical calculation for enzyme kinetics to understand the mechanism of enzyme action. [K3]
- CO5 : illustrate the major applications of enzymes in industry and medicine. [K4]

Course Code 20UBCC21	PO1	PO2	PO3		PO4		PO5		PO6	PO 7
	PSO 1	PSO 2	PSO3 3.a	PSO3 3.b	PSO 4.a	PSO 4 .b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO 1	H	H	M	H	H	M	H	H	L	M
CO 2	H	M	H	H	H	H	H	H	L	M
CO 3	H	H	M	H	H	H	H	H	L	M
CO 4	H	H	H	H	M	H	H	H	L	M
CO 5	H	H	H	M	H	H	H	M	L	H

Semester II	METABOLISM	Hours/Week: 4	
Core Course-5		Credits: 4	
Course Code 20UBCC22		Internal 25	External 75

COURSE OUTCOME

On Completion of the course, the students will be able to

- CO1 : explain all metabolic pathways of carbohydrates, lipid, amino acids, purine and pyrimidine. [K1]
- CO2 : discuss and elaborate the bioenergetics of TCA cycle, oxidation, reduction, purine and pyrimidine. [K2]
- CO3 : identify the pathways of ETC, oxidative phosphorylation HMP, ketone body metabolism, glycerol metabolism, glycine, cysteine metabolism. [K2]
- CO4 : differentiate and correlate the pathways of ETC, oxidative phosphorylation HMP, glycogenolysis, glycogenesis, triglycerides, phospholipids, cholesterol metabolism, protein, carbohydrate and fat metabolism. [K3]
- CO5 : illustrate the various metabolic pathways of carbohydrate, protein, lipid and Nucleic acids. [K4]

Course Code 20UBCC22	PO1	PO2	PO3		PO4		PO5		PO6	PO7
	PSO 1	PSO 2	PSO3 3.a	PSO3 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO 1	H	M	H	H	H	M	L	M	L	H
CO 2	H	H	H	M	M	M	L	L	L	H
CO 3	H	H	H	H	H	H	L	M	L	H
CO 4	H	H	H	M	H	M	L	L	L	H
CO 5	H	M	H	H	M	H	L	M	L	H

Semester I/II	CORE PRACTICAL - I BIOMOLECULES	Hours/Week: 2	
Core Course-3		Credits: 2	
Course Code 20UBCC21P		Internal 40	External 60

COURSE OUTCOMES

On Completion of the course, the students will be able to

- CO1: apply the principle and procedure to detect various biomolecules present in the given sample. [K3]
- CO2: identify the given spotters and comment on them with illustrations. [K3]
- CO3: observe the reactions of the biomolecules through various biochemical tests and prepare various biochemical polymers from natural sources.[K3]
- CO4: infer the findings of the biochemical reactions, report the results and complete the record note book. [K3]
- CO5: analyze and compare the properties of various biomolecules. [K4]

Course Code 20UBCC21P	PO1	PO2	PO3		PO4		PO5		PO6	PO7
	PSO1	PSO2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO 7
CO 1	H	H	M	L	--	L	--	-	M	M
CO 2	H	H	L	H	H	H	L	M	M	--
CO 3	H	H	L	H	H	H	M	M	M	L
CO 4	H	H	L	H	H	H	M	H	H	--
CO 5	H	H	L	H	H	H	H	H	H	M

Semester II	ENDOCRINOLOGY	Hours/Week: 2	
SEC -1		Credits: 2	
Course Code 20UBCS21		Internal 40	External 60

COURSE OUTCOME

On Completion of the course, the students will be able to

- CO1 : recall about hypothalamus and different endocrine glands and their role in regulating homeostasis. [K1]
- CO2 : explain about the biosynthetic pathways, structure, secretion and functions of hormones. [K2]
- CO3 : develop the knowledge on mechanism of action of hormones and their effect on target cells. [K2]
- CO4 : analyse the important hormonally regulated physiological processes and disorders. [K3]
- CO5 : correlate symptoms of major disorders associated with selected endocrine gland. [K4]

Course Code 20UBCS21	PO1	PO2	PO3		PO4		PO5		PO6	PO7
	PSO1	PSO2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5.a	PSO 5.b	PSO6	PSO7
CO 1	H	H	M	L	L	L	L	L	-	-
CO 2	H	H	L	-	-	-	-	L	-	-
CO 3	H	H	L	-	-	-	-	L	L	-
CO 4	H	H	L	L	M	L	-	L	-	-
CO 5	H	H	L	M	M	H	M	H	L	-

Semester II	ALLIED COURSE -I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCHA21		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils, fats, soaps, detergents, biomolecules, fuels, fertilizers and pollutants. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds, sources, effects and control measures of pollutions, methods for removal of salt from water. [K2]

CO4: comprehend the classification of biomolecules, fuels, fertilizers, catalyst, pollutions, application of adsorption and biomolecule. [K3]

CO5: analyze the oils, fats and biomolecules functions, sources of pollutions, characteristics of catalysts and the effects with control measures for various pollution. [K4]

Course Code 20UCHA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	M	M	H	M	L	L	L
CO2	M	M	H	M	L	L	M
CO3	H	M	H	H	M	L	H
CO4	H	M	H	H	M	L	H
CO5	H	M	H	H	H	L	H

Semester II	VOLUMETRIC ANALYSIS	Hours/Week: 2	
Allied Course Practical -I		Credits: 2	
Course Code 20UCHA21P		Internal 40	External 60

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	M	L	L	M
CO2	M	M	H	M	M	M	H
CO3	M	M	H	M	M	M	H
CO4	H	M	H	M	L	M	H
CO5	H	M	H	M	L	M	H

B.Sc. Microbiology

Programme Educational Objectives (PEOs)

The Programme Educational Objectives of B.Sc. Microbiology Programme are to prepare the students

PEO1: To undertake the concept of Microbiology for pursuing higher studies, successful career in medical laboratories, Medical coding sectors, pharmaceutical industries, Food industries and as successful teachers in schools and colleges.

PEO2: To employ their practical skills in Genetics, Molecular Biology, Immunology, Bioinformatics, Industrial, Food, Agricultural and Clinical Microbiology.

PEO3: To excel their capabilities through the use of new technologies to meet societal demands in research and effectively function as an entity in an environment with ethical values

Key Components of the Mission Statement	PEO1	PEO2	PEO3
Skilled graduates			-
theoretical and practical foundations			-
professional and ethical responsibilities.	-	-	

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Microbiology Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a:acquired knowledge about the basic concepts in various disciplines of Microbiology incorporated with knowledge in related courses for higher studies and employment.

PSO 1.b:demonstrate the techniques, tools and scientific procedures, follow safety measures and interpret the results in the field of Microbiology / chemistry and biology.

PO2 – Communication Skills

PSO 2: communicate strategies in Microbiology for effectively upgrade their career as academicians, lab technicians, medical coders and quality control experts in various organizations.

PO3 – Scientific Reasoning and Problem Solving

PSO 3.a: explain and elaborate the sustainable development of microbes, their classification, metabolic processes and their molecular mechanisms in a systematic way.

PSO 3.b: make use of the knowledge and skill to handle various basic and analytical instruments used in microbiology laboratories for analyzing microbial diversity and molecular mechanisms.

PO4 – Critical Thinking and Analytical Reasoning

PSO 4.a: interpret the applications of biological sciences with molecular techniques to manipulate biological systems and produce novel products to meet the societal needs.

PSO 4.b: evaluate various diseases and their transmission, treatment, control and preventive methods with the help of modern techniques in the field of medical laboratory and pharmaceutical industries.

PO5 – Digital Literacy, Self - directed and Lifelong Learning

PSO 5: make use of ICT in their career for self-directed and lifelong learning in newly emerging disciplines of Microbiology and their area of interest.

PO6 – Co-operation/Team Work and Multicultural Competence

PSO 6: work in a team with team spirit or lead with entrepreneurial aspects and recent updates in course contents.

PO7 –Moral and Ethical Awareness

PSO 7: uphold and develop scientific responsibility towards social and ethical in the laboratory works of Microbiology.

Semester I	GENERAL MICROBIOLOGY	Hours/Week: 4	
Core Course-1		Credits: 4	
Course Code 20UMBC11		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: recall the historical perspective of the microbial world and basic structural features of microscopic organisms. [K1]

CO2: discuss the contributions of microbiologists and functional features of microbial diversity. [K2]

CO3: explain the discovery, scope and relevance of microbiology and microorganisms. [K2]

CO4: interpret the cellular organization, life cycle and economic importance of prokaryotic and eukaryotic cells. [K3]

CO5: analyze the inclusion bodies and organelles to build the structural properties of prokaryotic and eukaryotic cells. [K4]

Course Code 20UMBC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	H	L	L	L	L	L	-	-
CO2	H	L	H	M	L	L	L	L	-	-
CO3	H	M	H	M	L	M	L	L	-	-
CO4	H	M	M	M	L	L	M	L	-	-
CO5	H	L	M	M	L	L	L	H	-	-

Semester I	BIOCHEMISTRY	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UMBC12		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: recall the fundamental structure, physical and chemical properties of biomolecules. [K1]

CO2: explain the chemistry of biomolecules and their biological significance. [K2]

CO3: illustrate the classification and structure of macromolecules, vitamins and hormones. [K2]

CO4: apply knowledge on structural organization and conformation of proteins and nucleic acids. [K3]

CO5: analyze the metabolic actions and diseases associated with hormonal imbalance. [K4]

Course Code 20UMBC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	L	H	L	L	M	L	L	-	-
CO2	H	L	H	L	M	M	L	L	-	-
CO3	H	L	M	H	M	M	L	L	-	-
CO4	M	H	L	L	L	M	M	L	-	-
CO5	M	M	L	H	L	M	M	H	-	-

Semester I	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – I	Hours/Week: 4	
Allied Course -1		Credits: 4	
Course Code 20UCHA11		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: define the basic principles, statements, laws and theories in chemistry. [K1]

CO2: understand the fundamental concepts in organic, inorganic and physical chemistry.
[K2]

CO3: illustrate the preparations, uses and applications of polymers, hydrogen and water, various metallurgical process, bonding theories, colloids, sols, emulsion and gels.
[K2]

CO4: predict the type of reactions involved in polymers preparation, utility of biomedical polymers, suitable process for metal extraction and water purification, shape of molecules using VSEPR, VB and MO theories, properties of gaseous and colloidal substances. [K3]

CO5: analyze different methodology of preparing polymers, separation of metals from their ores, water purification processes, various bonding theories, gas laws and properties of various colloids, applications of colloids and biomedical polymers.
[K4]

Course Code 20UCHA11	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO 1	H	L	L	H	L	L	L
CO 2	L	L	-	-	L	-	-
CO 3	-	H	-	M	L	-	M
CO 4	H	L	-	L	M	L	L
CO 5	H	H	M	M	L	L	-

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	MICROBIAL TAXONOMY	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UMBC21		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: describe the standard rules governing diverse taxonomy with current classification of different microbial groups. [K1]

CO2: outline the classification system and taxonomic strategies to arrange microorganisms from kingdom to species. [K2]

CO3: explain the kingdom concepts to learn major characteristic features of microscopic community in different ecosystems. [K2]

CO4: Illustrate the nature of microorganisms according to Bergey's manual of systematic bacteriology in different volumes. [K3]

CO5: classify the Structural, genomic and nomenclature features of viruses that infects bacteria, plants and animals. [K4]

Course Code 20UMBC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	M	M	L	M	M	L	-	-
CO2	H	M	M	M	L	M	L	L	-	-
CO3	H	L	M	M	L	L	M	M	-	-
CO4	H	M	H	H	M	L	M	M	-	-
CO5	H	L	M	H	L	M	M	H	-	L

Semester II	MICROBIAL PHYSIOLOGY AND METABOLISM	Hours/Week: 4	
Core Course-5		Credits: 4	
Course Code 20UMBC22		Internal 25	External 75

COURSE OUTCOMES

On Completion of the course, the students will be able to

- CO1: recall the basic concepts of various anabolic and catabolic pathways, microbial nutrition and growth. [K1]
- CO2: outline the microbial metabolism of carbohydrates, proteins and fats, role of photoautotrophs and physiological changes during growth. [K2]
- CO3: explain the biosynthesis and degradation pathways involved in the physiology and growth of microbes. [K2]
- CO4: develop knowledge on bacterial photosynthesis and transport of nutrients. [K3]
- CO5: analyze the impacts of environmental factors on microbial growth and metabolism. [K4]

Course Code 20UMBC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	H	H	L	M	M	M	-	-
CO2	H	M	M	H	L	L	M	L	-	-
CO3	H	L	M	H	L	M	L	M	-	-
CO4	H	M	L	H	L	M	L	M	-	-
CO5	H	L	L	M	M	L	L	H	-	L

Semester I/II	CORE PRACTICAL - I MAJOR PRACTICAL - I	Hours/Week: 2	
Core Course-3		Credits: 2	
Course Code 20UMBC21P		Internal 40	External 60

COURSE OUTCOMES

On Completion of the course, the students will be able to

- CO1: apply the basic theoretical concepts & practical knowledge of Microscopy, staining, sterilization, characterization of microbes along with biomolecules estimation. [K3]
- CO2: make use of aseptic techniques for isolating pure cultures, bacterial growth kinetics and to perform routine culture handling tasks safely, effectively and eco friendly. [K3]
- CO3: identify the characteristic features of unknown microorganisms by using various morphological, ecological, biochemical and physiological analysis. [K3]
- CO4: experiment with the presence of bio-molecules like enzymes, carbohydrates, proteins and Vitamins in known and unknown samples. [K3]
- CO5: examine the use of tools, techniques and methodologies vital to practical skills in microbiology and Biochemistry. [K4]

Course Code 20UMBC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO7
CO1	H	H	M	M	M	L	L	M	L	-
CO2	H	H	M	M	M	L	L	M	M	M
CO3	H	H	H	M	M	M	L	L	H	-
CO4	H	M	H	L	M	L	M	L	M	-
CO5	H	H	H	H	M	L	M	L	M	-

Semester II	ALLIED COURSE- I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCHA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils and fats, soaps and detergents, biomolecules, fuels, fertilizers and pollutants. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds, sources, effects and control measures of pollutions, methods for removal of salt from water. [K2]

CO4: comprehend about the classification of biomolecules, fuels, fertilizers, catalyst and pollutions, application of adsorption and uses of biomolecules. [K3]

CO5: analyze the oil, fats and biomolecule functions, different sources of pollutions, characteristics and catalytic properties of chemicals and the effects with remedies for various pollution. [K4]

Course Code 20UCHA21	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO 1	M	-	H	-	-	-	L
CO 2	H	H	M	M	M	-	L
CO 3	H	H	M	M	L	H	-
CO 4	H	H	H	M	M	H	M
CO 5	H	H	L	-	H	-	L

Semester II	VOLUMETRIC ANALYSIS	Hours/Week: 2	
Allied Course I		Credits:2	
Practical			
Course Code 20UCHA21P		Internal 40	External 60

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: apply the principles involved in the volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	-	M	M	M
CO2	H	H	H	M	H	-	M
CO3	H	H	H	L	-	-	L
CO4	H	H	H	M	L	M	M
CO5	H	H	M	L	L	M	L

Semester II	MICROBIOLOGICAL AND ANALYTICAL TECHNIQUES	Hours/Week: 2	
Skill Enhancement Course -1		Credits: 2	
Course Code 20UMBS21		Internal 40	External 60

COURSE OUTCOMES

On Completion of the course, the students will be able to

CO1: describe the facts, ideas, need of equipments in microbiological and biochemical analysis. [K1]

CO2: explain the theoretical skills behind the usage, working mechanism and its visualizing effect of the instruments. [K2]

CO3: relate the laboratory skills to detect the problem and rectification in an efficient way. [K2]

CO4: identify the separation techniques to recover the biomolecules from the experimental works. [K3]

CO5: compare the efficacy of the modern day equipments with the basic lab apparatus in recent days. [K4]

Course Code 20UMBS21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	L	H	M	-	L	-	L
CO2	H	H	H	L	H	L	L	L	-	L
CO3	H	H	H	L	M	L	L	M	-	L
CO4	H	H	H	L	M	M	L	M	-	-
CO5	H	H	H	M	M	H	M	H	-	L

B.Sc. Biotechnology

Programme Educational Objectives (PEOs)

The students will be able to

- To acquire knowledge and sound understanding of concepts in various branches of Biotechnology and exhibit their abilities and skills leading to professional to become competent professionals
- To employ their knowledge and technical skills in their profession for problem solving
- To sustain the standards of the profession concerned with ethical consideration

Key Components of the Mission Statement	PEO1	PEO2	PEO3
conceptual knowledge	√	√	-
Problem solving	√	√	-
socio-ethical consideration	-	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Biotechnology Programme, the students will be able to

PO1: Disciplinary knowledge

PSO1a: Apply the knowledge on fundamental concepts of life sciences such as Biochemistry, Microbiology, Genetics and Molecular biology and its related courses in higher studies.

PSO1b: Understand the principles and handling of various instruments used in Biochemistry, Microbiology and chemistry laboratory and to equip the practical skills in Biotechnology.

PO2: Communication Skills.

PSO2: Explain various concepts and processes of Biological sciences both in verbal and written form and illustrate the techniques related to Biotechnology.

PO3: Scientific Reasoning and Problem Solving

PSO3a: apply their theoretical knowledge and transferable skills to identify and solve problems in day today life

PSO3b: Employ interdisciplinary knowledge to provide better solutions and new ideas in various branches of Biotechnology innovatively to work in a Biotechnology laboratory or in an industry

PO4: Critical thinking and Analytical Reasoning

PSO4a: critically think and apply the concepts in life sciences in identifying the problems which can be addressed through Biotechnology

PSO4b: Analyse the organization of plant, animal and microbes from cellular level upto genome level and their inter relationship to exploit them for various research and development activities

PO5: Digital Literacy, Self - directed and Lifelong learning

PSO5: Make use of modern ICT tools and to adapt to the technological advancements in the emerging areas of Biotechnology.

PO6: Cooperation / Team Work and Multi-Cultural Competence

PSO6: Work effectively as a member or leader of a team in institution, industry, society through the acquired skills from paper presentation, Industrial visit and Internship programme.

PO7: Moral and Ethical awareness

PSO7: Understand the IPR, ethics in life science and adapting ecofriendly techniques for sustainable development.

Semester II	BIOCHEMISTRY	Hours/Week: 4	
Core Course -1		Credits: 4	
Course Code 20UBOC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the classification and structure of biomolecules such as carbohydrates, proteins, nucleic acids, enzymes and lipids. [K1]

CO2: describe the chemistry of biomolecules, metabolism and mechanism of enzyme action. [K2]

CO3: explain the relationship between biomolecules, mechanism of enzyme action and the metabolism. [K2]

CO4: apply the knowledge of chemistry and properties of biomolecules such as Carbohydrates, proteins, nucleic acids, enzymes and lipids. [K3]

CO5: analyze the metabolic pathways of various biomolecules. [K4]

Course Code 20UBOC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	-	H	L	L	L	L	L	-	-
CO2	H	M	H	L	L	M	L	M	-	-
CO3	H	M	L	L	L	H	M	L	-	-
CO4	H	M	M	M	M	M	H	M	-	-
CO5	H	M	H	M	H	L	M	M	-	-

Semester I	FUNDAMENTALS OF GENETICS	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UBOC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recall the key concepts of Genetics. [K1]

CO2: summarise the historical development of Genetics, inheritance, variation, Sex determination, chromosomal mapping and evolution. [K2]

CO3: outline the Mendelian and non Mendelian inheritance, allelic interaction, linkage and population genetics. [K2]

CO4: explain the concepts of genetics using specific examples or by solving simple genetic problems. [K3]

CO5: analyze the Mendelian laws, allelic interaction, sex linkage, chromosomal mapping and evolution. [K4]

Course Code 20UBOC12	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	-	H	-	M	H	-	-	-	-
CO2	H	-	H	M	M	H	M	-	-	-
CO3	H	-	H	M	M	H	M	M	-	-
CO4	H	M	H	M	H	H	M	-	-	-
CO5	H	L	M	M	H	H	M	L	-	-

Semester I	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTR – I	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCHA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the basic principles, statements, laws and theories in chemistry. [K1]

CO2: understand the fundamental concepts in organic, inorganic and physical chemistry. [K2]

CO3: illustrate the preparations, uses and applications of polymers, hydrogen and water, various metallurgical process, bonding theories, colloids, sols, emulsion and gels. [K2]

CO4: predict the type of reactions involved in polymers preparation, utility of biomedical polymers, suitable process for metal extraction and water purification, shape of molecules using VSEPR, VB and MO theories, properties of gaseous and colloidal substances. [K3]

CO5: analyze different methodology of preparing polymers, separation of metals from their ores, water purification processes, various bonding theories, gas laws and properties of various colloids, applications of colloids and biomedical polymers. [K4]

Course Code 20UCHA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	M	L	M	M	H
CO2	H	M	M	L	M	M	H
CO3	M	M	M	L	H	M	H
CO4	M	M	M	L	H	M	H
CO5	M	M	M	L	H	M	H

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	MOLECULAR BIOLOGY	Hours/Week: 4	
Core Course-3		Credits: 4	
Course Code 20UBOC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recall the basic concepts in Molecular biology. [K1]

CO2: outline the process of DNA replication, transcription, translation, mutation and gene regulation. [K2]

CO3: explain the mechanism of DNA replication, transcription, translation, mutation and gene regulation. [K2]

CO4: apply the concepts of central dogma of life, gene mutations and regulation. [K3]

CO5: analyze the various steps involved in DNA replication, transcription, translation, mutation and gene regulation and molecular level import export functioning of the cell.

Course Code 20UBOC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	-	H	H	-	-	H	-	-	-
CO2	H	L	H	H	L	-	H	L	-	-
CO3	H	-	H	H	M	M	-	-	-	
CO4	H	-	H	H	L	H	L	M	-	-
CO5	H	-	H	M	M	H	H	H	-	-

Semester II	FOOD BIOTECHNOLOGY	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UBOC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: recall the composition, preservation, processing, and packaging of food products and IPR. [K1]
- CO2: explain the basic principles in food industry and the role of biotechnology in various stages of food product development [K2]
- CO3: summarize the food ingredients, methods of preservation, processing, packaging and labeling of foods. [K2]
- CO4: apply the knowledge of food chemistry, food preservation, food processing and food packaging for exploiting agricultural commodities effectively. [K3]
- CO5: examine the methods of food preservation, processing, food industry operation and appraise the IPR, ethical issues in the development of GM foods. [K4]

Course Code 20UBOC22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	H	H	H	L	L	-	-	L
CO2	H	M	H	H	H	L	L	-	L	-
CO3	H	L	H	H	H	L	L	-	L	H
CO4	H	M	H	H	H	L	H	-	L	-
CO5	H	M	H	H	H	L	H	-	M	H

Semester II	ALLIED COURSE I- ORGANIC, INORGANIC AND PHYSICAL CHEMISTRY – II	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UCHA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: know about the basic concepts in organic, inorganic and physical chemistry. [K1]

CO2: understand the chemical constituent in oils, fats, soaps, detergents, biomolecules, fuels, fertilizers and pollutants. [K2]

CO3: identify the methods of preparation for organic and inorganic compounds, sources, effects and control measures of pollutions, methods for removal of salt from water. [K2]

CO4: comprehend the classification of biomolecules, fuels, fertilizers, catalyst, pollutions, application of adsorption and biomolecule. [K3]

CO5: analyze the oils, fats and biomolecules functions, sources of pollutions, characteristics of catalysts and the effects with control measures for various pollution. [K4]

Course Code 20UCHA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	H	M	L	L	M	H
CO2	H	H	M	L	L	M	H
CO3	H	H	M	L	L	M	H
CO4	H	H	M	L	L	M	H
CO5	H	H	M	L	L	M	H

Semester II	VOLUMETRIC ANALYSIS	Hours/Week: 2	
Allied Course I Practical		Credits: 2	
Course Code 20UCHA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the Principles involved in the Volumetric analysis. [K3]

CO2: find out the strength of standard solutions. [K3]

CO3: estimate the amount of the substance present in the given solution by volumetric analysis. [K3]

CO4: determine the concentration of the unknown solutions. [K4]

CO5: analyse and evaluate the accuracy of the results. [K4]

Course Code 20UCHA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	H	M	H	H	H	H
CO2	H	H	M	H	M	H	H
CO3	H	H	M	H	H	H	H
CO4	H	H	M	H	H	H	H
CO5	H	H	L	H	H	H	H

Semester II	BIO INSTRUMENTATION	Hours/Week: 2	
Skill Enhancement Course-1		Credits: 2	
Course Code 20UBOS21		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

CO1: define the basic principles and terminologies associated with colorimetry, chromatography, centrifugation, electrophoresis and tracer techniques.

[K1]

CO2: describe the components of instruments and their maintenance. [K2]

CO3: explain the operation methods of instruments. [K2]

CO4: apply the knowledge of biotechniques to estimate and separate biomolecules following good laboratory practices. [K3]

CO5: compare the merits of bio instruments and their applications in laboratory.

[K4]

Course Code 20UBOS21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	-	L	L	-	L	-	-
CO2	H	H	M	-	-	L	-	L	-	M
CO3	H	M	M	-	L	-	-	L	L	-
CO4	H	H	M	L	L	L	L	L	L	M
CO5	H	L	M	L	M	L	-	L	L	M

Semester I&II	Lab in Biochemistry, Genetics, Molecular Biology and Food Biotechnology	Hours/Week: 2	
Core Practical-I		Credits: 2	
Course Code 20UBOC21P		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

CO1: apply the basic concepts learnt in theory for the estimation of biomolecules and to solve simple problems in Genetics. [K3]

CO2: identify and explain the salient features of the given spotters. [K3]

CO3: make use of formula, tables and graphs for the estimation of biomolecules. [K3]

CO4: infer the result and complete the record work. [K3]

CO5: analyse the problems and situations in the related subject area. [K4]

Course Code 20UBOC21P	PO1		P02	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	L	L	L	L	L	-	-
CO2	H	H	H	L	L	H	M	-	-	-
CO3	H	H	H	M	H	H	M	-	M	L
CO4	M	H	H	H	H	H	M	L	M	L
CO5	M	H	H	H	H	H	M	L	M	L

B.Sc. Costume Design and Fashion Programme

Programme Educational Objectives (PEOs)

The students will be able to

- upgrade their knowledge of fashion by creating designs based on traditional patterns and current trends using modern tools and technology.
- hold different designations like Technical designer, Apparel production manager, Quality controller and Merchandiser in apparel industry and to become successful entrepreneurs in the field of costume and fashion design.
- engage in lifelong learning and work with moral commitment, social responsibility, eco consciousness and humane concern for fellow citizens.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
impart knowledge in various dimensions of Fashion, Textile and Apparel design	√	√	√
mould them into successful professionals and entrepreneurs in Fashion world	√	√	√
nurture their social skills and moral values for becoming better citizens	-	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Sc. Costume Design and Fashion Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a: apply professional knowledge and technical skills in the field of fashion, textiles and apparels, to pursue higher education or to start a new venture.

PSO 1.b: apply the principles in textiles and fashion to design fashionable garments and merchandise its functional aspects in fashion market.

PO2 - *Communication Skills*

PSO 2.a: communicate effectively the concepts related to all fields in textile, fashion and apparel in the form of written reports and oral presentations to the industry and society.

PSO 2.b: communicate effectively with society and design unique collections with suitable textiles in the business scenario.

PO3 - *Scientific Reasoning and Problem Solving*

PSO 3: identify the current issues in fashion, apparel and textile domain and provide feasible solutions focusing on the need of the industry and society.

PO4 - *Critical thinking and Analytical Reasoning*

PSO 4.a: make use of appropriate skills acquired in apparel designing, draping, Pattern making, grading and constructing for various model apparels with good Fit for different age groups.

PSO 4.b: introduce new trends by merging new ideas and innovative models in traditional patterns of textiles, embroideries, costumes and accessories to suit the tastes and preferences of the community.

PO5 - *Digital Literacy, Self - directed and Lifelong learning*

PSO 5: employ the ICT tools in developing the fashion world and engage in lifelong learning in their area of interest.

PO6 - *Cooperation/Team Work and Multi-Cultural Competence*

PSO 6: use their potentialities and life oriented skills to work in teams and also become successful entrepreneurs.

PO7 - *Moral and Ethical awareness*

PSO7: uphold and extend their moral values and ethics to the workplace and to the society for the sustainable environment.

Semester I	FUNDAMENTALS OF APPAREL MAKING	Hours/Week: 4	
Core Course-1		Credits: 4	
Course Code 20UCFC11		Internal 25	Externa 175

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concepts of various tools, fabrics and garment components such as stitches, seams, seam finishes, fullness, sleeves, neck finishes, fasteners, trimmings, skirts, plackets, yokes, pockets and collars needed for clothing construction. [K1]

CO2: explain the importance, methods and types in clothing construction to make attire. [K2]

CO3: apply the construction techniques to develop the basics of garment construction. [K3]

CO4: find the applications of the basics of clothing construction in an attractive way. [K3]

CO5: analyze the factors to be considered while making the basics of clothing construction and discover the trendy garments. [K4]

Course Code 20UCFC11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	M	M	-	-	-	-	-	-
CO 2	H	H	M	M	-	-	-	-	-	-
CO 3	H	H	H	H	H	H	M	-	-	-
CO 4	H	H	H	M	H	H	H	-	-	-
CO 5	H	H	M	M	M	M	M	-	-	-

Semester I	FIBER AND YARN SCIENCE	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20UCFC12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts of various textile fibres, yarns and threads. [K1]

CO2: classify the types of fibres, yarns, threads and also the characteristics and importance of threads in textile industries. [K2]

CO3: trace the properties, significance and manufacturing process of fibres, yarns and threads. [K2]

CO4: identify the various types of fibre and find the changes that occur in the processing of fibres and yarns and also select the quality threads for sewing. [K3]

CO5: analyze the role and end uses of fibres, yarns and threads in textile industries. [K4]

Course Code 20UCFC12	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO 1	H	H	L	L	-	-	-	-	-	-
CO 2	H	H	M	L	-	-	-	-	-	-
CO 3	H	H	M	M	-	-	-	-	-	-
CO 4	H	H	M	M	H	L	L	-	-	-
CO 5	H	H	M	M	M	H	M	M	-	-

Semester I	HOME FURNISHING	Hours/Week: 4	
Allied Course -I		Credits: 4	
Course Code 20UHSA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: state the concept, objectives and importance of home furnishing accessories, stain removal and dry cleaning. [K1]
- CO2: classify the types of home furnishing, stain and dry cleaning. [K2]
- CO3: select the appropriate furnishing materials for various home furnishing and methods of stain removal and dry cleaning. [K2]
- CO4: apply the techniques involved in home furnishing, stain removal and dry cleaning. [K3]
- CO5: analyze the factors to be considered while planning to furnish the home and care and maintenance of home furnishing materials. [K4]

Course Code 20UHSA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	M	M	-	-	H	-	-
CO 2	H	M	-	-	H	-	-
CO 3	H	M	-	-	H	-	-
CO 4	H	M	H	M	H	-	M
CO 5	H	M	H	M	H	-	-

Semester I	VALUE EDUCATION (2020 -2021 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	H	M	-	-	L	-	H
CO 2	H	M	-	-	L	-	H
CO 3	H	M	-	-	L	-	H
CO 4	H	M	-	-	H	H	H
CO 5	H	M	-	-	L	H	H

Semester II	PATTERN MAKING AND GRADING	Hours/Week: 4	
Core Course - 3		Credits: 4	
Course Code 20UCFC21		Internal 25	External 15

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concepts of body measurements, pattern making, draping, grading, preparing layout, pattern alteration and garment fitting. [K1]

CO2: show the importance, types and steps involved in making a good fit garment.[K2]

CO3: apply the rules, methods and principles followed in creating a garment. [K3]

CO4: utilize the techniques needed for the pre preparation of a garment making with a good fit by using appropriate measurements. [K3]

CO5: compare and contrast the body measurements of ladies and gentlemen and various pattern grading, pattern layout and pattern making and analyze the problems in a garment and alter it with a good fit. [K4]

Course Code 20UCFC21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO6	PSO7
CO 1	H	H	M	M	-	-	-	-	-	-
CO 2	H	H	M	M	-	-	-	-	-	-
CO 3	H	H	H	H	H	M	M	-	-	-
CO 4	H	H	H	H	H	M	M	-	-	-
CO 5	H	H	H	H	H	H	M	-	-	-

Semester II	SEWING TECHNOLOGY	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20UCFC22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: show the importance of tools and equipments needed for spreading, marking, pressing cutting and sewing. [K1]

CO2: classify the needles, threads, and the mechanism of stitching and sewing. [K2]

CO3: illustrate the types, methods and functions of sewing, cutting, marking and pressing equipments needed for an apparel industry. [K2]

CO4: identify the principles of various equipments and utilize its techniques in garment manufacturing industry. [K3]

CO5: analyze the care, maintenance and usage of technological equipments in an apparel industry. [K4]

Course Code 20UCFC22	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO 1	H	M	H	M	-	-	-	-	-	-
CO 2	H	M	H	M	-	-	-	-	-	-
CO 3	H	H	H	L	-	-	-	-	-	-
CO 4	H	H	H	L	H	M	L	-	-	-
CO 5	H	H	H	L	H	H	L	-	-	-

Semester II	ENTREPRENEURIAL SKILL DEVELOPMENT	Hours/Week: 4	
Allied Course -1		Credits: 4	
Course Code 20UHSA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the concept of entrepreneurship, entrepreneur management, supporting institutions and organizational structure of a garment unit, departments in a garment unit, factory design and layout and performance of Indian garment export. [K1]

CO2: indicate the qualities of an entrepreneur, characteristics and scope of management, production, planning and controlling process in garment industries, personnel involved in different departments and SWOT analysis. [K2]

CO3: classify the types of entrepreneur, building, factory layout process and commercial banks. [K2]

CO4: identify the role of factory layout, merchandiser, entrepreneur, manager, supporting institutions and departments in a garment unit. Advantages and limitations of building and setting of a garment unit for export market. [K3]

CO5: analyze the functions of management, supporting institutions, personnel nature of the job, requirements of personnel related to health safety and export procedures. [K4]

Course Code 20UHSA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	H	H	-	-	M	-	-
CO 2	H	H	-	-	M	-	-
CO 3	H	H	-	-	M	-	-
CO 4	H	H	H	H	M	-	L
CO 5	H	H	M	H	M	-	L

Semester II	HOME TEXTILES LAB	Hours/Week: 2	
Allied Practical-1		Credits: 2	
Course Code 20UHSA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: choose the appropriate raw materials and principles involved in developing home furnishing accessories. [K3]

CO2: make use of the basic drafting and stitching procedure for preparing household accessories. [K3]

CO3: construct the home furnishing accessories with novel ideas. [K3]

CO4: identify the type of stain and techniques involved to remove it and prepare the record.[K3]

CO5: analyze the factors influencing the preparation of home accessories. [K4]

Course Code 20UHSA21P	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	H	M	L	M	M	-	-
CO 2	H	M	M	M	M	-	-
CO 3	H	M	H	M	M	-	-
CO 4	H	M	H	H	M	M	-
CO 5	H	M	M	H	M	-	-

Semester II	MS Office Lab	Hours /Week: 2 (1T/1P)	
Skill Enhancement Course Practical-1		Credits: 2	
Course Code 20UCFS21P		Internal 40	External 60

COURSE OUTCOME

On completion of the course, the students will be able to

CO1: write the formula and procedure for MS Office applications. [K3]

CO2: make use of the MS Office applications to create documents, spreadsheets and power points. [K3]

CO3: execute the documents created by using MS Word, MS Excel and MS Power point. [K3]

CO4: prepare the record with the output generated by using MS office applications [K3]

CO5: examine the formatting options and shortcut keys in MS Office. [K4]

Course Code 20UCFS21P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO7
CO 1	H	M	H	H	M	M	H	-	-	-
CO 2	H	M	H	H	M	M	H	-	-	-
CO 3	H	M	H	H	H	H	H	H	-	-
CO 4	H	M	H	H	H	H	H	H	M	-
CO 5	H	M	H	H	H	H	H	H	-	-

B.Sc. Computer Science

Programme Educational Objectives (PEOs)

PEO1 : Students gain knowledge and expertise in advanced domains of Computer Science like website design, mobile apps development and data analytics.

PEO2 : The rural women students will emerge as eminent software professionals with team building capacity and leadership quality to suit the modern software industry.

PEO3 : The students imbibe moral values and professional ethics to shape themselves as skilled persons to work as an individual with topical updates and as a team to contribute towards the need of industry and society.

Key Components of Mission Statement	Programme Educational Objectives (PEOs)		
	PEO1	PEO2	PEO3
transforming rural women students		√	
eminent students	√	√	√
prepared for a globalized technological era	√	√	
a passion to strive for perpetual personal uplift			√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

PROGRAMME SPECIFIC OUTCOMES

On completion of B.Sc. Computer Science programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a: apply principles, methods and techniques of various domains of Computer Science and courses related to Computer Science to a wide range of applications.

PSO 1.b: use modern software development tools, packages and platforms.

PO2 - *Communication Skills*

PSO 2.a: give and receive clear instructions, write effectual reports, design documentation and make remarkable presentations on concepts related to Computer Science.

PSO 2.b: express complex technical ideas effectively to peers, other assemblage like IT community and the entire society.

PO3 - *Scientific Reasoning and Problem Solving*

PSO 3: design and develop computer programs using programming languages efficiently, in the areas related to database management, mobile applications, operating systems and web design.

PO4 - *Critical Thinking and Analytical Reasoning*

PSO 4: analyse real world problems, identify and formulate the computing requirements appropriate to give efficient and constructive solutions in different fields of Computer Science and for environmental sustainability.

PO5 - *Digital Literacy, Self - directed and Lifelong Learning*

PSO 5.a: create high quality e-content for demonstrating complex concepts; pursue the appropriate Massive Open Online Courses.

PSO 5.b: adapt to an ever-changing technological landscape by pursuing higher studies and engaging in independent and life-long learning.

PO6 - *Cooperation/Team Work and Multi-Cultural Competence*

PSO 6: demonstrate the knowledge of technological and management principles to work as a member or leader, with multicultural competence in diverse teams of software projects.

PO7 - *Moral and Ethical Awareness*

PSO 7: develop innovative applications as an employee of a company or an entrepreneur, employing contemporary technologies adhering to ethical, security and legal issues of Internet and Cyber systems.

Semester I	OBJECT ORIENTED PROGRAMMING WITH C++	Hours/Week: 5	
Core Course 1		Credits: 4	
Course Code 20UCSC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognize the features of object oriented paradigm. [K1]

CO2: describe constructor, friend function, inline function and virtual function. [K2]

CO3: discuss overloading, inheritance and polymorphism. [K2]

CO4: summarize the concepts of manipulators, pointers, data hiding and data reusability. [K3]

CO5: demonstrate the object oriented programming concepts through C++ programs. [K4]

Course Code 20UCSC11	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	M	L	L	-	L	L	-	L	-	-
CO2	H	M	M	M	M	L	-	L	-	-
CO3	H	M	H	M	M	M	M	M	-	L
CO4	H	M	H	M	M	M	M	M	-	L
CO5	H	M	H	H	H	M	M	M	-	M

Semester I	OBJECT ORIENTED PROGRAMMING USING C++ LAB	Hours/Week: 5	
Core Course Practical I		Credits: 3	
Course Code 20UCSC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: illustrate basic concepts of object oriented programming using C++ programs. [K3]

CO2: write C++ programs to implement the concepts of classes, objects, function overloading and operator overloading. [K3]

CO3: execute C++ modules to exhibit object oriented programming concepts like inheritance and polymorphism. [K3]

CO4: select appropriate formatted console input and output functions for neat output and take printout. [K3]

CO5: detect applications of object oriented programming in real life. [K4]

Course Code 20UCSC11P	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	H	M	L	M	L	L	-	L	-
CO2	H	H	H	M	H	M	L	-	L	-
CO3	H	M	H	M	M	M	M	M	M	L
CO4	H	L	H	M	M	L	M	M	M	M
CO5	H	H	H	M	H	H	M	H	M	M

Semester I	NUMERICAL METHODS	Hours/Week: 4	
Allied Course 1		Credits: 4	
Course Code 20UCSA11		Internal 25	External 75

COURSE OUTCOMES:

On completion of the course, the students will be able to

- CO1: define the fundamental concepts in numerical methods. [K1]
- CO2: explain appropriate numerical methods for solving problems in other disciplines. [K2]
- CO3: solve differential equations and find the missing data using numerical methods. [K3]
- CO4: apply numerical methods for obtaining the approximate solutions of algebraic, transcendental, simultaneous, and differential equations. [K3]
- CO5: analyze the numerical solutions and solutions obtained by ordinary methods. [K4]

Course Code 20UCSA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	H	H	H	-
CO2	H	M	H	H	H	L	-
CO3	H	M	H	H	H	H	-
CO4	H	H	H	H	H	L	-
CO5	H	H	H	H	H	M	-

Semester I	DTP LAB	Hours/Week: 1 T + 1 P	
SEC 1 Practical I		Credits: 2	
Course Code 20UCSS11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: list out various tools of Photoshop and CorelDraw. [K3]
- CO2: write steps to apply various Photoshop tools, filters and effects. [K3]
- CO3: show the skill of working with multiple layers in Photoshop and multiple pages in CorelDraw. [K3]
- CO4: layout invitations, greeting cards, visiting cards, logos and pamphlets and prepare record. [K3]
- CO5: identify the Photoshop and CorelDraw tools employed in a pamphlet. [K4]

Course Code 20UCSS11P	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	M	M	M	M	-	-	M	-	L	-
CO2	H	M	M	M	-	-	M	-	-	-
CO3	H	H	H	M	-	-	M	-	L	-
CO4	H	M	H	M	-	M	M	M	L	L
CO5	H	H	H	M	-	M	M	M	-	M

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Course Code 20UGVE11		Credits: 2	
		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

- CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]
- CO2: indicate the importance and benefits of upholding human values. [K2]
- CO3: explain the steps to be taken for upholding human values and human rights. [K2]
- CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]
- CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	DATA STRUCTURES	Hours/Week: 5	
Core Course 2		Credits: 4	
Course Code 20UCSC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: define the data structures used to represent data in memory. [K1]
- CO2: explain the linear and non-linear data structures as ADT. [K2]
- CO3: apply operations specified in ADT of linear and non-linear data structures through algorithms. [K3]
- CO4: use suitable data structures for solving problems. [K3]
- CO5: analyse the data structures and their performance. [K4]

Course Code 20UCSC21	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	M	L	L	-	L	-	-	-	-	-
CO2	H	M	M	L	M	M	M	M	-	-
CO3	H	M	M	M	M	M	M	M	-	-
CO4	H	M	M	M	M	H	M	M	-	-
CO5	H	M	M	M	M	H	M	M	-	-

Semester II	DATA STRUCTURES USING C++ LAB	Hours/Week: 5	
Core Course		Credits: 3	
Practical II			
Course Code 20UCSC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : illustrate linear and non-linear data structures. [K3]
- CO2 : implement operations like search, merge, insertion and deletion on various data structures. [K3]
- CO3 : execute programs using data structures to solve real life problems. [K3]
- CO4 : prepare record with formatted outputs. [K3]
- CO5 : analyse performance of array and linked list representations of data structures. [K4]

Course Code 20UCSC21P	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	L	M	M	M	M	M	M	M	-
CO2	H	H	M	M	M	M	M	M	M	L
CO3	H	H	M	M	M	M	M	M	M	L
CO4	L	L	H	-	-	-	L	-	-	-
CO5	H	H	M	M	H	H	M	M	M	-

Semester II	PROBABILITY AND STATISTICS	Hours/Week: 4	
Allied Course 2		Credits: 4	
Course Code 20UCSA21		Internal 25	External 75

COURSE OUTCOMES

On completion of this course, students will be able to

- CO1: define the basic concepts in Probability and Statistics. [K1]
- CO2: explain the statistical tools used in data analysis. [K2]
- CO3: calculate some statistical constants to get statistical inference. [K3]
- CO4: apply the statistical methods to solve real life problems. [K3]
- CO5: analyze the statistical data to draw conclusion in Probabilities, Correlation, Regression and in testing of hypothesis. [K4]

Course Code 20UCSA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	H	H	H	L	-
CO2	H	H	H	H	H	L	-
CO3	H	H	H	H	H	L	-
CO4	H	M	H	H	H	H	-
CO5	H	M	H	M	H	H	-

Semester II	DIGITAL PRINCIPLES	Hours/Week: 2	
SEC 2		Credits: 2	
Course Code 20UCSS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: review the various number systems, digital circuits, logic gates, Boolean laws and theorems. [K1]
- CO2: discuss the functioning of gates, combinational logic circuits, data processing circuits, arithmetic circuits, Flip Flops, Registers, Counters and number systems. [K2]
- CO3: demonstrate various digital circuits and number conversions. [K3]
- CO4: apply Boolean laws and Karnaugh Map for simplification of Boolean expressions. [K3]
- CO5: explore different digital circuits. [K4]

Course Code 20UCSS21	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	-	H	-	-	-	H	M	-	-
CO2	H	-	H	-	-	-	H	M	-	-
CO3	H	-	H	H	L	-	H	M	-	-
CO4	H	-	H	-	L	M	H	M	-	-
CO5	H	-	M	-	-	H	H	H	-	-

Semester II	WEB DESIGN LAB	Hours/Week: 1 T + 1P	
SEC 3 Practical II		Credits: 2	
Course Code 20UCSS21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: write programs using various HTML elements. [K3]
- CO2: write programs using different types of CSS stylesheets. [K3]
- CO3: demonstrate appropriate transition and animation effects on objects in web page.[K3]
- CO4: create forms in a neat format and prepare record with outputs of different programs. [K3]
- CO5: plan simple unique personal and business web pages using HTML and CSS. [K4]

Course Code 20UCSS21P	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	M	M	-	-	M	-	M	L	-	-
CO2	M	M	M	M	H	-	H	L	-	-
CO3	H	H	M	-	L	M	M	M	L	-
CO4	H	H	M	M	H	M	M	H	-	-
CO5	H	H	M	M	H	H	H	H	M	H

B.Sc. Information Technology

Programme Educational Objectives (PEOs)

The students will be able

PEO1 to be prepared to gain employment as an IT Professional.

PEO2 to function effectively as individuals in the workplace, growing into highly technical or project management and leadership roles.

PEO3 to develop graduates to meet the challenges of the rapidly changing world.

Key Components of the Mission Statement	Programme Educational Objectives		
	PEO1	PEO2	PEO3
Uplift Rural Students	✓	-	✓
Enhance employability opportunity	✓	✓	✓
provide moral values to turn out to be a responsible citizen	-	✓	-
develop graduates to meet the challenges of the rapidly changing world	-	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

PROGRAMME SPECIFIC OUTCOMES

On completion of the B.Sc. Information Technology programme, the students will be able to

PO1 - Disciplinary Knowledge

PSO 1.a. apply the principles and working of the hardware and software aspects of computer systems incorporated with the knowledge of related courses to pursue higher studies.

PSO 1.b. identify and solve Technical problems by applying mathematical foundations and algorithmic principles in IT environment to meet industrial challenges.

PO2 - Communication Skills

PSO 2. a. design and implement a secure and reliable information communication system by using concepts of computer networks, network security and information theory.

PSO 2. b. develop technical project reports and present them orally among the users.

PO3 - Scientific Reasoning and Problem Solving

PSO 3. characterize, illustrate and analyze a computer system, component, or algorithm to meet desired needs and to solve computational problems in real world based on their carrier.

PO4 - Critical Thinking and Analytical Reasoning

PSO 4. critically analyze the techniques in IT to provide technology based conclusions to transform innovative ideas into reality.

PO5 - Digital Literacy, Self - directed and Lifelong Learning

PSO 5. a. use and apply current technical concepts and practices in the core Information Technologies of human computer interaction, programming and networking.

PSO 5.b. be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas by self-directed and lifelong learnings.

PO6 - Cooperation/Team Work and Multi-Cultural Competence

PSO 6: work effectively as a member or leader of a team to achieve project target.

PO7 - Moral and Ethical awareness

PSO 7: demonstrate a sense of societal and ethical responsibility in their professional endeavors.

Semester I	INTRODUCTION TO IT AND PROGRAMMING IN C	Hours/Week: 5	
Core Course 1		Credits: 4	
Course Code 20UITC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: outline the basics of Information Technology and programming fundamentals to enhance the students learning. [K1]

CO2: characterize the usage of basic programming construct, user defined datatypes, C Statements, Array concepts and functions which help them to develop an application. [K2]

CO3: extend the concepts of C Programming that includes various C statements, arrays, built-in and user defined functions to solve real world problems in easier manner. [K2]

CO4: expose the concept of Information Technology which requires the knowledge of C programming environment with variables, data types, numerous statements and functions, Input/output Operations, Arrays to improve their programming skills. [K3]

CO5: scrutinize all fundamental programming statements, functions and Arrays in C to develop their real time projects in the field of Information Technology. [K4]

Course Code 20UITC11	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO1	H	H	-	H	L	M	H	M	H	-
CO2	H	M	L	M	M	L	H	M	M	-
CO3	H	M	M	L	M	L	M	M	-	-
CO4	H	H	H	H	H	M	M	H	H	-
CO5	M	H	M	M	H	M	M	H	H	-

Semester I	PROGRAMMING IN C LAB	Hours/Week: 5	
Core Practical 1		Credits: 3	
Course Code 20UITC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: apply and trace the concept of the programs. [K3]
- CO2: capture the logic and the C programming Statements to solve the problem. [K3]
- CO3: construct the algorithm and implement the concept using C Programming Statements. [K3]
- CO4: prepare the record with the concepts of Function, Arrays and Strings in C. [K3]
- CO5: examine the concepts of Function, Arrays and Strings to solve real time computer problems. [K4]

Course Code (20UITC11P)	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO	H	H	H	H	H	H	H	M	M	-
CO	H	H	H	H	H	H	M	H	M	-
CO	M	M	H	H	H	M	M	M	H	-
CO	M	M	H	H	M	H	M	M	M	-
CO	L	L	H	H	M	H	L	M	M	-

Semester I	DIGITAL PRINCIPLES AND APPLICATIONS	Hours/Week: 4	
Allied Course 1		Credits: 4	
Course Code 20UITA11		Internal 25	External 75

COURSE OUTCOMES

On Completion of this course, the students will be able to

- CO1: recognize number system over Boolean data and outline the arithmetic and combinational circuits using counters and registers in digital logic system. [K1]
- CO2: classify various structure of number systems, counters and registers articulating in logic gates, digital circuit designing representations. [K2]
- CO3: interpret the knowledge of available coding system, minimization techniques, Flip flops, registers, counters, gates and how to prevent various hazards and timing problems in a digital design. [K2]
- CO4: illustrate strong foundations on accessible codes, Boolean Algebra, Logic gates, various combinational and sequential circuits, counters and registers to design the circuits effectively. [K3]
- CO5: correlate the concepts of Number systems, Boolean algebra, minimization techniques, Logic gates, Flip flops, Registers and Counters to discover solutions for specific real time problems in the field of Information Technology. [K4]

Course Code 20UITA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	-	M	-	M	-	-
CO2	H	L	H	L	-	-	-
CO3	H	M	M	L	M	-	-
CO4	H	M	H	H	M	-	-
CO5	H	M	H	H	M	-	-

Semester I	HARDWARE SIMULATOR LAB	Hours/Week: 2	
SEC Practical 1		Credits: 2	
Course Code 20UITS11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: determine the circuit to be designed digitally. [K3]

CO2: Construct the simulated circuit model with hardware implementation to design their circuits effectively. [K3]

CO3: practice the basic logic gates and various variable reduction techniques of digital logic circuit in detail. [K3]

CO4: implement and record the hardware circuit to test performance and application for what it is being designed. [K3]

CO5: analyze the computer simulation software to obtain desired result. [K4]

Course Code (20UITS11P)	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO	H	H	H	H	H	H	H	M	-	-
CO	H	H	H	H	H	H	M	H	-	-
CO	M	M	H	H	H	H	M	L	M	-
CO	M	M	M	H	M	H	M	L	M	-
CO	L	M	M	M	M	H	M	L	M	-

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
Course Code 20UGVE11		Credits: 2	
		Internal 100	External -

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	ADVANCED CONCEPTS IN C AND DATA STRUCTURES	Hours/Week: 5	
Core Course 2		Credits: 4	
Course Code 20UITC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: tabulate the difference of structures, unions, Files and the types of ordered list that helps to enhance their learning. [K1]
- CO2: recognize the size of memory allocated in variables inside the structure and union to gain their knowledge. [K2]
- CO3: implement the Structured programs to develop the applications based on linear data structures such as stack, queue, linked list for better utilization of system resources. [K3]
- CO4: scrutinize the various file operations and different types of linked list implementation in data structures to build an intelligent system by using information theory calculations. [K4]
- CO5: explore the knowledge in programming to implement data structures and Advanced C concepts in their higher studies to lead a project team effectively. [K4]

Course Code (20UITC21)	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO1	H	M	M	H	M	L	H	M	M	-
CO2	H	H	L	H	M	M	M	H	M	-
CO3	H	H	H	M	H	H	H	M	H	-
CO4	H	H	L	M	H	M	H	M	M	-
CO5	H	H	H	H	H	M	M	H	H	-

Semester II	DATA STRUCTURES USING C LAB	Hours/Week: 5	
Core Practical 2		Credits: 3	
Course Code 20UITC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the concepts of data structure, data type and array data structure to enhance their learning. [K3]

CO2: prepare data structure algorithms to solve various problems in IT effectively and professionally. [K3]

CO3: practice and implement various data structure concepts such as Stacks, Queues, linked List, Trees to solve various computing problems. [K3]

CO4: solve and execute programs using data structure concepts. [K3]

CO5: analyze algorithms and determine their time complexity for better utilization of system resources. [K4]

Course Code (20UITC21P)	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO1	H	H	H	H	H	H	M	H	L	-
CO2	H	H	H	H	H	H	H	M	L	-
CO3	M	M	H	H	H	H	M	H	H	-
CO4	L	M	H	H	M	H	H	M	H	-
CO5	L	M	H	H	L	H	M	L	H	-

Semester II	DISCRETE MATHEMATICS	Hours/Week: 4	
Allied Course 2		Credits: 4	
Course Code 20UITA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recollect the elementary concepts of Groups, Combinatorics and Matrix Algebra in interdisciplinary field. [K1]

CO2: explain the mathematical concepts such as Relations, Functions, basic counting principles, algorithms and algebraic structure. [K2]

CO3: describe the notions of technical concepts in algebraic systems, Matrix Algebra, Recursion and Generating Functions. [K2]

CO4: apply the knowledge gained in Discrete Mathematics to exhibit equivalence classes, various types of functions, recurrence relations, matrix algebra and Group theory. [K3]

CO5: analyze the theory of groups, proofs and techniques of mathematical induction and generating functions. [K4]

Course Code 20UITA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	-	M	L	H	L	-
CO2	H	L	L	L	M	-	-
CO3	H	-	M	L	L	L	-
CO4	H	L	H	L	M	-	-
CO5	H	-	H	L	L	L	-

Semester II	OBJECT ORIENTED PROGRAMMING IN C++	Hours/Week: 2	
SEC 1		Credits: 2	
Course Code 20UITS21		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

CO1: describe the Procedural and Object Oriented Paradigm with concepts of streams, classes, functions, data and objects to acquire future technologies through the foundation skills. [K1]

CO2: articulate the principles of object-oriented problems using C++ features such as composition of objects, operator overloading, inheritance, polymorphism to apply knowledge of computing and produce effective designs and solutions for specific real time problems. [K2]

CO3: understand dynamic memory management techniques using pointers, constructors, destructors, etc., to adapt new technologies and upgrade their skill. [K2]

CO4: implement simple C++ applications using arrays, structures, pointers, concepts such as information hiding, abstraction and encapsulation and virtual functions to execute projects effectively with a focus on the future. [K3]

CO5: analyze a problem and construct a C++ program that solves the problems in the subjects like Operating System, Computer Networks and real world problems. [K4]

Course Code 20UITS21	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO1	H	M	L	M	L	M	L	M	-	-
CO2	H	H	L	H	M	M	M	L	-	-
CO3	M	M	M	M	H	H	M	L	-	-
CO4	M	L	H	H	H	H	H	M	-	-
CO5	M	H	M	H	H	H	M	H	-	-

Semester II	OBJECT ORIENTED PROGRAMMING USING C++ LAB	Hours/Week: 2	
SEC Practical 2		Credits: 2	
Course Code 20UITS21P		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

CO1: figure out the solutions for a range of problems. [K3]

CO2: apply object oriented programming concepts in C++ using objects and classes to attain professional excellence. [K3]

CO3: implement algorithmic problems including inheritance and polymorphism for specific real time problems. [K3]

CO4: examine the applications to be implemented for stream, file I/O and C++ concepts to solve problems in the areas of Information Technology for sustainable environment. [K3]

CO5: analyse the object oriented programs using templates and exceptional handling concepts. [K4]

Course Code 20UITS21P	PO1		PO2		PO3	PO4	PO5		PO6	PO7
	PSO 1. a.	PSO 1. b.	PSO 2. a.	PSO 2. b.	PSO 3	PSO 4	PSO 5.a.	PSO 5. b.	PSO 6	PSO 7
CO1	H	H	H	H	H	H	H	H	M	-
CO2	H	H	H	H	H	H	H	H	M	-
CO3	M	M	H	H	H	H	H	H	H	-
CO4	M	M	H	H	M	H	M	H	M	-
CO5	L	L	M	H	M	H	M	M	M	-

B.C.A.

Programme Educational Objectives (PEOs)

The students will be able to

PEO1: Effectively utilizing their knowledge of computing principles and mathematical theory to develop sustainable solutions to current and future computing problems.

PEO2: Graduates are trained to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur.

PEO3: Shine as socially committed computer professionals having mutual respect, efficient programming skills and satisfy the needs of society.

Key Components of Mission Statement	Programme Educational Objectives		
	PEO1	PEO2	PEO3
continues development of technical competency	√	√	
train students for careers as IT professionals	√	√	
empower the student in rural communities	√		√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

On completion of B.C.A. Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a: Apply the acquired knowledge in computer science and in interdisciplinary fields for successful career and higher studies.

PSO1.b: Make use of the technical knowledge in various technology field of computer science to identify the problem, analyze, design and develop the system as the solution to the problem.

PO2 – *Communication Skills*

PSO2: ability to express the computer knowledge by preparing documentation and communicate to the society with effective presentation.

PO3 – *Scientific Reasoning and Problem Solving*

PSO3.a: Apply theoretical foundations of computer applications with emphasis on strong practical training that enable them to solve real world problems related to sustainable environment.

PSO3.b: Analyze needed information and/or eliminate extraneous information towards solving contextual problems.

PO4 – *Critical Thinking and Analytical Reasoning*

PSO 4.a: Analyze, sketch and attain the innovative solutions to the problems related to Computer Industry.

PSO 4.b: Critically evaluate the software systems and find the optimum solution for the betterment of society.

PO5 – *Digital Literacy, Self - Directed and Lifelong Learning*

PSO5: Utilize modern computing tools, skills and techniques necessary for facing issues in finding software solutions in their career.

PO6 – *Co-operation/Team Work and Multi-Cultural Competence*

PSO6: Apply their leadership qualities, and cooperative spirit to achieve the project targets.

PO7 – *Moral and Ethical Awareness*

PSO 7: Solve and work with a professional context pertaining to ethics, cultural and cyber regulations

Semester I	PROGRAMMING IN C	Hours/Week: 5	
Core Course1		Credits: 4	
Course Code 20UCAC11		Internal 25	External 75

COURSE OUTCOMES

On successful completion of the course, the learner should be able to

- CO1: outline the history of C, model of computer, structure of C, constants, variables, data types, operators, expression, control statement, input and output operations.[K1]
- CO2: understand the concept of top-down modular programming, collection of similar data, group of logically related data, pointers and basic file operations. [K2]
- CO3: illustrate the basics of computers, elements of C Programming, management of input and output operations, statements that alter the flow of execution, user defined and derived data types, array, pointer and file handling functions. [K2]
- CO4: apply the knowledge of basic structures, operators, expressions, management of input/ output operations, control structures, branching, array, user defined functions, structures, dynamic memory allocation, file management. [K3]
- CO5: analyze various operators, decision making and iterative statements, homogeneous and heterogeneous data, pointers and files. [K4]

Course Code 20UCAC11	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	M	-	-	-	-	-	-	-
CO2	H	M	M	M	M	-	-	-	-	-
CO3	M	M	M	H	H	L	L	M	-	-
CO4	M	M	L	M	H	L	L	M	-	-
CO5	-	M	L	-	-	-	-	H	-	-

Semester I	PROGRAMMING IN C LAB	Hours/Week: 5	
Core Course2		Credits: 3	
Course Code 20UCAC11P		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

CO1: apply the specification of syntax, rules for numerical, constants, variables and data types. [K3]

CO2: write C programs using arrays, operators, decision making/looping statements, functions, structure, pointer and files. [K3]

CO3: execute the programs with required input. [K3]

CO4: prepare the record with the neat output. [K3]

CO5: test program with modification and justify the result. [K4]

Course Code 20UCAC11P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	M	H	-	-	-	-	-	-	-
CO2	H	H	M	M	M	-	-	-	-	L
CO3	M	M	M	H	M	L	L	M	-	-
CO4	M	-	L	M	-	L	L	M	-	-
CO5	-	M	L	-	-	-	-	H	L	-

Semester I	DISCRETE MATHEMATICS	Hours/Week: 4	
Allied Course 1		Credits: 4	
Course Code 20UCAA11		Internal 25	External 75

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

- CO1: understand the basic concepts of relations, functions, mathematical induction, theory of matrices, graph theory. [K1]
- CO2: discuss the types of relations, functions, matrices, graphs with examples. [K2]
- CO3: explain proofs of theorems with examples. [K2]
- CO4: apply and solve the problems in relations, functions, matrices and graphs. [K3]
- CO5: explain the algorithms for problems in relations and functions and point out the solutions using algorithms on graphs. [K4]

Course Code 20UCAA11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	L	H	M	M	L	-
CO2	H	L	H	M	M	L	-
CO3	H	-	L	L	M	L	-
CO4	H	-	M	M	M	L	-
CO5	H	-	M	L	M	L	-

Semester I	MS-OFFICE LAB	Hours/Week: 2	
Skill Enhancement Course 1		Credits: 2	
Course Code 20UCAS11P		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners will be able to

- CO1: examine the given problem and identify the basic tools and features in MS-Word, MS- Excel, MS-Power Point and MS-Access. [K3]
- CO2: design document using required tools and elements to create professional and academic documents/presentations. [K3]
- CO3: execute the steps to solve real world problems. [K3]
- CO4: present the analysis of data using chart and record effectively. [K3]
- CO5: explain the necessity of tools used and deduce the answers for any queries raised. [K4]

Course Code 20UCAS11P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	M	H	M	-	-	-	-	-	-	-
CO2	M	H	M	M	H	-	-	-	L	L
CO3	-	H	-	M	-	L	-	M	-	L
CO4	M	H	L	M	H	L	L	M	-	-
CO5	H	M	L	-	-	-	-	H	-	-

Semester I	VALUE EDUCATION (2020 -21 onwards)	Hours/Week: 2	
		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	PROGRAMMING IN C++	Hours/Week: 5	
Core Course 3		Credits: 4	
Course Code 20UCAC21		Internal 25	External 75

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

- CO1: describe the procedural and object oriented paradigm with concepts of stream classes, functions, pointer and inheritance. [K1]
- CO2: list different types of operators and polymorphism. [K2]
- CO3: explain the concepts of object-oriented programming, function, constructor, overloading, inheritance and string class. [K2]
- CO4: make the use of functions, inheritance, virtual function, overloading, Streams, string manipulation, constructor and destructor to solve complex problems. [K3]
- CO5: analyze various ideas related with the function, string, inheritance and constructor for the real time application. [K4]

Course Code 20UCAC21	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	H	M	-	-	-	-	-	-	-
CO2	H	M	M	M	M	-	-	-	-	-
CO3	M	M	M	H	H	L	L	M	-	-
CO4	M	M	L	M	H	L	L	M	-	-
CO5	-	M	L	-	-	-	-	H	-	-

Semester II	PROGRAMMING IN C++ LAB	Hours/Week: 5	
Core Course 4		Credits: 3	
Course Code 20UCAC21P		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners should be able to

- CO1: make use of classes, objects, methods, functions and constructors. [K3]
- CO2: write programs using C++ features such as composition of objects, Operator overloading, function overloading, virtual functions, inheritance Polymorphism. [K3]
- CO3: execute the programs with required input. [K3]
present output effectively and prepare the record with the neat output. [K3]
- CO5: test program with modification and justify the result. [K4]

Course Code 20UCAC21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	H	M	H	-	-	-	-	-	-	-
CO2	H	M	M	M	M	-	-	-	-	L
CO3	M	M	M	H	M	L	L	M	-	-
CO4	M	L	L	M	-	L	L	M	-	-
CO5	-	L	L	-	-	-	-	H	L	-

Semester II	RESOURCE MANAGEMENT TECHNIQUES	Hours/Week: 4	
Allied Course 2		Credits: 4	
Course Code 20UCAA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: define the basic concepts of operations research, linear programming problem, assignment problem and transportation problem. [K1]
- CO2: discuss models, phases, characteristics of operations research, and mathematical formulation in linear programming problem, dual, assignment problem and transportation problem. [K2]
- CO3: explain various methods of linear programming problem, assignment problem and transportation problem. [K2]
- CO4: solve the problems in linear programming problem, assignment problem and transportation problem. [K3]
- CO5: explain the algorithms for problems in linear programming problem, assignment problem and transportation problem. [K4]

Course Code 20UCAA21	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	L	H	M	M	H	-
CO2	H	-	H	M	M	M	-
CO3	H	L	H	L	M	M	-
CO4	H	-	H	M	M	M	-
CO5	H	-	H	M	M	M	-

Semester II	PHOTOSHOP LAB	Hours/Week: 2	
SEC 2		Credits: 2	
Course Code 20UCAS21P		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners will be able to

CO1: examine the given design problem, identify the basic tools and features in Photoshop. [K3]

CO2: design Photoshop document implementing the required tools and elements to get a good photo effect. [K3]

CO3: execute the steps to produce required output. [K3]

CO4: present output effectively and prepare the record. [K3]

CO5: explain the necessity of tools used, deduce the changes to be incorporated over the developed application using the acquired knowledge. [K4]

Course Code 20UCAS21P	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	M	H	L	-	-	-	-	-	-	-
CO2	H	M	M	M	M	-	-	-	L	L
CO3	-	H	-	M	H	-	L	M	-	L
CO4	H	H	L	M	-	L	L	M	-	-
CO5	H	M	L	-	-	-	-	H	-	-

Semester II	DIGITAL LOGIC	Hours/Week: 2	
SEC 3		Credits: 2	
Course Code 20UCAS22		Internal 40	External 60

COURSE OUTCOMES

On successful completion of the course, the learners will be able to

CO1: define number system, codes, basics of Boolean algebra. [K1]

CO2: describe the concept of arithmetic circuits, combinational circuits, flip- flops, counters and registers. [K1]

CO3: demonstrate number systems, codes, Boolean algebra, K-map, binary arithmetic, combinational and sequential circuits. [K2]

CO4: solve number conversions and Boolean expressions, apply gates to design, combinational and sequential circuits. [K3]

CO5: compare and analyze number systems, codes, Boolean algebra, combinational and sequential circuits. [K4]

Course Code 20UCAS22	PO1		PO2	PO3		PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	M	-	M	-	-	-	-	-	-	-
CO2	H	H	M	-	M	-	-	-	-	-
CO3	-	H	L	M	M	L	-	M	-	-
CO4	H	-	L	H	H	L	L	M	-	-
CO5	M	M	L	-	-	-	-	M	-	-

B.Com

Programme Educational Objectives (PEOs)

The students will be able to

become a successful entrepreneur and job provider with leadership and managerial qualities
apply the digital knowledge and the acquired skills in all fields (Accounting, Taxation, Banking, *etc.*) to suit the needs of the employment/business/profession.

exhibit professional ethics and moral values as an individual and as a team in their activities towards society

Key Components of Mission Statement	PEO1	PEO2	PEO3
Environment for inculcating research aptitude	✓	✓	✓
Application of the findings and suggestions of the students' project works for the betterment of the society	-	✓	✓
Transformation into dynamic entrepreneurs and potential job providers.	✓	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of B.Com. Programme, the students will be able to

PO1 - Disciplinary Knowledge

PSO 1.a : apply effectively the acquired knowledge of concepts, principles, laws and practices of Accounting, Banking, Marketing, Management, Auditing, Insurance and Economics for Post Graduate Programmes or Professional Programmes like CMA, CS and CA.

PSO 1.b : be placed as accountants, consultants, advisors, clerks, assistants to professionals, agents or become job providers.

PO2 – Communication Skills

PSO 2 : communicate confidently and effectively the commerce related contents to consumers, entrepreneurs and other recipients in their career at all levels in the institution or organisation.

PO3 – Scientific Reasoning and Problem Solving

PSO 3.a : identify the problems in association with finance and accounting in real life situations and solve them systematically by applying financial, marketing, statistical and accounting tools and techniques.

PSO 3.b : budget, assess and plan for future investment, expenses and taxes by analysing and interpreting financial and accounting statements.

PO4 – Critical Thinking and Analytical Reasoning

PSO 4 : evaluate the theories and practices of commerce and economic and provide valid conclusions contributing to the economics and social development of nation.

PO5 – Digital Literacy, Self - directed and Lifelong Learning

PSO 5.a : make use of ICT and reflective thinking for self directed learning to face career challenges.

PSO 5.b : enhance their knowledge and update their skill in software applications in commerce practices and provide valuable consultancy services to customers, consumers and taxpayers as their lifelong learning process in the fields of their interest.

PO6 – Co-operation/Team Work and Multicultural Competence

PSO 6 : self manage and strengthen inter personal relationship with multicultural competence by adopting managerial skills in team work to achieve common goal for the betterment of the institution / organisation and society.

PO7 –Moral and Ethical Awareness

PSO 7 : uphold the imbibed legal, ethical and moral values in every sphere of life and strive for shifting from material system to DEMAT (de-material) system (paper to paperless) for sustainable environment.

முதல் பருவம்	சந்தையியல் - I	நேரம் ∴ வாரம் : 5	
பகுதி – I		தரமதிப்பு : 3	
பாடக் குறியீட்டு எண் 20UCOT11		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1 : சந்தைகளில் பற்றாட அணுகுமுறை , சுவர மறு சந்தைப்பணிகளை
வாங்குபவர், சுவர்வாங்கு நவீன முறைகளை தெரிந்துகொள்வார். [K1]

CO2 : சந்தையாள வகைகள் , சந்தையாடுகை பணிகளான வகைகள் அவற்றாற்றாடையு
வெறுபாடுகள் மறு முகையத்துவதல் புரர் கொள்வார். [K2]

CO3: சந்தையாயற கொடபாடுகள் , சந்தையாயற நடவடிக்கைகள் , பொருவரத்து சாதனங்கள் ,
பொருட்களை வகைப்படுத்துதல் மறு நிதி வசதி ஆகியவற்றைப் பற்ற விரிவாக
அறந்து கொள்வார். [K2]

CO4: சந்தையாடுகை பணிகளை செயல்படுத்துதல் வழி முறைகளான நிறை குறைகளை அறந்து
நடைமுறை ஏற்றவாறு பயன்படுத்துதல் . [K3]

CO5: ஐந்தையாவல் தர நிரணியல் , பொருவரத்து முறைகள் மறு சந்தையாவல் கலவை
பற்ற பகுப்பாய் செய்வார், கொள்முது சிக்கல்களை புரர் தரவு காணல் . [K4]

Course Code 20UCOT11	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	M	H	M	L	L	-	-	-	-
CO2	H	M	H	M	L	L	-	-	L	-
CO3	H	H	H	M	L	L	-	-	L	-
CO4	H	M	H	L	-	L	-	-	L	L
CO5	H	M	H	M	L	L	-	-	-	L

Semester I	FINANCIAL ACCOUNTING - I	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 20UCOC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the meaning and importance of accounting principles, conventions, concepts and terminologies. [K1]

CO2: describe the final accounts. [K2]

CO3: apply the rules for passing journal entries, posting into ledger, prepare accounts. [K3]

CO4: prepare bank reconciliation statement, trial balance and rectification of errors. [K3]

CO5: arrive the profit or loss for trading and non-trading concern, and apply the conversion method in single entry system. [K4]

Course Code 20UCOC11	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	H	M	H	-	-	-	-	-	-
CO2	H	H	H	M	M	-	-	-	-	-
CO3	H	H	H	H	H	-	-	-	-	M
CO4	H	H	H	H	H	M	-	-	-	-
CO5	H	H	H	H	H	M	-	-	-	-

Semester I	MANAGERIAL ECONOMICS	Hours / Week : 5	
Allied Course		Credits: 3	
Course Code 20UCOA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the nature and scope of managerial economics, demand analysis, cost and revenue analysis, market structure and profit analysis. [K1]

CO2: indicate the objective of business firm, demand forecasting, cost concept, pricing policy and profit forecasting. [K2]

CO3: classify the basic managerial economics discipline, elasticity of demand, revenue concept, market structure and profit. [K2]

CO4: identify the problem of economics, importance of consumer surplus, relationship between AR, MR & TR, types of pricing and profit planning. [K3]

CO5: analyse the profit maximization and sales maximization of a firm, demand forecasting, cost, pricing process and policy, break even analysis. [K4]

Course Code 20UCCA11	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	H	H	L	L	-	H	-	-	-	-
CO2	H	H	H	L	-	H	-	-	-	-
CO3	H	H	M	L	-	H	-	-	-	-
CO4	H	H	H	M	-	H	-	-	-	-
CO5	H	M	M	L	-	H	-	-	-	-

Semester I	ELEMENTS OF COMPANY ORGANISATION	Hours/Week:5	
Allied Course		Credits: 3	
Course Code 20UCOA12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the meaning and definition of company, its characteristics, promoter, company documents, shares, shareholders and the essentials for company meetings. [K1]

CO2: classify companies, shares, company meetings, resolutions and enumerate the contents of company documents, functions and duties of promoters. [K2]

CO3: explain the procedure for formation of company, issue and redemption of shares, and conducting the company meetings. [K2]

CO4: apply the highlights of MCA-21 Schemes, Companies Rules regarding share certificate, Provisions of Companies Act regarding formation of a company, preparation of documents, alteration of contents of documents and conducting company meetings. [K3]

CO5: analyse the relationship and/or distinction between Memorandum and Articles, private and public companies, share certificate and share warrant, and the matters requiring ordinary resolution and special resolution. [K4]

Course Code 20UCOA12	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	M	M	-	-	L	-	-	-	-
CO2	H	H	H	M	-	M	L	M	M	-
CO3	M	-	M	-	-	L	-	-	-	-
CO4	M	M	M	L	-	-	-	H	M	M
CO5	H	-	H	L	-	M	L	L	L	M

Semester I	MS OFFICE PRACTICAL	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 20UCOS11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the basic steps to create word document, excel worksheet and powerpoint presentation. [K3]

CO2: highlight the specific procedures for the required lab practical in Ms-Word, Ms-Excel and Ms-Powerpoint. [K3]

CO3: enter the data to create the required document, worksheet and presentation. [K3]

CO4: display and explain the output. [K3]

CO5: justify the answer for Viva Voce questions. [K4]

Course Code 20UCOS11P	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	H	M	L	L	-	H	H	-	-
CO2	M	L	M	L	L	-	H	H	-	-
CO3	H	M	H	L	-	-	H	H	-	-
CO4	H	L	H	M	L	-	H	H	-	-
CO5	H	H	H	H	L	-	H	H	-	-

Semester I	VALUE EDUCATION	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	FINANCIAL ACCOUNTING- II	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 20UCOC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the features of branch and departmental accounts, consignment, joint venture, hire purchase and instalment purchase system. [K1]

CO2: describe basic accounting treatment and compare consignment and sales, partnership and joint venture, branch and departmental accounting and hire purchase and instalment purchase system. [K2]

CO3: apply the accounting principles to find out profit or loss from concerned accounts and ventures. [K3]

CO4: illustrate goods sent at an invoice price, joint bank transactions, inter branch/ department transfer and the apportionment of indirect expenses among various departments. [K3]

CO5: calculate the value of abnormal loss, closing stock in consignment and repossessed stock in case of default, present branch and departmental accounts in final accounts format. [K4]

Course Code 20UCOC21	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	H	H	---	---	---	---	---	L	---
CO2	H	H	H	---	---	---	---	---	L	---
CO3	H	H	M	M	---	---	---	---	L	L
CO4	H	H	H	H	---	---	---	---	L	L
CO5	H	H	M	H	---	L	---	---	L	L

Semester II	ECONOMIC DEVELOPMENT OF INDIA	Hours / Week : 5	
Allied Course		Credits: 3	
Course Code 20UCOA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the concepts of primary, secondary, service sectors and LPG in Indian Economy. [K1]

CO2: summarize the measures taken by various sectors in Indian economy. [K2]

CO3: classify the importance and problems of agriculture, industries and service sectors. [K2]

CO4: apply the economic policies in real time situation. [K3]

CO5: analyse the growth and development of various sectors and MNCs. [K4]

Course Code 20UCOA21	PO1		PO2	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	H	L	L	-	H	-	-	-	-
CO2	H	H	H	L	-	H	-	-	-	-
CO3	H	H	M	L	-	H	-	-	-	-
CO4	H	H	H	M	-	H	-	-	-	-
CO5	H	M	M	L	-	H	-	-	-	-

Semester II	PRINCIPLES OF INSURANCE	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UCOA22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: define the basic concepts of insurance and its types. [K1]

CO2: describe the principles of life, marine and fire insurance. [K1]

CO3: explain the procedure for taking life, marine and fire policies. [K2]

CO4: apply the various policy conditions for making insurance claims through online mode. [K3]

CO5: explain the role of insurance and IRDA in the field of insurance sector. [K4]

Course Code 20UCOA22	PO1		P02	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3. a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO6	PSO7
CO1	H	M	M	L	-	-	-	-	-	-
CO2	H	M	M	L	-	-	-	-	-	-
CO3	H	M	M	L	L	-	M	M	-	-
CO4	H	M	M	M	M	L	H	H	M	-
CO5	H	M	M	L	L	L	-	-	-	M

Semester II	E-COMMERCE PRACTICAL	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 20UCOS21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the knowledge to choose and fill the specific form to be used for money transaction with banks and post office. [K3]

CO2: apply the procedure to search the internet for income tax rate, bank rates, gold rates, silver rates, share price and exchange rate. [K3]

CO3: sketch out the features of e-mail, steps to create and send e-mail by following the e-mail etiquettes. [K3]

CO4: compare various rates and prices, distinguish contents and enclosures of various Forms. [K3]

CO5: calculate payroll and wage sheet in MS Access and MS Excel to arrive the net wages/ pay from the given data. [K4]

Course Code 20UCOS21P	PO1		P02	PO3		PO4	PO5		PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5.a	PSO 5.b	PSO 6	PSO 7
CO1	L	L	H	-	-	-	L	-	-	-
CO2	M	L	M	-	-	-	H	M	-	L
CO3	H	-	M	-	-	-	H	-	-	M
CO4	L	-	M	-	-	-	L	-	-	L
CO5	M	L	M	-	-	-	H	M	-	M

B.Com. (Computer Applications)

Programme Educational Objectives (PEOs)

The students will be able to

- ☐ get employment in banks, IT sectors, Educational Institutions and Leading Companies and also to shine as successful entrepreneurs.
- ☐ apply the acquired computation and digital skills in wider areas of commerce and Industry.
- ☐ engage in lifelong learning and also serve the society with a focus on ethics and values.

Key Components of Mission Statement	PEO1	PEO2	PEO3
Environment for understanding and continuous learning	-	✓	✓
Choice of Higher studies or employment or self employment	✓	✓	✓
Applications for the betterment of the society	✓	✓	✓

Programme Specific Outcomes (PSO)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of the B.Com.(C.A) Programme the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a : apply the acquired knowledge of the principles of Accounting, Banking, Law, Marketing and Computer Applications in PG Programmes.

PSO 1.b : apply Computer Application skill with Commerce knowledge to cater to the manpower needs of enterprises and institutions.

PO2 - *Communication Skills*

PSO 2.a : draft mails, prepare reports and communicate effectively in oral and written form to employers, officials and others in the institution / organisation.

PSO 2.b : communicate proficiently the complex contents of Commerce and Computer Application procedures in a concise manner to the recipients including learners, peer teams and academicians.

PO3 - *Scientific Reasoning and Problem Solving*

PSO 3 : identify the commerce oriented problems in real-life situations and solve them systematically/scientifically by following business software to face career challenges.

PO4 - *Critical thinking and Analytical Reasoning*

PSO 4.a : critically evaluate commerce related theories, policies and procedures to provide valid conclusions for the betterment of the society.

PSO 4.b : analyse commerce oriented statements/information with appropriate formulae, tools and programmes, interpret the findings and provide need based suggestions.

PO5 - *Digital Literacy, Self - directed and Lifelong Learning*

PSO 5 : use ICT to adapt to digitalized environment in all fields of Commerce and other fields of their interest and develop software by means of self-directed and lifelong learning for professional growth, environment sustainability and nation building.

PO6 - *Co-operation/Team Work and Multicultural Competence*

PSO 6 : emerge with Commerce knowledge, Computer Application skills, leadership potentialities, multi cultural competence and team spirit that help them in team work for achieving common goals for the welfare of the institution, business or society.

PO7 - *Moral and Ethical Awareness*

PSO 7 : uphold the imbibed legal and moral values in their personal and professional life to function ethically as socially responsible citizen.

முதல் பருவம்	சந்தையியல் - ஐ	நேரம் / வாரம் : 5	
பகுதி - I		தரமதிப்பு : 3	
பாடக் குறியீட்டு எண் 20UCOT11		அக மதிப்பெண் 25	புற மதிப்பெண் 75

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: சந்தைகளில் பற்றாட்டில் அல்ல முறைகள், கவர்ப்பு மற்றும் சந்தைப் பணிகளை வடிவமைப்பது; ஒவ்வொன்றும் நவீன முறைகளை அறிந்துகொள்வது. [K1]

CO2: சந்தையாளர் வகைகள், சந்தையாளர்களைப் பணிகளை வகைகள் அவற்றைக் கட்டிய வேறுபாடுகள் மற்றும் முக்கியத்துவம் புரட்டி கொள்வது. [K2]

CO3: சந்தையாளர்களைக் கட்டியபாடுகள், சந்தையாளர் நடவடிக்கைகள், பொருள்வரத்து சாதுவங்கள், பொருட்களை வகைப்படுத்துதல் மற்றும் நிதி வசதி ஆகியவற்றைப் பற்றி விரிவாக அறிந்து கொள்வது. [K2]

CO4: சந்தையாளர்களைப் பணிகளைச் செயல்படுத்துதல் வழி முறைகளில் நிறை குறைகளை அறிந்து நடைமுறைச் ஏற்றங்கள் பயன்படுத்துதல். [K3]

CO5: சந்தையாளர் தர நிரலியல், பொருள்வரத்து முறைகள் மற்றும் சந்தையாளர் கலவை பற்றி பகுப்பாய்வு செய்வது; கொள்முது சமீபகாலப் புரட்டி தரவுகளைப் பயன்படுத்தி. [K4]

Course Code 20UCOT11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2. a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	-	M	L	L	-	-	-	-
CO2	H	M	-	M	-	L	-	-	L	-
CO3	H	M	-	M	-	L	-	-	L	-
CO4	H	M	-	M	M	L	L	-	L	L
CO5	H	M	-	M	M	M	L	-	-	L

Semester I	FINANCIAL ACCOUNTING - I	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 20UCOC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the meaning and importance of accounting principles, conventions, concepts and terminologies. [K1]

CO2: describe the final accounts. [K2]

CO3: apply the rules for passing journal entries, posting into ledger, prepare accounts. [K3]

CO4: prepare bank reconciliation statement, trial balance and rectification of errors. [K3]

CO5: arrive the profit or loss for trading and non-trading concern, and apply the conversion method in single entry system. [K4]

Course Code 20UCOC11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO 4 .a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	L	L	M	H	L	L	-	-	-
CO2	H	H	H	H	H	M	H	M	-	-
CO3	H	H	H	H	H	H	H	M	-	M
CO4	H	L	H	H	H	M	H	M	-	-
CO5	H	L	H	H	H	H	H	M	-	-

Semester I	INTRODUCTION TO PC SOFTWARE	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UCCA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the basic concepts of computers and MS Office. [K1]

CO2: describe the fundamentals of computers and the features of MS-Word, MS-Excel and MS-Access. [K2]

CO3: describe the creation of power point presentation and its features. [K2]

CO4: apply the features of computer organization, MS-Word, MS-Excel, MS-PowerPoint and MS-Access. [K3]

CO5: analyze the functions of Computer and uses of Microsoft Office Applications. [K4]

Course Code 20UCCA11	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	M	H	–	M	M	–	–
CO2	H	H	H	M	M	–	M	M	–	–
CO3	H	H	M	M	H	–	–	M	–	–
CO4	H	M	M	L	–	–	M	M	–	–
CO5	H	H	H	L	L	–	–	M	–	–

Semester I	INTRODUCTION TO PC SOFTWARE – LAB	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UCCA11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the basic steps to create word document, excel worksheet, powerpoint presentation and access database. [K3]

CO2: highlight the specific procedures for the required lab practical in Ms-Word, Ms-Excel, Ms-Powerpoint and Ms-Access. [K3]

CO3: enter the data to create the required document, worksheet, presentation and database. [K3]

CO4: display and explain the output. [K3]

CO5: justify the answer for viva voce questions. [K4]

Course Code 20UCCA11P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	L	L	–	–	L	–	–
CO2	H	M	M	L	–	–	M	L	–	–
CO3	H	H	H	M	M	–	M	M	–	–
CO4	H	H	H	L	M	–	L	M	M	–
CO5	H	H	M	L	M	–	–	M	M	–

Semester I	MULTIMEDIA AND DESKTOP PUBLISHING – LAB	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 20UCCS11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the basic steps to design cards and photos using photoshop and pagemaker and for animation in flash. [K3]

CO2: present the specific steps for the required lab practical in flash, photoshop and Pagemaker. [K3]

CO3: apply the procedure to design cards, edit photos and make animations. [K3]

CO4: display and explain the creation. [K3]

CO5: justify the answer for viva voce questions. [K4]

Course Code 20UCCS11P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	L	M	L	–	–	L	–	L
CO2	H	H	L	M	H	–	–	L	–	–
CO3	H	H	L	–	M	–	–	M	–	–
CO4	H	H	–	–	–	–	–	M	M	–
CO5	H	H	M	M	L	–	–	M	M	–

Semester I	VALUE EDUCATION (2020 – 21 onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]
- CO2: indicate the importance and benefits of upholding human values. [K2]
- CO3: explain the steps to be taken for upholding human values and human rights. [K2]
- CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]
- CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	–	–	L	–	H
CO2	H	M	–	–	L	–	H
CO3	H	M	–	–	L	–	H
CO4	H	M	–	–	H	H	H
CO5	H	M	–	–	L	H	H

இரண்டாம் பருவம்	சந்தையியல் – II	நேரம் : 5	
பகுதி – I		தரமதிப்பு : 3	
பாடக் குறியீட்டு எண் 20UCOT21		அக மதிப்பெண் 25	புறமதிப்பெண் 75

கற்றல் வெளப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு மாணவர்கள்

- CO1: சந்தைப் பெருக்க செயல்பாட்டை, வளப்பாடு, வளப்பாடு முறை, ஆளாள் வளப்பாடு, வளப்பாடுப் பெருக்கம், வளப்பாடு அமைப்பைப் பொருள் மற்றும் இலக்கணத்தை அறிந்து கொள்வார். [K1]
- CO2: வளப்பாடு, வளப்பாடு ஊடகங்களின் நன்மை தரையக வளப்பாட்டையொட்டி வளக்கம், வளப்பாடுப் பெருக்க நடவடிக்கைகளின் வளக்கம், வளப்பாடுத்தொகுதல் மற்றும் வளப்பாடு அமைப்பைத் தோண்டியும் முக்கியத்துவத்துடன் நிரந்தரம் கொள்வார். [K1]
- CO3: வளப்பாடு ஊக்குவப்ப, வளப்பாடு முறை, வளப்பாட்டையொட்டி கட்டமைக்க, குறைந்தபட்சம், பரப்படு, பொதுத்தொடர்பு, நேரடி அஞ்சல் மற்றும் ஊதியம் வழங்கும் முறைகள் பற்றி அறிந்து கொள்வார். [K2]
- CO4: வளப்பாடு ஊக்குவப்ப கலவை, வளப்பாடுத்தொடு நன்மை தரையக, வளப்பாட்டையொட்டி பொறுப்புகள், வளப்பாடுத்தொகுதல் மற்றும் வளப்பாட்டையொட்டி அளக்கப்படுகின்ற பயிற்சி முறைகளின் பற்றி நடைமுறையின் பயன்படுத்துதல். [K3]
- CO5: வளப்பாடு ஊக்குவப்ப கலவையை நிரந்தரமாகக் காண்பதில், முக்கியமான நிரந்தரமாகக் காண்பதில், கொள்கைகளின் கட்டு முறை, வளப்பாடுப் பெருக்கத்துடன் முக்கியத்துவம் மற்றும் வளப்பாட்டையொட்டி நிரந்தரமாகக் காண்பதில் உள்ள பலவே நன்மைகள் குறித்து மதிப்பீடு செய்வார். [K4]

Course Code 20UCOT21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	M	–	L	L	L	–	–	L	-
CO2	H	H	–	M	M	L	–	M	L	L
CO3	H	M	L	H	L	M	L	–	M	L
CO4	H	M	L	M	L	L	–	M	L	L
CO5	H	M	L	M	L	M	–	–	M	L

Semester II	FINANCIAL ACCOUNTING – II	Hours/Week: 5	
Core Course		Credits: 5	
Course Code 20UCOC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: state the features of branch and departmental accounts, consignment, joint venture, hire purchase and instalment purchase system. [K1]
- CO2: describe basic accounting treatment and compare consignment and sales, partnership and joint venture, branch and departmental accounting and hire purchase and instalment purchase system. [K2]
- CO3: apply the accounting principles to find out profit or loss from concerned accounts and ventures. [K3]
- CO4: illustrate goods sent at an invoice price, joint bank transactions, inter branch/ department transfer and the apportionment of indirect expenses among various departments. [K3]
- CO5: calculate the value of abnormal loss, closing stock in consignment and repossessed stock in case of default, present branch and departmental accounts in final accounts format. [K4]

Course Code 20UCOC21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4 .a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	H	–	–	–	–	–	L	---
CO2	H	H	H	–	–	M	–	–	L	---
CO3	H	H	M	L	M	M	H	M	L	L
CO4	H	H	H	–	H	–	M	L	L	L
CO5	H	H	M	M	H	–	H	L	L	L

Semester II	BUSINESS APPLICATION PROGRAMMING	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UCCA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the basic concepts of C programming language. [K1]

CO2: mention the fundamentals of C programming. [K2]

CO3: work with various programming concepts in C language. [K3]

CO4: examine the application of structure and union. [K4]

CO5: analyse various decision making statements using data types, operators and array. [K4]

Course Code 20UCCA21	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	L	M	L	–	–	M	–	–
CO2	H	H	–	M	L	–	–	M	–	–
CO3	H	H	–	–	L	–	–	M	–	–
CO4	H	H	–	–	–	–	–	M	–	–
CO5	H	H	L	–	–	–	–	M	–	L

Semester II	BUSINESS APPLICATION PROGRAMMING – LAB	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UCCA21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the basic structure of a C program. [K3]

CO2: describe specific features including data types, operators, control structures, array, string, functions, structures and union. [K3]

CO3: enter the codings to execute the C program. [K3]

CO4: run the program and explain the output of the C program. [K3]

CO5: justify the answer for viva voce questions. [K4]

Course Code 20UCCA21P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	H	H	L	–	–	–	–	L	–	–
CO2	H	H	–	–	–	–	–	L	–	–
CO3	H	H	–	–	–	–	–	M	–	–
CO4	H	H	–	–	–	–	–	M	M	–
CO5	H	H	L	–	–	–	–	M	M	–

Semester II	E–COMMERCE PRACTICAL	Hours/Week: 2	
Skill Enhancement		Credits: 2	
Course Code 20UCOS21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the knowledge to choose and fill the specific form to be used for money transaction with banks and post office. [K3]

CO2: apply the procedure to search the internet for income tax rate, bank rates, gold rates, silver rates, share price and exchange rate. [K3]

CO3: sketch out the features of e-mail, steps to create and send e-mail by following the e-mail etiquettes. [K3]

CO4: compare various rates and prices, distinguish contents and enclosures of various Forms. [K3]

CO5: calculate payroll and wage sheet in MS Access and MS Excel to arrive the net wages/ pay from the given data. [K4]

Course Code 20UCOS21P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7
CO1	L	L	-	L	-	-	-	L	-	-
CO2	M	H	M	L	-	-	-	H	-	L
CO3	H	H	H	M	-	-	-	H	-	M
CO4	L	L	L	L	-	-	-	L	-	L
CO5	M	M	L	L	-	-	-	H	-	M

Semester II	ELEMENTS OF COMPANY ORGANISATION	Hours/Week:2	
Skill Enhancement Course		Credits: 2	
Course Code 20UCCS22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state the basic concepts and provisions related to company, its formation, documents, ownership & management and meetings. [K1]

CO2: interpret the procedure for company formation and conducting of company meetings. [K2]

CO3: distinguish between private and public company, equity and preference shares, ordinary and special resolution, memorandum and articles. [K2]

CO4: summarise the essentials of a valid meeting, functions and duties of promoters. [K3]

CO5: analyse the relationship among company documents and doctrines. [K4]

Course Code 20UCCS22	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO 4 .a	PSO 4.b	PSO5	PSO6	PSO7
CO1	M	M	L	–	–	–	–	–	–	L
CO2	M	M	M	–	L	–	–	L	L	L
CO3	M	M	L	–	–	–	–	–	L	–
CO4	M	M	L	–	–	–	–	–	–	L
CO5	M	M	L	–	L	–	–	–	–	L

B.B.A.

Programme Educational Objectives (PEOs)

The students will be able to

1. equip the students with professional knowledge so as to positively impact environment by addressing issues and offer appropriate and innovative solutions.
2. create professionals who strive continuously for growth in career or in their entrepreneurial ventures with steadfast focus on personal development, values and ethics
3. nurture and develop management skills in students so as to effectively handle business situations and work with enhanced efficiency.

Key Components of Mission Statement	PEO1	PEO2	PEO3
Continuous enhancement of management skills and competency	✓	✓	✓
Fosters entrepreneurial culture and innovation	✓	-	✓
Promotes right attitude, values, ethics and holistic development	-	✓	-

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On completion of B.B.A. Programme, the students will be able to

PO1 - *Disciplinary Knowledge*

PSO 1.a. apply the knowledge acquired from the courses specific and related to business administration to pursue higher studies

PSO 1.b. apply conceptual knowledge in functional areas of business to choose and establish themselves in a suitable career.

PO2 – *Scientific Reasoning and Problem Solving*

PSO 2.a. identify real-life challenges and problems in business administration, analyse them scientifically and suggest valid solutions to build a better business, society and nation

PSO 2.b. seek business opportunities in real-life situations problems for socio-economic development

PO3 – *Communication Skills*

PSO 3. communicate effectively and confidently with various stakeholders in the matters related to management.

PO4 – *Critical Thinking and Analytical Reasoning*

PSO 4. critically evaluate the micro and macro environment affecting business and provide valid suggestions using modern tools and techniques for the betterment of the organization.

PO5 – *Digital Literacy, Self - directed and Lifelong Learning*

PSO 5. use ICT to stay updated with business concepts, events, trends and technologies to handle changing and challenging business situations

PO6 – *Cooperation/TeamWork and Multicultural Competence*

PSO 6.a. develop leadership qualities so as to be capable of functioning in diverse teams for achieving success in career.

PSO 6.b. maintain interpersonal relationship and develop a positive outlook while working in teams

PO7 – *Moral and Ethical Awareness*

PSO 7. follow the legal, ethical and moral values steadfastly in their career for sustainable environment.

Semester I	PRINCIPLES OF MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 20UBAC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the role of various levels of management in an organization. [K1]

CO2: understand the requisites for effective planning and decision making. [K2]

CO3: apply the theories of management in business situations. [K3]

CO4: analyse the decision making process and its effectiveness in a company. [K4]

CO5: examine the communication process and their barriers within the working area. [K4]

Course Code 20UBAC11	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7
CO1	M	M	H	H	M	M	H	L	M	-
CO2	H	H	H	L	M	H	M	M	L	-
CO3	M	H	H	H	M	H	H	L	M	-
CO4	H	H	L	M	M	L	L	M	L	L
CO5	M	H	L	M	M	L	H	M	M	M

Semester I	BUSINESS ECONOMICS	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UBAA11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the fundamental concepts of managerial economics and macroeconomics. [K1]

CO2: explain the various factors that determine the business economics and macro indicators. [K2]

CO3: illustrate the components of micro and macroeconomics affecting business. [K2]

CO4: determine demand, cost, price and output for products in different market structures and assess macroeconomic aspects of business. [K3]

CO5: analyze the macroeconomic determinants, demand, cost, price and market structures for business. [K4]

Course Code 20UBAA11	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO7
CO1	H	H	H	M	M	L	H	L	L	M
CO2	H	M	H	M	H	L	H	M	M	M
CO3	H	M	H	H	M	H	H	H	H	M
CO4	H	M	H	M	M	M	H	M	M	L
CO5	H	H	H	H	M	H	H	M	M	M

Semester I	FINANCIAL ACCOUNTING	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UBAA12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recollect fundamental concepts from basic accounting to final accounts of trading and non-trading concerns. [K1]

CO2: describe the various approaches of accountancy, books of accounts and final accounts. [K2]

CO3: solve the basic accounting problems related to books of accounts, depreciation for trading and Non-Trading concerns. [K3]

CO4: prepare various subsidiary books with ledger, receipts and payment accounts and final accounts. [K3]

CO5: draw inference about different depreciation methods and financial position of a firm. [K4]

Course Code 20UBAA12	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO 4	PSO5	PSO 6.a	PSO 6.b	PSO 7
CO1	H	H	M	H	L	H	L	M	H	H
CO2	H	H	H	H	M	L	L	M	M	M
CO3	H	H	L	H	L	M	M	H	M	H
CO4	H	H	H	M	M	H	L	H	H	M
CO5	H	H	H	H	M	H	M	M	L	M

Semester I	VALUE EDUCATION	Hours/Week: 2	
Core Course		Credits: 2	
Course Code 20UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the general human values and their associated values that are essential to make them committed and responsible individuals. [K1]

CO2: indicate the importance and benefits of upholding human values. [K2]

CO3: explain the steps to be taken for upholding human values and human rights. [K2]

CO4: practice the individual values needed for maintaining harmonious relationship with members of family, institution, organization or society for preserving and transmitting its tradition and culture. [K3]

CO5: uphold the legal, moral, ethical and spiritual values for nurturing health and happiness leading to national integrity and peace and for the existence of human beings with humanity. [K3]

Course Code 20UGVE11	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	H	M	-	-	L	-	H
CO2	H	M	-	-	L	-	H
CO3	H	M	-	-	L	-	H
CO4	H	M	-	-	H	H	H
CO5	H	M	-	-	L	H	H

Semester II	HUMAN RESOURCE MANAGEMENT	Hours/Week: 6	
Core Course		Credits: 5	
Course Code 20UBAC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the various aspects of Human Resources Management, man power sourcing, selection, promotion, wages and salary etc., [K1]

CO2: discuss various HR policies, Training and development, Performance and reward management etc. [K2]

CO3: illustrate the reasons for the causes of labour turnover, poor relation between employees, absenteeism. [K3]

CO4: classify the various methods of selection, promotion, job evaluation, training and development and employee morale. [K4]

CO5: analyse the human resource by using various performance appraisal methods and reward them using incentives and promotions. [K4]

Course Code 20UBAC21	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7
CO1	H	H	H	M	M	L	H	M	L	L
CO2	M	H	H	M	M	L	H	M	M	M
CO3	M	M	M	H	M	H	H	L	M	M
CO4	H	H	H	L	M	H	H	M	L	L
CO5	M	H	H	H	M	H	H	L	M	L

Semester II	BUSINESS STATISTICS	Hours/Week: 5	
Allied Course		Credits: 5	
Course Code 20UBAA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: identify the various concept of business statistics. [K1]

CO2: summarize the model of business statistics. [K1]

CO3: describe the fundamentals of business statistics. [K2]

CO4: solve the problems of measures of central tendency, dispersion, correlation and regression. [K3]

CO5: calculate the measures of central tendency, dispersion, correlation and regression. [K4]

Course Code 20UBAA21	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a.	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO4	PSO 5	PSO 6.a	PSO 6.b	PSO 7
CO1	H	H	H	H	M	H	H	H	M	M
CO2	H	H	H	H	M	H	M	H	M	H
CO3	H	H	H	H	M	H	H	H	M	H
CO4	H	M	H	H	M	H	H	M	H	H
CO5	H	H	H	H	M	H	H	H	M	H

Semester II	COST ACCOUNTING	Hours/Week: 5	
Allied Course		Credits: 3	
Course Code 20UBAA22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the different types of Cost, Material, Labour, Overheads and Unit costing. [K1]

CO2: identify the role of qualified and competent cost Accountant. [K2]

CO3: understand the various Cost Accounting Tools used in an organisation. [K2]

CO4: show solutions to problems in the areas of Material, Labour, Overhead and Output Costing. [K3]

CO5: compare and select from different techniques in Material, Labour, Overhead and Output costing. [K4]

Course Code 20UBAA22	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a.	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO4	PSO 5	PSO 6.a	PSO 6.b	PSO 7
CO1	H	H	M	H	L	H	L	M	H	H
CO2	H	H	H	H	M	L	L	M	M	M
CO3	H	H	H	H	L	M	M	H	M	H
CO4	H	H	M	M	M	H	L	H	H	M
CO5	H	H	H	H	M	H	M	M	L	M

Semester II	LEADERSHIP SKILLS	Hours/Week: 2	
Skill Enhancement Course		Credits: 2	
Course Code 20UBAS21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: state about the fundamental concepts related to leader and leadership. [K1]

CO2: enumerate the functions of leadership, compare the dimensions of leadership and state the importance of communication, planning and interpersonal skills. [K1]

CO3: describe and distinguish leadership dimensions, skills and leader as a boss, planner, communicator, feedback seeker, guide and counsellor. [K2]

CO4: illustrate with example functions, dimensions and skills of leadership. [K3]

CO5: analyse the role of a leader, leadership styles and skills. [K4]

Course Code 20UBAS21	PO1		PO2		PO3	PO4	PO5	PO6		PO7
	PSO 1.a.	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO4	PSO 5	PSO 6.a	PSO 6.b	PSO 7
CO1	H	H	M	H	L	H	L	M	H	H
CO2	H	M	H	H	M	L	L	M	M	M
CO3	M	H	H	H	L	M	M	H	M	H
CO4	H	H	M	M	M	H	L	H	H	M
CO5	M	M	M	M	L	M	L	H	H	M

PG Programmes

Programme Educational Objectives (PEOs)

PEOs are broad statements that describe the career and professional achievements that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the Mission of the Institution.

Programme Outcomes (POs)

POs shall be based on Graduate Attributes (GAs) of the Programme. The GAs are the attributes expected of a graduate from a Programme in terms of knowledge, skills, attitude and values. The Graduate Attributes include Disciplinary Knowledge, Communication Skills, Critical Thinking, Problem Solving, Analytical Reasoning, Research Related Skills, Co-operation/Team Work, Scientific Reasoning, Reflective Thinking, Information/Digital Literacy, Multicultural Competence, Moral and Ethical Awareness/Reasoning, Leadership Qualities and Lifelong Learning.

On successful completion of the Programme, the students will be able to

- 1 apply their in depth domain knowledge and practical skills in interdisciplinary fields for research-based endeavours, employment and entrepreneurship development. (*Disciplinary Knowledge*)
- 2 communicate proficiently and confidently with the ability to present complex ideas in a concise manner to assorted groups. (*Communication Skills*)
- 3 identify, formulate and solve problems in a consistent and systematic way with updated skills using modern tools and techniques. (*Scientific Reasoning and Problem Solving*)
- 4 analyze the data, synthesise the findings and provide valid conclusion by critical evaluation of theories, policies and practices for the betterment of society. (*Critical Thinking and Analytical Reasoning*)

- 5 explore and evaluate globally competent research methodologies to apply appropriately in interdisciplinary research; Develop and sustain the research capabilities to meet the emerging needs for the welfare of the society. (*Research Related Skills*)
- 6 use ICT to mould themselves for lifelong learning activities to face career challenges in the changing environment. (*Digital Literacy, Self - directed and Lifelong Learning*)
- 7 self-manage and function efficiently as a member or a leader in diverse teams in a multicultural society for nation building. (*Co-operation/Team Work and Multicultural Competence*)
- 8 uphold the imbibed ethical and moral values in personal, professional and social life for sustainable environment. (*Moral and Ethical Awareness*)

M.A.Tamil

Programme Educational Objectives (PEOs)

இந்த பாடப்பிரிவு முடித்த பிறகு மாணவர்கள்,

- தமிழின் விழுமியங்களை அறிந்து கொள்வதால், உயர்கல்வி நிலையங்களில் கற்பிக்கும் திறன் பெற்று கல்வி துறைசார் பணி வாய்ப்பு பெறுவர்.
- தமிழின் இலக்கண இலக்கியங்களை தெளிவுறக் கற்பதன் மூலம் முனைவர் பட்ட ஆய்வினை மேற்கொள்ளும் திறன்களைப் பெறுவர்.
- திறனாய்வு நெறிகளைப் புரிந்து கொண்டு அதன் அடிப்படையில் கோட்பாட்டு ஆராய்ச்சியில் ஈடுபடுவர்.
- பண்டைத் தமிழின் வாழ்வியல் நெறிகளைக் கற்பதால் மானுட விழுமியங்களின் வழி வாழ்க்கையை நடத்தும் திறனறிவர்.

Key Components of Mission Statement	PEO1	PEO2	PEO3	PEO4
To give the quality education	✓	-	-	-
Encouraging and motivating students to bring out their tallents	✓	✓	✓	-
To develop their enterprenure skills	-	✓	✓	-
Improve their confidence level	✓	-	-	✓

ProgrammeSpecific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

இந்தப் பாடப்பிரிவு முடித்த பிறகு மாணவர்கள்,

PO1: துறைசார் அறிவு

PSO1.a: நல்லாசிரியராக, நல்லாராய்ச்சியாளராக, இதழியலாளராக, பேச்சுக்கலை அறிந்தவராக, எழுத்தாளராக முடியும்.

PSO1.b: தமிழுடன் தொடர்புடைய தொல்லியல், கல்வெட்டியல், இதழியல், ஊடகவியல், நாணயவியல் போன்ற பிற துறைகளில் வேலைவாய்ப்பு பெற இயலும்.

PO2: அறம் சார்ந்த அறிவும் பேச்சாற்றலும்

PSO2.a: இலக்கண இலக்கியங்களைப் படிப்பதன் மூலம் சிறந்த எழுத்தாற்றலைப் பெற முடியும்.

PSO2.b: மொழி பற்றிய வரலாறு, தன்மை ஆகியவற்றில் ஆழ்ந்த அறிவு பெற்று பேச்சாளராக வளர முடியும்.

PO3: முறையான தீர்வுகாணல்

PSO3: இலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களை தற்கால சமூகச் சூழலோடு வளர்ச்சி நிலையோடு ஒப்பிட்டுக் காண்பதால் கல்வியில் ஏற்படுகின்ற மாற்றங்களைப் புரிந்து கொண்டு சமுதாயத்துடன் ஒன்றிணைய முடியும் .

PO4: இடர்களை அறிந்து கொண்டு எதிர் கொள்ளல்

PSO4: இலக்கியங்கள், இலக்கணங்கள் கூறும் அறத்தினைப் புரிந்து கொள்வதன் மூலம் வாழ்க்கையை அறத்துடன் நடத்துவதால் மனித சமுதாயம் பயன் பெறும். இடர்பாடுகள் நிறைந்த எச்சூழலையும் தான் கற்ற கல்வியின் உதவியுடன் எதிர் கொள்ள இயலும்.

PO5: ஆய்வியல் அறிவு

PSO5: ஆய்வு மற்றும் ஆய்வாளர்களுக்குரிய திறன்களை பண்புகளை நாகரிகத்தினைப் புரிந்து கொள்ள இயலும்.

PO6: கணினி அறிவும் தொடர் கற்றல் ஆற்றலும்

PSO6: போட்டித் தேர்வுகளை கணினி அறிவின் உதவியுடன் தன்னம்பிக்கையுடன் எதிர்கொள்ள இயலும்.

PO7: ஆற்றலை ஒருங்கிணைத்தல்

PSO7: தமிழரின் வாழ்வியலை, இலக்கண இலக்கியங்கள் மூலம் அறிந்து கொண்டு, தனது வாழ்க்கையை, மொழிநடையைச் செம்மைப்படுத்துவதன் வழி மாணவ சமுதாயத்தையும், அறிஞர் உலகத்தையும் திருப்தியடையச் செய்ய இயலும்

PO8: அறம் சார்ந்த விழிப்புணர்வு

PSO8: தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களை புரிந்து கொண்டு மாணவ சமூகத்திற்கும் மனித சமுதாயத்திற்கும் சேவை செய்ய இயலும்.

முதல் பருவம்	தொல்காப்பியம் - எழுத்து	நேரம் /வாரம் : 6	
முதன்மைப் பாடம்		தரமதிப்பு : 5	
பாடக் குறியீட்டு எண் 20PTAC12		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழின் ஒலியமைப்பையும் உச்சரிப்பையும் புரிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO2: இலக்கண நூலின் அமைப்பையும் பயன்பாட்டையும் அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO3: திறனாய்வு நோக்கில் இலக்கணங்களைக் கற்றுப் பயன்படுத்துவர். [K3]

CO4: சொற்களின் சேர்க்கையையும் அதன் பயன்பாட்டையும் பகுத்து ஆய்ந்து வெளிப்படுத்துவர். [K4]

CO5: நூற்பாக்கள் மற்றும் உரைகளின் வழி சொற்களின் பயன்பாட்டை மதிப்பிடுவர். [K5]

Course	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
Code 20PTAC12	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	L	H	L	L	-
CO2	H	H	H	H	M	-	H	L	L	M
CO3	H	H	H	H	M	-	H	L	L	-
CO4	H	H	H	H	M	-	H	L	L	-
CO5	H	H	H	H	M	-	H	L	L	-

முதல் பருவம்	சிற்றிலக்கியம்	நேரம் / வாரம் : 6	
முதன்மைப் பாடம்		தரமதிப்பு : 4	
பாடக் குறியீட்டு எண் 20PTAC14		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1:: சிற்றிலக்கியங்களின் தோற்றத்திற்கான சமய, சமூகச் சூழலை புரிந்து கொண்டு வெளிப்படுத்துவர். [K2]

CO2: பாட்டியல் நூல்களின் அடிப்படையில் சிற்றிலக்கியங்களைக் கற்றுக் கொண்டு வெளிப்படுத்துவர். [K2]

CO3: சிற்றிலக்கிய வகைகள், உத்திகள், கொள்கைகளைப் பயன்படுத்த அறிவர். [K3]

CO4: ஒப்பீட்டு நோக்கில் சிற்றிலக்கியங்களை ஆராய்ந்து வெளிப்படுத்துவர். ஜமு4ஸ

CO5: சிற்றிலக்கியங்கள் காட்டும் வாழ்வியல் நெறிகளை மதிப்பீடு செய்து எடுத்துரைப்பர்.[K5]

Course Code 20PTAC14	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	H	H	L	L	L
CO2	H	H	H	H	H	-	H	L	-	-
CO3	H	H	H	H	H	-	H	L	-	-
CO4	H	H	H	H	H	H	H	L	H	H
CO5	H	H	H	H	H	M	M	L	H	H

இரண்டாம் பருவம்	தொல்காப்பியம் - சொல்	நேரம் / வாரம் : 6	
முதன்மைப் பாடம்		தரமதிப்பு : 5	
பாடக் குறியீட்டு எண் 20PTAC22		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: சொல்லிலக்கண மரபினைப் புரிந்து கொண்டு வெளிப்படுத்துவர். [K2]

CO2: சொல்லாக்கங்களைப் பயன்படுத்த அறிந்து எடுத்துரைப்பர். [K2]

CO3: சொற்களை, சொற்றொடர்களை, தொடர் அமைப்புகளையும் அதனுடைய இயைபைப் பயன்படுத்த பயிற்சி பெறுவர். [K3]

CO4: தொல்காப்பியர் காலச் சொல் வகைகளைத் தொகுத்துக் காண அறிவர். [K4]

CO5: சொற்களின் அமைப்பையும் பயன்பாட்டையும் மதிப்பிடுவர். [K5]

Course Code 20PTAC22	PO1		PO2		PO3	PO4	PO5	PO6	PSO7	PSO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	M	-	H	L	H	-
CO2	H	H	H	H	M	-	H	L	H	-
CO3	H	H	H	H	M	-	H	L	L	-
CO4	H	H	H	H	M	-	H	L	L	-
CO5	H	H	H	H	M	-	H	L	L	-

இரண்டாம் பருவம்	உரையாசிரியர்களும் உரைமரபுகளும்	நேரம்:வாரம் : 6	
முதன்மைப் பாடம்		தரமதிப்பு : 5	
பாடக் குறியீட்டு எண் 20PTAC24		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: உரைகளின் இலக்கியத் திறத்தினை அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO2: உரையாசிரியர்கள் குறித்து அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO3: தமிழிலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களை இனம் காண்பர்.[K3]

CO4: உரைகள் தோன்றியதன் கால, சமுதாய, அரசியல் பின்னணியை ஆராய்ந்து எடுத்துரைப்பர். [K4]

CO5: தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களை உரைகளின் வழி மதிப்பிடுவர்.[K5]

Course Code 20PTAC24	PO1		PO2		PO3	PO4	PO5	PO6	PSO7	PSO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	-	H	L	L	-
CO2	H	H	H	H	H	-	H	L	-	-
CO3	H	H	H	H	H	-	H	L	L	-
CO4	H	H	H	H	H	-	H	L	-	-
CO5	H	H	H	H	H	L	H	L	H	H

இரண்டாம் பருவம்	தமிழ் இலக்கிய வரலாறு	நேரம் : வாரம் : 6	
விருப்பப்பாடம்		தரமதிப்பு : 4	
பாடக் குறியீட்டு எண் 20PTAE21		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழ் இலக்கிய வரலாற்றைக் கால முறைப்படி கணினித் தமிழ்

வரை அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO2: தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களைப் புரிந்து கொண்டு

வெளிப்படுத்துவர். [K2]

CO3: இலக்கியங்கள் தோன்றியதன் வரலாறு, கால, சமுதாய, அரசியல் பின்னணியை

ஆராய்ந்து வெளிப்படுத்துவர். [K3]

CO4 : இலக்கியங்கள், இலக்கணங்கள் கூறும் அறத்தினைப் புரிந்து கொண்டு

எடுத்துரைப்பர். [K4]

CO5: தமிழிலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களைத் தற்காலச்

சமூகச் சூழலோடு வளர்ச்சி நிலையோடு ஒப்பிட்டு இனம் காண்பர். [K5]

Course Code 20PTAE21	PO1		PO2		PO3	PO4	PO5	PO6	PSO7	PSO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	L	H	H	M	L
CO2	H	H	H	H	H	H	H	H	H	H
CO3	H	H	H	H	H	-	H	H	-	-
CO4	H	H	H	H	H	H	H	H	H	H
CO5	H	H	H	H	H	-	H	H	-	-

இரண்டாம் பருவம்	வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு	நேரம் / வாரம்:6	
விருப்பப் பாடம்		தரமதிப்பு : 4	
பாடக் குறியீட்டு எண் 20PTAE22		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்தபிறகு, மாணவர்கள்

CO1: தமிழ் இலக்கிய வரலாற்றைக் கால முறைப்படி கணினித் தமிழ் வரை அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO2: தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களைப் புரிந்து கொண்டு வெளிப்படுத்துவர். [K2]

CO3: இலக்கியங்கள் தோன்றியதன் வரலாறு, கால, சமுதாய, அரசியல் பின்னணியை ஆராய்ந்து வெளிப்படுத்துவர். [K3]

CO4 : இலக்கியங்கள், இலக்கணங்கள் கூறும் அறத்தினைப் புரிந்து கொண்டு எடுத்துரைப்பர். [K4]

CO5: தமிழிலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களைத் தற்காலச் சமூகச் சூழலோடு வளர்ச்சி நிலையோடு ஒப்பிட்டு இனம் காண்பர். [K5]

Course Code 20PTAE22	PO1		PO2		PO3	PO4	PO5	PO6	PSO7	PSO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	L	H	H	M	L
CO2	H	H	H	H	H	H	H	H	H	H
CO3	H	H	H	H	H	-	H	H	-	-
CO4	H	H	H	H	H	H	H	H	H	H
CO5	H	H	H	H	H	-	H	H	-	-

இரண்டாம் பருவம்	தமிழ் மொழி - இலக்கிய வரலாறு சங்ககாலம்	நேரம் :. வாரம் : 6	
விருப்பப் பாடம்		தரமதிப்பு : 4	
பாடக் குறியீட்டு எண் 20PTAE23		அகமதிப்பெண் 40	புறமதிப்பெண் 60

கற்றல் வெளிப்பாடு

இந்த பாடத்திட்டம் முடிந்த பிறகு, மாணவர்கள்

CO1: தமிழ் இலக்கிய வரலாற்றைக் கால முறைப்படி கணினித் தமிழ் வரை அறிந்து கொண்டு எடுத்துரைப்பர். [K2]

CO2: தமிழின், தமிழரின் வாழ்க்கை விழுமியங்களைப் புரிந்து கொண்டு வெளிப்படுத்துவர். [K2]

CO3: இலக்கியங்கள் தோன்றியதன் வரலாறு, கால, சமுதாய, அரசியல் பின்னணியை ஆராய்ந்து வெளிப்படுத்துவர். [K3]

CO4 : இலக்கியங்கள், இலக்கணங்கள் கூறும் அறத்தினைப் புரிந்து கொண்டு எடுத்துரைப்பர். [K4]

CO5: தமிழிலக்கியங்களில் காலந்தோறும் ஏற்படுகின்ற மாற்றங்களைத் தற்காலச் சமூகச் சூழலோடு வளர்ச்சி நிலையோடு ஒப்பிட்டு இனம் காண்பர். [K5]

Course Code 20PTAE23	PO1		PO2		PO3	PO4	PO5	PO6	PSO7	PSO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	L	H	H	M	L
CO2	H	H	H	H	H	H	H	H	H	H
CO3	H	H	H	H	H	-	H	H	-	-
CO4	H	H	H	H	H	H	H	H	H	H
CO5	H	H	H	H	H	-	H	H	-	-

M.A. English

Programme Educational Objectives (PEOs)

The students will be able to

PEO1: To become successful teachers in public and private educational institutions, creative writers, critics, copywriters, content writers and free-lance writers and media personnel.

PEO2: To take up qualifying examinations, competitive examinations, language proficiency tests and carry out research in English literature and language with a life-long passion for learning.

PEO3: To employ their knowledge and skills for the development of a better social, economic and cultural environment in the society.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
chisel the creative and critical faculties through in-depth study of English literary texts	✓	✓	-
instil a fervour for research endeavours	✓	✓	-
strengthen their linguistic competency for employability	✓	✓	-
better living	-	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.A. English Programme, the students will be able to

PO1: Disciplinary Knowledge

- **PSO 1.a:** appraise the works of art written in English across the globe and validate their literariness both in terms of content and style for the pursuit of research activities.

- **PSO 1.b:** employ their literary knowledge, linguistic competence and language proficiency to enhance the opportunities for prospective employment.

PO2: Communication Skills

- **PSO 2.a:** explain the concepts, principles and literary theories imbibed from literature concisely through seminars and academic forums.
- **PSO 2.b:** apply the knowledge of enriched English vocabulary, embellished felicity of expression, and figurative connotations effectively and efficiently in different life situations in written and spoken forms.

PO3: Scientific Reasoning and Problem Solving

- **PSO 3:** relate literature with life-experiences and identify promising ways to free humanity from the clutches of disparities based on class, caste, gender and religion.

PO4: Critical thinking and Analytical Reasoning

- **PSO 4:** integrate the acquired knowledge with social concern and responsibility and contribute their mite for a better standard of living in the society.

PO5: Research related skills

- **PSO 5:** co-relate their research caliber with appropriate methodologies and undertake interdisciplinary research projects oriented towards the betterment of the society.

PO6: Digital Literacy, Self - directed and Lifelong learning

- **PSO 6:** use the required ICT in the process of lifelong learning to overcome the challenges prevailing in job market and adapt themselves to the modern cyber era.

PO7: Cooperation/Team Work and Multicultural Competence

- **PSO 7:** establish their leadership with a right perspective towards life and society and build harmonious interpersonal relations among people of diverse cultures.

PO8: Moral and Ethical awareness

- **PSO 8:** uphold moral values in personal life, follow ethical practices in the work place and create a sustainable society ensuring social justice and economic well being for all.

Semester I	SHAKESPEARE	Hours/Week: 6	
Core Course 1		Credits: 4	
Course Code 20PENC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the themes and the art of plot construction in the plays of Shakespeare against the socio- cultural background of the Elizabethan age . [K2]

CO2: determine the universal moral and ethical values emphasized by Shakespeare in different life situations. [K3]

CO3: examine the characteristic and stylistic features of Shakespeare’s plays and sonnets. [K4]

CO4: relate the assessment of Shakespeare’s characters with the establishment of interpersonal relations in real life. [K4]

CO5: formulate research avenues by synthesizing the analytical interpretations of Shakespeare’s plays. [K5]

Course Code 20PENC11	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	H	H	-	-	M
CO2	H	H	H	M	H	H	H	-	-	H
CO3	H	H	H	H	M	M	H	-	-	M
CO4	M	M	M	M	H	M	M	-	-	H
CO5	H	M	H	H	H	M	H	-	-	L

Semester I	MODERN LITERATURE II	Hours/Week: 6	
Core Course 3		Credits: 4	
Course Code 20PENC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the social, political, and religious development in the Neo-classical age. [K2]

CO2: determine the ethical and moral values depicted in the prescribed works. [K3]

CO3: examine the characteristic features of literary trends and movements in the Augustan age. [K4]

CO4: interpret the elements of rationalism and neo-classicism prevalent in the prescribed works. [K4]

CO5: assess the literary merits of the Seventeenth Century writings and the techniques adapted by the writers. [K5]

Course Code 20PENC13	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	M	M	-	-	M
CO2	H	H	H	M	M	M	M	-	-	H
CO3	H	H	M	M	L	L	M	-	-	L
CO4	H	H	H	M	M	M	H	-	-	L
CO5	H	H	H	M	M	L	M	-	-	M

Semester I	MODERN LITERATURE- III	Hours/Week: 6	
Core Course 4		Credits: 4	
Course Code 20PENC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the aesthetic delineation of nature, glorification of rustic life and moral values prevalent in Romantic Literature. [K2]

CO2: infer the general characteristics and stylistic features of Romantic literature from the works of Romantic writers. [K3]

CO3: relate the social, cultural, and political background of the Romantic age with the works written during the period. [K4]

CO4: analyse the themes and the art of characterization in Romantic Literature. [K4]

CO5: appreciate the revelations of inner life and individual experiences of Romantic writers and their significance in real life situations. [K5]

Course Code 20PENC14	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	M	M	H	-	-	H
CO2	H	H	H	H	M	M	H	-	-	M
CO3	H	H	H	H	M	M	H	-	-	M
CO4	H	H	H	H	M	M	H	-	-	M
CO5	H	H	H	H	H	M	H	-	-	M

Semester I	TRANSLATION	Hours/Week: 6	
Discipline Specific Elective Course 1		Credits: 4	
Course Code 20PENE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the significance of Translation in the modern era. [K2]

CO2: determine various Translation theories. [K3]

CO3: examine various Translation procedures. [K4]

CO4: analyse the problems in translating literary texts. [K4]

CO5: appraise the role of the translator in popularizing classical masterpieces. [K5]

Course Code 20PENE11	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	L	L	M	L	-	L
CO2	H	H	H	M	M	L	H	L	-	M
CO3	M	H	H	M	M	H	M	M	-	M
CO4	H	H	H	M	L	M	L	L	-	L
CO5	M	H	H	M	M	M	H	L	-	M

Semester I	LINGUISTICS	Hours/Week: 6	
Discipline Specific Elective Course 1		Credits: 4	
Course Code 20PENE12		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the fundamental principles of language study. [K2]

CO2: determine the theoretical concepts of linguistics. [K3]

CO3: analyse the major areas of linguistics such as phonology, morphology and syntax. [K4]

CO4: examine the structure and the sound system of the English language. [K4]

CO5: assess the relation between linguistic structures and language function. [K5]

Course Code 20PENE12	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	L	H	M	L	L	L	H	-	-	-
CO2	L	H	M	L	L	L	H	-	-	-
CO3	L	H	M	M	L	L	H	-	-	-
CO4	L	H	L	M	L	L	H	-	-	-
CO5	L	H	L	M	L	L	H	-	-	-

Semester I	MASS MEDIA AND JOURNALISM	Hours/Week: 6	
Discipline Specific Elective Course 1		Credits: 4	
Course Code 20PENE13		Internal 40	External 60

COURSE OUTCOMES

On the completion of the course, the students will be able to

CO1: explain the various theories and principles of journalism. [K2]

CO2: apply the concepts and theories of journalism in writing various products of Mass Media and providing information about issues, events and developments in Society. [K3]

CO3: analyze the concepts on communicative studies and communication skills required to become an efficient communicator via mass media .[K4]

CO4: interpret the theories of Journalism with academic intelligence in the transmission of cultures through mass media. [K4]

CO5: evaluate the distinct role of mass media in educating the people, shaping public relations and communicating to large groups of people in short time frame. [K5]

Course Code 20PENE13	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	L	H	L	H	H	H	L	H	-	H
CO2	L	H	H	H	H	H	L	H	-	H
CO3	L	H	H	H	L	L	L	H	-	M
CO4	L	M	M	M	M	H	L	M	-	H
CO5	L	M	H	H	L	H	M	M	-	H

Semester II	MODERN LITERATURE IV	Hours/Week: 6	
Core Course 5		Credits: 4	
Course Code 20PENC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the characteristic features of Victorian literature highlighting the spirit of inquiry and scepticism prevalent in the era. [K2]

CO2: infer the ethical values depicted through the characters in the prescribed texts. [K3]

CO3: analyse the themes in the works of the representative writers of the Victorian age. [K4]

CO4: relate the literary texts with the socio, political and cultural interest of the Victorian period. [K4]

CO5: assess the art of characterisation, style and techniques adapted by the Victorian writers. [K5]

Course Code 20PENC21	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	H	H	H	-	-	H
CO2	H	L	M	M	M	H	H	-	-	H
CO3	H	M	H	M	H	M	M	-	-	H
CO4	H	L	H	M	H	H	M	-	-	H
CO5	H	H	M	H	H	M	M	-	-	M

Semester II	TWENTIETH CENTURY LITERATURE	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PENC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the concepts and literary trends reflected in twentieth century literature. [K2]

CO2: determine the social and moral values required for harmonious interpersonal relations as reflected in the prescribed works. [K3]

CO3: examine the influence of the social, religious, political, economical and cultural issues of the age on the twentieth century writers. [K4]

CO4: analyze the features of literary movements of the century and their influence on the writers and their works. [K4]

CO5: evaluate the impact of the World Wars on the literary works of the twentieth century. [K5]

Course Code 20PENC22	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	M	M	M	M	M	M	M	-	-	M
CO2	M	M	M	M	H	H	H	-	-	H
CO3	M	M	M	M	H	H	H	-	-	H
CO4	M	M	M	M	M	M	M	-	-	M
CO5	M	M	M	M	H	H	H	-	-	H

Semester II	NEW LITERATURES IN ENGLISH	Hours/Week: 6	
Core Course 7		Credits: 4	
Course Code 20PENC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: discuss the major tenets of Commonwealth literature with reference to the contributions made by the representative writers. [K2]
- CO2: determine the art of characterization and development of plot in the prescribed works. [K3]
- CO3: analyse the social, political and cultural conditions of different countries as revealed in the works of Commonwealth literatures. [K4]
- CO4: examine the themes and narrative techniques in the writings of Post-colonial writers. [K4]
- CO5: assess the impact of the colonisation on the colonised as depicted in the works of Commonwealth writers. [K5]

Course Code 20PENC23	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	M	M	-	-	L
CO2	H	H	H	M	H	M	H	-	-	H
CO3	H	H	H	M	H	M	H	-	-	M
CO4	H	H	H	M	M	M	H	-	-	M
CO5	H	H	H	M	M	M	H	-	-	M

Semester II	AFRO-AMERICAN LITERATURE	Hours/Week: 6	
Core Course 8		Credits: 4	
Course Code 20PENC24		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: identify the social, cultural and economic background of the Afro-American Community. [K2]
- CO2: discuss the aspirations, perspectives and life experiences of the Afro-American society depicted in the prescribed works. [K3]
- CO3: examine with social concern, the racial discrimination, cultural conflicts and psychological trauma encountered by the Afro-American community in the host land. [K4]
- CO4: analyse the themes and the development of plot in the prescribed Afro-American Writings. [K4]
- CO5: assess the art of characterization and stylistic features in Afro-American literatures. [K5]

Course Code 20PENC24	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	H	H	H	-	-	M
CO2	H	H	H	H	H	H	H	-	-	M
CO3	H	H	H	H	H	H	H	-	-	M
CO4	H	H	H	H	H	M	H	-	-	M
CO5	H	H	H	H	H	M	H	-	-	M

Semester II	CLASSICS IN TRANSLATION	Hours/Week: 6	
DSEC-2		Credits: 4	
Course Code 20PENE21		Internal 40	External 60

COURSE OUTCOMES

On the completion of the course, students will be able to

CO1: explain the characteristic features of masterpieces in translation, belonging to various ages in various languages. [K2]

CO2: relate the moral and ethical values depicted in classical masterpieces across the globe. [K3]

CO3: analyse the themes dealt in masterpieces by classical writers belonging to different countries. [K4]

CO4: examine the cultural, social and religious background of literary masterpieces in translation. [K4]

CO5: assess the art of characterization and the use of literary devices in the works of classical writers of various countries. [K5]

Course Code 20PENE21	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	M	H	H	H	-	-	H
CO2	H	H	M	M	H	M	H	-	-	H
CO3	H	H	M	M	H	M	H	-	-	H
CO4	H	H	M	M	M	M	M	-	-	H
CO5	H	H	M	M	H	M	M	-	-	H

Semester II	INDIAN FOLK LITERATURE	Hours/Week: 6	
Discipline Specific Elective Course– 2		Credits: 4	
Course Code 20PENE22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe India's legacy of rich and varied folklore. [K2]

CO2: determine the culture, complex tradition and social beliefs of the common people in India. [K3]

CO3: examine the elemental moorings that are at the root of Indian society. [K4]

CO4: analyse the common motifs and patterns in the folk literature of different regions in India. [K4]

CO5: assess the significance of folk literature as a vital element in depicting the joys and sorrows of the common man and a part of the living culture. [K5]

Course Code 20PENE22	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO	PSO	PSO	PSO	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
	1.a	1.b	2.a	2.b						
CO1	H	M	M	M	H	M	H	-	-	H
CO2	H	M	M	M	H	H	H	-	-	H
CO3	H	L	H	L	H	M	H	-	-	H
CO4	H	H	M	M	H	M	H	-	-	H
CO5	H	M	L	L	H	H	H	-	-	H

Semester II	INDIAN REGIONAL LITERATURES IN ENGLISH	Hours/Week: 6	
Discipline Specific Elective Course - 2		Credits: 4	
Course Code 20PENE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the plot and the settings in Indian Regional Literatures in English. [K2]

CO2: determinethe artistic delineation of life experience, problems and struggles as portrayed by the writers in their respective works. [K3]

CO3: analyse the art of characterization in the prescribed works. [K4]

CO4: interpret the various cultures and traditions reflected in the works of different Indian regional writers. [K4]

CO5: appraise the social ethos and ethics manifested in various genres of Indian regional literatures in English. [K5]

Course Code: 20PENE23	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	M	H	M	H	-	-	H
CO2	H	L	M	M	H	H	H	-	-	M
CO3	H	M	M	M	H	M	H	-	-	M
CO4	H	M	H	M	H	H	H	-	-	H
CO5	H	L	M	M	H	H	H	-	-	H

M.A History

Programme Educational Objectives (PEOs)

The Students will be able to

- To become successful research scholars, civil servants, teachers, journalists, archaeologists, curators, administrators, NGOs, tourist guides and agents.
- To develop necessary skills and values to imbibe the historical facts to meet the conflict situations in the contemporary world.
- To enhance their credentials by striving towards excellence in all spheres of life for the sustainable development of human resources.

Key Components of Mission Statement	PEO1	PEO2	PEO3
Enriching the intellectual acumen of the students with the past and present of India and the world	✓	✓	✓
Empowering the Womenfolk with quality education and digital literacy	✓	✓	✓
Stimulating research attitude, skills and Preparing for range of careers	✓	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On Successful completion of M.A History Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a: apply the in-depth knowledge over the remarkable events in History through the ages in pursuing Research.

PSO 2.b: enhance their skills in acquiring jobs like Teacher, Epigraphist, Curator, Archaeologist, Social Worker, Tourist Guide and Tourist Agent and appearing for competitive examinations.

PO2: *Communication Skills*

PSO 2: uphold their ability to converse the diversity of human experience influenced by ethnicity, cultural tradition, gender and class and interact efficiently in a conflicting World.

PO3: *Scientific Reasoning and Problem Solving*

PSO 3.a: analyse the historical facts that shape individuals and communities, understand and solve the problems and face the challenges in the current scenario.

PSO 3.b: recognise the policies and the reforms of administrators and develop Justice, Peace and Harmony in a pluralistic society for sustainable environment.

PO4: *Critical thinking and Analytical Reasoning*

PSO 4: analyze critically the sources in History and the events of bygone ages to write an authentic History.

PO5: *Digital Literacy, Self - directed and Lifelong learning*

PSO 5: make effective use of ICT tools for their Self-directed and Lifelong learning activities in the fields of their interest in the broadest perspective of High-Tech change in the world.

PO6: *Cooperation/Team Work and Multicultural Competence*

PSO 6: exhibit their cooperation and support in social and civic activities by perceiving the glorious past in establishing an incredible India.

PO7: *Moral and Ethical awareness*

PSO 7: practise the importance of legislations, good governance and civic responsibility and thereby becoming a good citizen and empowered women.

PO 8: *Research Related Skills*

PSO 8: associate their knowledge in Archaeological/Archival/Literary Sources/Modern technologies to pursue research.

Semester I	SOCIO- ECONOMIC HISTORY OF TAMIL NADU (UPTO A.D. 1565)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: summarise the various phases in the evolution of Tamil Society and Economy by reviewing the sources of Tamil Nadu. [K2]
- CO2: identify the conditions and characteristics of Pre- Historic and Historic Society and Economy in Tamil Nadu. [K3]
- CO3: discover the changes on social pattern and growing economic condition of the period under study. [K3]
- CO4: infer the significance of various aspects for the development of the Society and Economy of Tamil Nadu. [K4]
- CO5: criticize the inland and foreign trade and its influence in Tamil Nadu. [K5]

Course Code 20PHIC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	H	-	-	M	M	H	-	M
CO2	H	L	H	-	-	M	M	H	-	M
CO3	M	L	H	-	-	M	L	H	-	L
CO4	H	L	H	-	-	H	L	M	M	L
CO5	H	M	M	-	-	M	M	-	-	-

Semester I	CULTURAL HISTORY OF INDIA (UPTO A.D. 1206)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the unique features of Indian culture through the ages. [K2]

CO2: construct their idea on pre-historic and historic culture. [K3]

CO3: identify the development of Indian Culture and scrutinize the cultural heritage of India. [K3]

CO4: illustrate the moral and religious values of Ancient India. [K4]

CO5: assess the fusion and glimpses of Indian Culture. [K5]

Course Code 20PHIC12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	H	-	-	L	M	M	-	M
CO2	H	M	M	-	-	M	M	H	M	M
CO3	H	M	M	-	-	M	H	M	M	H
CO4	H	H	H	-	-	M	M	H	H	M
CO5	H	M	M	-	-	L	L	H	H	M

Semester I	HISTORY OF WORLD CIVILIZATIONS (Excluding India)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: trace the evolution of civilization and its impact on World. [K2]

CO2: identify the origin and unique features of ancient civilizations. [K3]

CO3: discover the cultural ethics and religious values of ancient people. [K3]

CO4: distinguish the exclusive accomplishments and limitations of early civilizations. [K4]

CO5: assess the legacy of World Civilizations to the World Culture. [K5]

Course Code 20PHIC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	-	-	-	-	-	-	-
CO2	H	M	M	-	-	-	-	-	-	-
CO3	H	M	L	-	-	-	-	-	L	M
CO4	H	M	L	-	-	-	-	-	-	-
CO5	H	M	M	-	-	-	-	-	-	-

Semester I	EPIGRAPHY	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognise the importance of inscriptions in writing History. [K2]

CO2: identify the historical values of Inscriptions through the ages. [K3]

CO3: discover the evolution of inscriptions, scripts and role of Epigraphist in the growth of Indian Epigraphy. [K3]

CO4: analyse the conditions of ancient and medieval state through the study of inscriptions. [K4]

CO5: assess the relationship between the Epigraphy and History. [K5]

Course Code 20PHIC14	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	L	-	-	-	L	H	-	-
CO2	H	M	L	-	-	-	L	H	-	-
CO3	H	M	L	-	-	-	L	H	-	-
CO4	H	M	L	-	-	-	L	H	-	-
CO5	H	M	L	-	-	-	L	H	-	-

Semester I	HUMAN RIGHTS	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PHIE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognize the importance of Human Rights as a citizen of India. [K2]

CO2: identify the origin, concepts, laws and violations of Human Rights. [K3]

CO3: develop their knowledge to face the challenges against Human Rights. [K3]

CO4: illustrate the historical values of Human Rights in Peace building. [K4]

CO5: assess the works of National, International organizations and legal protection to Human Rights. [K5]

Course Code 20PHIE11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	SO8
CO1	H	M	-	-	-	L	M	H	H	H
CO2	H	M	-	-	-	L	M	H	H	H
CO3	H	M	-	-	-	L	M	H	H	H
CO4	H	M	-	-	-	L	M	H	H	H
CO5	H	M	-	-	-	L	M	H	H	H

Semester I	WOMEN STUDIES	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PHIE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: outline the importance of Women Studies. [K2]

CO2: identify the Women Rights and Status in Society. [K3]

CO3: develop their awareness on protection of Women Society. [K3]

CO4: focus their ideas on Women Empowerment and Women Welfare. [K4]

CO5: assess the role of Women in the establishment of gender equality. [K5]

Course Code 20PHIE12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	L	-	-	-	M	H	M	L
CO2	H	M	L	-	-	-	M	H	M	L
CO3	H	M	L	L	-	-	M	H	M	L
CO4	H	M	L	H	-	-	M	H	M	L
CO5	H	M	L	-	M	-	M	H	L	L

Semester I	ENVIRONMENTAL STUDIES	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PHIE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the nature and importance of Environment. [K2]

CO2: identify the challenges to the Environment. [K3]

CO3: construct the values and attitudes towards the conservation of Environment. [K3]

CO4: analyse the strategies for the sustainable development of Environment. [K4]

CO5: assess the significance in the establishment of Green Earth. [K5]

Course Code 20PHIE13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	L	-	-	-	M	H	M	L
CO2	H	M	L	-	-	-	M	H	M	L
CO3	H	M	L	L	-	-	M	H	M	L
CO4	H	M	L	H	-	-	M	H	M	L
CO5	H	M	L	-	M	-	M	H	L	L

Semester II	SOCIO- ECONOMIC HISTORY OF TAMILNADU (A.D.1565-2000)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the Socio- Economic life of Tamils through the ages. [K2]

CO2: determine the Socio-Economic conditions of Tamil Nadu before and after Independence. [K3]

CO3: identify the Social evils and Economic problems in Tamil Nadu and its effects. [K3]

CO4: analyse the Socio-Economic reforms in Tamil Society during the period under study. [K4]

CO5: assess the growth of Society and Economy in Tamil Nadu since 16th century. [K5]

Course Code 20PHIC21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	L	-	-	-	L	H	M	L
CO2	H	M	-	-	-	-	L	H	M	L
CO3	H	M	-	-	-	-	L	H	M	L
CO4	H	M	M	-	-	-	L	H	M	M
CO5	H	M	-	-	-	-	L	H	M	M

Semester II	HISTORY OF FREEDOM MOVEMENT IN INDIA (A.D. 1800 to 1947)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognize the remarkable events of the Indian National Movement. [K2]

CO2: develop their knowledge on India's Struggle for Freedom. [K3]

CO3: identify the prominence of our freedom fighters and their sacrifices. [K3]

CO4: infer the spirit of Nationalism and Patriotism in India. [K4]

CO5: assess the pros and cons in Indian National Movement. [K5]

Course Code 20PHIC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	-	-	-	-	L	-	M	L
CO2	H	M	-	-	-	L	-	L	L	H
CO3	H	M	-	-	-	-	-	L	-	H
CO4	H	M	-	-	-	L	-	-	L	L
CO5	H	M	-	-	-	M	M	-	M	L

Semester II	HISTORY OF UNITED STATES OF AMERICA (A.D. 1865 to 2000)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: trace the economic development of USA from 19th century to 21st century. [K2]

CO2: identify the policies of the Presidents and its impact. [K3]

CO 3: determine the position of USA before and after World War II. [K3]

CO 4: analyze the remarkable events in the History of USA of the period under study. [K4]

CO 5: assess the emergence of USA as a super power. [K5]

Course Code 20PHIC23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	-	-	-	L	M	-	-	-
CO2	H	H	-	-	-	L	M	-	-	-
CO3	H	H	-	-	-	L	M	-	-	-
CO4	H	H	-	-	-	L	M	-	-	-
CO5	H	H	-	-	-	L	M	-	-	-

Semester II	CONSTITUTIONAL HISTORY OF ENGLAND (A.D. 1603-2000)	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PHIC24		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: outline the development of Constitution of England and its unique features. [K2]

CO2: identify the establishment of Constitutional Monarchy in England. [K3]

CO3: construct knowledge over the constitutional significance of events and acts of the period under study. [K3]

CO4: infer the position of Nominal Head and Real Head in the History of England. [K4]

CO5: assess the power and position of parliament and cabinet dictatorship in England. [K5]

Course Code 20PHIC24	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO5	PSO6	PSO7	PSO8
CO1	H	L	-	-	-	H	M	-	H	-
CO2	H	L	-	-	-	M	M	-	H	-
CO3	H	-	-	-	-	H	M	-	H	-
CO4	H	-	-	-	-	M	M	-	M	L
CO5	M	-	-	-	-	L	M	-	M	-

Semester II	TOURISM IN INDIA	Hours/Week: 6	
Discipline Specific Elective Course		Credits :4	
Course Code 20PHIE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: illustrate the importance of Tourism industry in Indian Economy. [K2]

CO2: construct their knowledge on Tourism sites and organization in India. [K3]

CO3: identify the Travel and various kinds of Tourism and its significance. [K3]

CO4: assume the facilities and amenities for the sustainable development of
Tourism. [K4]

CO5: recommend their ideas on Tourist attractions, accommodations and accessibility
in India. [K5]

Course Code 20PHIE21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	-	-	-	M	M	H	M
CO2	H	H	M	-	-	-	M	M	H	M
CO3	H	H	M	-	-	-	M	M	H	M
CO4	H	H	M	-	-	-	M	M	H	M
CO5	H	H	M	-	-	-	M	M	H	M

Semester II	TOURISM AND TRAVEL MANAGEMENT	Hours/Week: 6	
Discipline Specific Elective Course		Credits : 4	
Course Code 20PHIE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognise the importance of Tourism and Travel Management in India. [K2]

CO2: identify the Tourism Development in India. [K3]

CO3: discover the role of Tourism Industry in Indian Economy. [K3]

CO4: analyse the nature and function of Tourism Department in India. [K4]

CO5: assess the National and International Concepts and formalities in Tourism. [K5]

Course Code 20PHIE22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	-	-	-	M	H	H	M
CO2	H	H	M	-	-	-	M	M	H	M
CO3	H	H	M	-	-	-	M	M	H	M
CO4	H	H	M	-	-	-	M	M	H	M
CO5	H	H	H	-	-	-	M	M	H	M

Semester II	PRINCIPLES OF PUBLIC ADMINISTRATION	Hours/Week: 6	
Discipline Specific Elective Course		Credits : 5	
Course Code 20PHIE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: recognise the importance of Public Administration. [K2]

CO2: identify the structure and functions of Public Administration. [K3]

CO3: discover the role of Public Welfare Department in Welfare State. [K3]

CO4: analyse the basic concept and theory of Public Administration. [K4]

CO5: assess the role of people in Public Administration. [K5]

Course Code 20PHIE23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	-	-	-	M	-	-	M
CO2	H	H	M	-	-	-	M	-	-	M
CO3	H	H	M	-	-	-	M	-	-	M
CO4	H	H	M	-	-	-	M	-	-	M
CO5	H	H	H	-	-	-	M	-	-	M

M.SC Mathematics

Programme Educational Objectives (PEOs)

PEOs are broad statements that describe the career and professional achievements that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the Mission of the Institution.

The students will be able to

- become successful teachers in schools and Colleges, Bank officers, government officials, Statisticians and IT professionals.
- apply mathematical skills in analyzing and solving problems in real life situations.
- develop independent thinking for continuous learning and productive research contributions that would help in building a better nation

Key Components of Mission Statement	PEO1	PEO2	PEO3
Profound knowledge in Mathematics	✓	✓	✓
Logical reasoning and analytical Skills	✓	✓	✓
Focus on moral and ethical values	✓	-	✓
Passion for Research	-	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme - specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc Programme, the students will be able to

PO 1: Disciplinary Knowledge

PSO 1.a: Apply the in-depth knowledge of theoretical concepts of mathematics in Research activities.

PSO 1.b: Apply the comprehensive knowledge and skill acquired in advanced mathematical courses to be employed in various sectors of the economy.

PO 2: Communication Skills

PSO 2: Communicate effectively on advanced mathematical concepts, comprehend and write reports and design documents of data to suit the needs of business concerns, institution or organization.

PO 3: Scientific Reasoning and Problem Solving

PSO 3: Apply the knowledge of advanced mathematics to formulate real life problems into mathematical models and find solution to the problems using appropriate mathematical techniques.

PO 4: Critical thinking and analytical reasoning

PSO 4.a: Apply the skill of logical and analytical reasoning in advanced mathematics to reach substantial conclusions in facing career challenges.

PSO 4.b: Employ advanced mathematical methods to various sectors considering the limits in scientific, technological, social, economical and environmental aspects.

PO 5: Research related Skills

PSO 5: Formulate need based mathematical research problems and apply appropriate research methodologies by exploring interdisciplinary research opportunities

PO 6: Digital Literacy, Self-directed Lifelong Learning

PSO 6: Engage in independent and lifelong learning in broad context of technological change.

PO 7: Cooperation/Team Work and Multi-cultural Competence

PSO 7: Demonstrate the knowledge of mathematics with team spirit in diverse environment to bring multicultural richness in mathematics.

PO 8: Moral and Ethical awareness

PSO 8: Apply ethical principles of mathematics and be committed to professional ethics and responsibilities.

Semester I	GROUPS AND RINGS	Hours/Week: 6	
Core Course-1		Credits: 4	
Course Code 20PMTTC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the fundamental concepts of abstract algebra. [K2]

CO2: apply the logical proof to characterize algebraic structures. [K3]

CO3: apply the theory to solve a variety of problems at an appropriate level of difficulty. [K3]

CO4: analyze the characteristics and equivalence criteria of various concepts of algebraic structures. [K4]

CO5: assess the algebraic structures by using advanced ideas in Groups and Rings. [K5]

Course Code 20PMTTC11	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	L	H	H	L	-	H	H	L	-
CO2	H	M	H	L	M	M	H	H	L	-
CO3	H	M	H	L	M	M	H	H	L	-
CO4	H	L	M	H	M	M	M	H	L	-
CO5	H	L	L	M	H	H	M	H	L	-

Semester I	ANALYSIS	Hours/Week: 6	
Core Course-2		Credits: 4	
Course Code 20PMTTC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the fundamental properties of real numbers. [K2]

CO2: identify the properties of metric space, sequences, series, continuity, uniform continuity and differentiation in real line. [K3]

CO3: apply the ratio test, root test and comparison test to determine the convergence of series. [K3]

CO4: analyze the characteristics and equivalence criteria of various concepts in the context of extended real number system. [K4]

CO5: establish various theorems, results and corollaries of real number system. [K5]

Course Code 20PMTTC12	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	H	M	M	M	H	L	-
CO2	H	M	L	-	L	M	M	H	L	-
CO3	H	L	M	L	M	M	H	H	L	-
CO4	H	L	L	M	L	M	H	H	L	-
CO5	H	L	L	H	H	M	H	H	L	-

Semester I	DIFFERENTIAL GEOMETRY	Hours/Week: 6	
Core Course-3		Credits: 4	
Course Code 20PMTTC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the concepts of space curves and their properties. [K2]

CO2: calculate the curvature and torsion of a curve. [K3]

CO3: apply properties of surfaces and geodesics in engineering field. [K3]

CO4: analyze properties of surfaces in different settings and helicoids. [K4]

CO5: assess curvature of curves and fundamental forms for different surfaces. [K5]

Course Code 20PMTTC13	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	L	M	H	L	-	M	M	L	-
CO2	H	M	M	L	M	-	M	H	L	-
CO3	M	-	L	L	M	M	M	L	L	-
CO4	H	L	H	H	M	M	H	M	L	-
CO5	L	L	H	M	H	M	H	M	L	-

Semester I	MATHEMATICAL METHODS	Hours/Week: 6	
Core Course-4		Credits: 4	
Course Code 20PMTTC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the concepts of Integral equations, boundary value problems and Fourier transform. [K2]

CO2: apply different transformation techniques in Integral equations and Fourier transforms. [K3]

CO3: solve various Integral equations by using the suitable method. [K3]

CO4: analyze the various Integral equations and Fourier transforms. [K4]

CO5: evaluate the given integral using Fourier transforms and boundary value problems using suitable method & Green's function. [K5]

Course Code 20PMTTC14	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	H	H	H	H	M	-	M
CO2	H	L	-	H	H	H	H	M	L	M
CO3	H	-	M	H	H	H	H	M	L	M
CO4	H	-	M	H	H	H	H	M	L	M
CO5	H	L	-	H	H	H	H	M	-	M

Semester I	NUMERICAL ANALYSIS	Hours/Week: 6	
DSEC-1		Credits: 4	
Course Code 20PMTE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the basic principles in Numerical Methods. [K2]

CO2: apply numerical techniques to find the solution of the system of linear equations. [K3]

CO3: solve algebraic equations and ordinary differential equations. [K3]

CO4: analyze the rate of convergence of the root of the given equation using different iteration methods, solution of differential equations, numerical integration and the significance of difference operators in interpolation. [K4]

CO5: evaluate the approximate root of the given equation, the definite integral of complicated functions, Eigen values and Eigenvectors approximately. [K5]

Course Code 20PMTE11	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	L	L	-	-	-	-
CO2	H	H	M	H	L	L	-	-	-	-
CO3	H	H	M	H	M	H	M	M	L	-
CO4	H	H	L	H	M	L	M	M	M	-
CO5	H	H	H	H	H	H	M	M	M	-

Semester I	MODERN APPLIED ALGEBRA	Hours/Week: 6	
DSEC-1		Credits: 4	
Course Code 20PMTE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the fundamental concept of binary devices and states. [K2]

CO2: apply the programming structure of ALGOL. [K3]

CO3: apply the knowledge gained in binary group codes to other fields. [K3]

CO4: analyze the procedure for deriving prime implicants, consensus taking,
Flip-flops. [K4]

CO5: evaluate the Boolean expression in minimized form. [K5]

Course Code 20PMTE12	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	L	L	-	L	M	-
CO2	H	H	H	M	M	L	-	L	M	-
CO3	H	H	M	H	M	M	H	L	M	-
CO4	H	H	M	H	M	M	H	L	M	-
CO5	H	H	L	H	H	H	H	L	M	-

Semester I	MECHANICS	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 20PMTE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the elementary principles of mechanics. [K2]

CO2: solve two body central force problems. [K3]

CO3: apply D'Alembert's principle and Lagrange's equations and Kepler's laws. in solving the problems. [K3]

CO4: analyze the Holonomic and non Holonomic systems. [K4]

CO5: evaluate the Hamilton equations of motion. [K5]

Course Code 20PMTE13	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	H	L	L	L	L	H	L	L	-
CO2	H	H	L	M	M	M	H	L	L	-
CO3	H	H	L	M	M	M	H	L	L	-
CO4	H	H	L	M	M	M	H	L	L	-
CO5	H	H	L	M	H	M	H	L	L	-

Semester II	LINEAR ALGEBRA	Hours/Week: 6	
Core Course-5		Credits: 4	
Course Code 20PMTC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain vector spaces and their properties. [K2]

CO2: apply the acquired knowledge in linear algebra in various fields. [K3]

CO3: apply the properties of trace, transpose of matrices and determinants in proving theorems.[K3]

CO4: analyze the characteristics of various transformations, matrices and determinants. [K4]

CO5: establish various theorems and results in linear transformations, matrices and determinants. [K5]

Course Code 20PMTC21	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	M	H	H	H	H	H	M	-
CO2	H	H	H	H	H	H	H	H	M	-
CO3	H	H	M	H	H	H	H	H	H	-
CO4	H	H	H	H	H	H	H	H	H	-
CO5	H	H	M	H	H	H	H	H	M	-

Semester II	REAL ANALYSIS II	Hours/Week: 6	
Core Course-6		Credits: 4	
Course Code 20PMTTC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the concept of the Riemann integrability, sequences and series, some special functions and functions of several variables. [K2]

CO2: apply the integral theory to prove results about specific classes of functions. [K3]

CO3: determine the convergence, uniform convergence of sequence of functions. [K3]

CO4: analyze the characteristics and equivalence criteria of various concepts of real and complex field. [K4]

CO5: evaluate Riemann integration, test the convergence of the sequences and series of functions and prove theorems in functions of several variables. [K5]

Course Code 20PMTTC22	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	-	-	H	M	L
CO2	H	H	M	M	M	-	-	H	M	L
CO3	H	H	M	M	M	-	-	H	M	L
CO4	H	H	M	M	M	-	-	H	M	L
CO5	H	H	-	M	M	-	-	H	M	-

Semester II	DIFFERENTIAL EQUATIONS	Hours/Week: 6	
Core Course-7		Credits: 4	
Course Code 20PMTC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the fundamental concepts of linear and nonlinear differential equations. [K2]

CO2: solve problems of Ordinary Differential Equations and Partial Differential Equations arising in various fields. [K3]

CO3: apply various computational techniques to obtain the solution of Ordinary Differential Equations and Partial Differential Equations. [K3]

CO4: analyze Ordinary Differential Equations & Partial Differential Equations of various types, their solutions and fundamental concepts about their existence and uniqueness. [K4]

CO5: evaluate the first order linear and nonlinear Differential Equations by using various methods. [K5]

Course Code 20PMTC23	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	L	M	L	M	L	-
CO2	H	H	M	M	H	M	H	M	L	-
CO3	H	H	H	H	H	M	H	M	L	-
CO4	H	H	M	H	H	M	H	M	L	-
CO5	H	H	M	M	H	H	H	H	L	-

Semester II	MATHEMATICAL STATISTICS	Hours/Week: 6	
Core Course-8		Credits: 4	
Course Code 20PMTTC24		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the fundamentals and properties of probability, random variable, expectations and distribution functions. [K2]

CO2: solve various problems in special distributions, random variables and multivariate random variables. [K3]

CO3: apply various computational techniques to solve problems in multivariate distributions. [K3]

CO4: analyze the statistical data using appropriate probability distributions, limiting distributions and transformation of variables. [K4]

CO5: evaluate various types of probability density function for both continuous and discrete random variables and the parameters in various distributions. [K5]

Course Code 20PMTTC24	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	L	L	M	L	M	L	-
CO2	H	H	M	M	H	M	H	M	L	-
CO3	H	H	H	H	H	M	H	M	L	-
CO4	H	H	M	H	H	M	H	M	L	-
CO5	H	H	M	M	H	H	H	H	L	-

Semester II	FUZZY ALGEBRA	Hours/Week: 6	
DSEC -2		Credits: 4	
Course Code 20PMTE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the basic concepts of Fuzzy sets, relations, groups, Sylow groups and ideals.[K2]

CO2: apply the acquired knowledge in Fuzzy sets in proving theorems and solving problems.K3]

CO3: illustrate fuzzy relations, binary fuzzy relations, fuzzy equivalence relations, groups, Sylow groups and ideals. [K3]

CO4: analyze the concepts of fuzzy sets, relations groups and ideals in various algebraic structures. [K4]

CO5: assess the algebraic structures by using advanced ideas in Fuzzy algebra. [K5]

Course Code 20PMTE21	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO 4.a	PSO 4.b	PSO5	PSO6	PSO7	PSO8
CO1	H	H	L	M	M	M	L	L	L	-
CO2	H	H	L	L	M	L	L	L	L	-
CO3	H	H	L	L	M	L	L	L	L	-
CO4	H	H	L	M	M	M	L	L	L	-
CO5	H	H	L	M	M	L	L	L	L	-

Semester II	ADVANCED CALCULUS	Hours/Week: 6	
DSEC-2		Credits: 4	
Course Code 20PMTE22		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the basic idea of differentiation of transforms. [K2]

CO2: solve the problems in Differential Geometry and Vector Calculus. [K3]

CO3: apply the theorems of Green, Gauss and Stoke's in solving problems. [K3]

CO4: analyze implicit function theorem. [K4]

CO5: evaluate integrals over curves and surfaces. [K5]

Course Code 20PMTE22	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	L	M	L	M	L	-
CO2	H	H	M	M	H	M	H	M	L	-
CO3	H	H	H	H	H	M	H	M	L	-
CO4	H	H	M	H	H	M	H	M	L	-
CO5	H	H	M	M	H	H	H	H	L	-

Semester II	THEORY OF COMPUTATIONS	Hours/Week: 6	
DSEC-2		Credits: 5	
Course Code 20PMTE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the concepts in automata theory and theory of computation. [K2]

CO2: apply grammars to produce strings from a specific language. [K3]

CO3: determine the decidability and intractability of computational problems. [K3]

CO4: analyze different formal language classes and their relationships. [K4]

CO5: establish theorems in automata theory using its properties. [K5]

Course Code 20PMTE23	PO1		PO2	PO3	PO4		PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	L	L	L	L	H	L	L	-
CO2	H	H	L	M	M	M	H	L	L	-
CO3	H	H	L	M	M	M	H	L	L	-
CO4	H	H	L	M	M	M	H	L	L	-
CO5	H	H	L	M	H	M	H	L	L	-

M.Sc. Physics

Programme Educational Objectives (PEOs)

The students will be able to

- apply obtained knowledge and wisdom in Physics to real life situations.
- think critically and practice recent methodologies for conducting research in the chosen field.
- incur values and skills for professional empowerment and social recognition.

Key Components of Mission Statement	PEO1	PEO2	PEO3
Mastery of the Subject	✓	✓	-
Research Skills	-	✓	✓
Professional Skills	✓	✓	✓
Ethical Values	✓	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc. Physics Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1a: Apply their academic proficiency of concepts, theories, current and emerging development in the field of Physics to meet challenges in interdisciplinary research work, teaching and government/public sector.

PSO 1b: Execute Physics related experiments in a systematic manner, analyse and interpret the results using appropriate methods and report accurately the findings/conclusions of the experiments with relevant theories of Physics.

PO 2: *Communication Skills*

PSO 2: Communicate profoundly their acquired knowledge in the academic field of Physics through oral/written mode where assessment of their knowledge is needed and share their proficiency in diverse fields to assorted audience.

PO 3: *Scientific Reasoning and Problem Solving*

PSO 3: Develop problem solving skills that are required to solve different types of Physics related problems with well-defined solutions and tackle open ended problems that belong to disciplinary area bounded.

PO 4: *Critical Thinking and Analytical Reasoning*

PSO 4: Analyse theories/equations of physical concepts to realize their significance in emerging technical aspects, industrial applications and critically evaluate them to be beneficial for the advancement of society.

PO 5: *Research Related Skills*

PSO 5: Adapt recent developments to execute interdisciplinary research for the environmental safety in global and social context.

PO 6: *Digital Literacy, Self-directed and lifelong learning*

PSO 6a: Use programming/computational techniques to represent, evaluate and analyse physical concepts that helps to progress research effectively.

PSO 6b: Identify, access and manage wide range of online resources for self-directed lifelong learning in their field of interest to compete in the digital environment and have a successful career.

PO 7: *Co-operation/Team Work and Multi-Cultural Competence*

PSO 7: Get acquainted with cultural diversity and work as a proficient member in a globalised team, or as an individual for personal and professional development that leads to the progress of the nation.

PO 8: *Moral and Ethical Awareness*

PSO 8: Respect individuality, appreciate the accomplishment of people in every phase of life adhering to ethical standard and integrity in Physics community around the world to build a prosperous living environment.

Semester I	MATHEMATICAL PHYSICS-I	Hours/Week: 6	
Core Course-1		Credits: 4	
Course Code 20PPHC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : explain vector operators, matrices and special functions like Legendre, Bessel and Hermite polynomials. [K2]
- CO2 : solve problems using vector identities, matrices and linear differential equations using power series method. [K3]
- CO3 : analyze Gauss's and Stoke's theorems in vectors, operations in matrices, Laplace's and Bessel's integrals. [K4]
- CO4 : develop vector operators in orthogonal curvilinear coordinates, systems of linear equations general, generating function and recurrence relations of special functions. [K4]
- CO5 : determine the equation of heat flow in solids, Trigonometric series for $P_n(X)$, Jacobi Series of $J_n(x)$, orthogonality of special functions, eigen values and eigen vectors in matrices.[K5]

Course Code 20PPHC11	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1a	PSO 1b	PSO2	PSO3	PSO4	PSO5	PSO 6a	PSO 6b	PSO7	PSO8
CO1	H	L	H	H	M	M	L	M	-	-
CO2	H	L	H	H	M	M	L	M	-	-
CO3	H	L	H	H	H	H	L	H	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester I	CLASSICAL MECHANICS	Hours/Week: 6	
Core Course-2		Credits: 5	
Course Code 20PPHC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the Lagrangian, Hamiltonian, Canonical Transformation, Hamilton-Jacobi method, and the basic mechanical concepts related to advanced problems involving the dynamic motion of classical mechanical systems. [K2]
- CO2 : illustrate the motion of a mechanical system using Lagrange – Hamilton formulation. [K3]
- CO3 : explain canonical transformation equations, Lagrange & Poisson brackets, Action and angle variable method, the reduction of two- body problem and classification of orbits, Virial theorem, Kepler's law of planetary motion, theory of small oscillations.[K4]
- CO4 : analyze principle of least action, Liouville's theorem, application of Lagrangian equation, Hamiltonian equations of motion and its functions. [K4]
- CO5 : assess the various aspects of dynamics and oscillations of bodies using Lagrange & Poisson brackets, Lagrangian& Hamiltonian equations and Hamilton-Jacobi method. [K5]

Course Code 20PPHC12	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	M	M	M	L	M	-	-
CO2	H	L	H	M	M	M	L	M	-	-
CO3	H	L	H	H	H	M	L	H	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester I	ADVANCED ELECTRONICS	Hours/Week: 6	
Core Course-3		Credits: 5	
Course Code 20PPHC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the basic concepts of different amplifiers, modulation and 8051 microcontroller. [K2]
- CO2 : illustrate various amplifier circuits, modulators and architecture of 8051. [K3]
- CO3 : analyze the operations of feedback amplifiers, operational amplifiers, modulators and the instruction sets of 8051 microcontroller. [K4]
- CO4 : solve simple programs using 8051 microcontroller. [K4]
- CO5 : access amplifier, modulator and op-amp for various applications and explain interfacing of 8051 microcontroller. [K5]

Course Code 20PPHC13	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	L	L	L	M	M	-	-
CO2	H	M	H	L	L	L	M	M	-	-
CO3	H	H	H	H	H	H	H	H	-	-
CO4	H	H	L	H	H	H	H	H	-	-
CO5	H	H	L	H	H	H	H	H	-	-

Semester I	ELECTRONICS & GENERAL PHYSICS LAB – I	Hours/Week: 6	
Core Practical-I		Credits: 3	
Course Code 20PPHC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : Apply the theoretical concepts of Physics and Electronics to formulate the experiment. [K3]
Sketch/write the circuit diagram, tabular column, model graph, C++
- CO2 : program to calculate the required physical parameters. [K3]
Use the technical skills to efficiently handle the instruments, measure the required physical parameters, obtain the result and complete the
- CO3 : records.[K3]
Analyze the accuracy of the obtained result and assess the experimental results. [K4]
- CO4 : Justify the observations of the experiment under different conditions. [K5]
- CO5 :

Course Code 20PPHC11P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	H	M	H	H	M	H	M	L	L
CO2	H	H	L	H	H	H	H	M	L	L
CO3	H	H	L	H	M	H	M	H	L	-
CO4	H	H	L	H	H	H	H	H	L	-
CO5	H	H	L	H	H	H	H	H	L	-

Semester I	NUMERICAL METHODS AND PROGRAMMING IN C++	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 20PPHE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : explain direct, iterative and least square methods, numerical differentiation and integration, operators, control statements and functions in C++. [K2]
- CO2 : apply the concepts in numerical methods to solve problems. [K3]
- CO3 : compute the C++ programs using operators, control statements and functions. [K3]
- CO4 : analyze the principles and practices of numerical methods and C++ programs. [K4]
- CO5 : evaluate the simultaneous equation, least square approximation of functions, numerical differentiation & integration and C++ programs. [K5]

Course Code 20PPHE11	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO	PSO	PSO2	PSO3	PSO4	PSO5	PSO	PSO	PSO7	PSO8
	1.a	1.b					6.a	6.b		
CO1	H	H	H	H	H	M	M	M	-	-
CO2	H	H	H	H	H	M	M	M	-	-
CO3	H	H	H	H	H	H	H	H	-	-
CO4	H	H	L	H	H	H	H	H	-	-
CO5	H	H	L	H	H	H	H	H	-	-

Semester I	MICROPROCESSORS	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 20PPHE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : explain the architecture of 8085, Instruction set and programming techniques. [K2]
- CO2 : discuss about the counters, time delays, stack and stack subroutines. [K3]
- CO3 : develop an assembly language program for arithmetic operations 8 bit and 16 bit data conversion, code conversion, binary conversion, BCD arithmetic operations, interfacing devices ADC, DAC, 8255 PPI, waveform generator. [K3]
- CO4 : summarize the applications of 8085, 8085 interrupts and waveform generation. [K4]
- CO5 : construct assembly language programs. [K5]

Course Code 20PPHE12	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	H	H	L	H	M	H	M	-	-
CO2	H	H	H	L	H	M	H	M	-	-
CO3	H	H	H	H	H	H	H	H	-	-
CO4	H	H	L	H	H	H	H	H	-	-
CO5	H	H	L	H	H	H	H	H	-	-

Semester I	Renewable Energy Sources	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 20PPHE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : describe conventional and renewable energy sources, Solar thermal and Photovoltaic systems, types of energies (wind, biomass, geothermal, ocean) and non – conventional energy technologies. [K2]
- CO2 : explain energy sources, solar thermal and photovoltaic systems, types of energies, hydro resources and non – conventional energy technologies. [K3]
- CO3 : demonstrate new energy technologies, solar thermal and photovoltaic system. [K3]
- CO4 : analyze commercial and renewable energy sources, solar thermal and photovoltaic systems, types of energies, miscellaneous non – conventional energy technologies. [K4]
- CO5 : evaluate energy sources and their availability, new energy technologies, solar photovoltaic systems, types of energies and small hydro resources. [K5]

Course Code 20PPHE13	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	-	M	M	-	M	-	-
CO2	H	L	H	-	M	M	-	M	-	-
CO3	H	L	H	-	H	H	L	H	-	-
CO4	H	L	L	-	H	H	L	H	-	-
CO5	H	L	L	-	H	H	L	H	-	-

Semester II	MATHEMATICAL PHYSICS-II	Hours/Week: 6	
Core Course-4		Credits: 4	
Course Code 20PPHC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : illustrate tensors, complex variables, Fourier series & transform, probability and group. [K2]
- CO2 : solve problems using tensors, complex variables & residues, Fourier series, probability distribution and group theory. [K3]
- CO3 : explain covariant differentiation of vectors, Cauchy Riemann differential equation, Fourier transform of function of two or three variables, probability distribution function and symmetry operation of square & triangle. [K3]
- CO4 : discuss the algebraic operations in tensor, Fourier series & transform of a function, theorems in complex variables & residues, probability distribution and group theory. [K4]
- CO5 : evaluate fundamental & associated tensor, definite integrals using Cauchy's residue theorem, finite Fourier transform, probability distribution function and character table. [K5]

Course Code 20PPHC21	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	H	M	M	L	M	-	-
CO2	H	L	H	H	M	M	L	M	-	-
CO3	H	L	H	H	H	H	L	M	-	-
CO4	H	L	L	H	H	H	L	M	-	-
CO5	H	L	L	H	H	H	L	M	-	-

Semester II	STATISTICAL MECHANICS	Hours/Week: 6	
Core Course-5		Credits: 5	
Course Code 20PPHC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : internalize ideas on thermodynamics, ensembles, classical and quantum statistics. [K2]
- CO2 : explain second and third law of thermodynamics, classical and quantum statistics, various ensemble theories to calculate the thermodynamic functions, Einstein & Debye theory of the specific heat capacity of a solid. [K3]
- CO3 : analyze black body radiation, statistical distribution law, ensembles, F-D, M-B & B-E Statistics, M-B speed distribution and ideal gas in a gravitational field. [K4]
- CO4 : deduce Wien's displacement law, Rayleigh Jeans law, distribution theory for classical and quantum statistics, partition function for ensembles, theory of specific heat of a solid using quantum statistics. [K4]
- CO5 : evaluate thermodynamic potential, thermodynamic probability, partition function, energy and pressure of ideal gas, specific heat capacity of diatomic gas and linear oscillator using quantum statistics. [K5]

Course Code 20PPHC22	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	M	L	M	L	L	-	-
CO2	H	L	H	M	L	M	L	L	-	-
CO3	H	L	H	H	H	H	L	M	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester II	QUANTUM MECHANICS - I	Hours/Week: 6	
Core Course-6		Credits: 5	
Course Code 20PPHC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the inadequacy of classical concepts, Schrodinger equation and stationary states, quantization of angular momentum and general formalism of wave mechanics. [K2]
- CO2 : illustrate the macroscopic statistical phenomena, Schrodinger equation, Dirac delta function, simple harmonic oscillator, perturbation theory for discrete levels. [K3]
- CO3 : explain electromagnetic radiation- wave-particle duality, stationary states and energy spectra, physical interpretation of eigenvalues and eigen functions and expansion coefficients, angular momentum, perturbation theory, parity and variation method in Quantum mechanics. [K4]
- CO4 : summarize the concepts of atomic structure and atomic spectra, square well potential, operators and approximation methods in Stationary states. [K5]
- CO5 : evaluate eigenvalue problems, matter waves, operators and approximation methods in Stationary states. [K5]

Course Code 20PPHC23	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	M	M	M	L	M	-	-
CO2	H	L	H	M	M	M	L	M	-	-
CO3	H	L	H	H	H	H	L	M	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester II	ELECTRONICS & GENERAL PHYSICS LAB – II	Hours/Week: 6	
Core Practical-II		Credits: 3	
Course Code 20PPHC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : apply the theoretical concepts of Physics and Electronics to formulate the experiment. [K3]
- CO2 : sketch the circuit diagram, tabular column, model graph to calculate the required physical parameters [K3]
- CO3 : use the technical skills to efficiently handle the instruments, measure the required physical parameters, obtain the result and complete the records. [K3]
- CO4 : analyze the accuracy of the obtained result and assess the experimental errors. [K4]
- CO5 : justify the observations of the experiment under different conditions. [K5]

Course Code 20PPHC21P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	H	M	H	H	M	H	M	L	L
CO2	H	H	L	H	H	H	H	M	L	L
CO3	H	H	L	H	M	H	M	H	L	L
CO4	H	H	L	H	H	H	H	H	L	L
CO5	H	H	L	H	H	H	H	H	L	L

Semester II	NUCLEAR AND PARTICLE PHYSICS	Hours/Week: 6	
DSEC-2		Credits: 5	
Course Code 20PPHE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : identify nuclei properties ,various nuclear detectors, decay modes, nuclear reactions, binding energy & fundamental particles. [K2]
- CO2 : explain mass energy relation & Q equations, decay modes, deuteron properties and particle interactions. [K3]
- CO3 : analyse nuclear detectors, consequences of decay, nuclear force & energy, and interaction theory. [K4]
- CO4 : summarize centre of mass frame, nuclear spin theory, decay probabilities for spontaneous fission, meson theory, conservation laws in particle interactions. [K5]
- CO5 : Support particle & matter interaction, nuclear models, quantum chromo dynamics and Grand Unification theory. [K5]

Course Code 20PPHE21	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	L	H	M	M	M	L	M	-	-
CO2	H	L	H	M	M	M	L	M	-	-
CO3	H	L	H	H	H	H	L	H	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester II	APPLIED OPTICS AND LASER PHYSICS	Hours/Week: 6	
DSEC-2		Credits: 5	
Course Code 20PPHE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : describe the concepts of Gaussian optics, Fourier optics, non-linear optics, Fourier analysis of imaging systems, and laser production. [K2]
- CO2 : illustrate image formation process, Fourier transforming properties of lenses, frequency response, parametric generation of light, principles and operation of laser. [K3]
- CO3 : infer interference by reflection, imaging by lens, coherent transfer function, self focusing of light and laser operation. [K4]
- CO4 : discriminate Matrix representation in polarization, Fresnel and Fraunhofer diffraction pattern, spatial and temporal coherence, harmonic generations, laser oscillation. [K5]
- CO5 : develop refraction and translation matrices, filtering systems, fourier response of incoherent systems, second and third harmonic generations and theory of various laser types. [K5]

.Course Code 20PPHE22	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO	PSO	PSO2	PSO3	PSO4	PSO5	PSO	PSO	PSO7	PSO8
	1.a	1.b					6.a	6.b		
CO1	H	M	H	M	L	M	L	M	-	-
CO2	H	M	H	M	M	M	L	M	-	-
CO3	H	L	H	H	H	H	L	H	-	-
CO4	H	L	L	H	H	H	L	H	-	-
CO5	H	L	L	H	H	H	L	H	-	-

Semester II	FIBER OPTICS COMMUNICATION	Hours/Week: 6	
DSEC-2		Credits: 5	
Course Code 20PPHE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : explain optical fiber theory, losses and attenuation in fibers, fiber optic communication systems, fiber optic sensors. [K2]
- CO2 : solve problems related to fibre optic communication system. [K3]
- CO3 : distinguish between various CVD processes for fiber fabrication, scattering losses, analog and digital transmitters, link power and rise time budget, laser instrumentation techniques for material processing. [K4]
- CO4 : evaluate light propagation through fibers, scattering and absorption losses, different modulation techniques, repeaters & generators, holographic techniques. [K5]
- CO5 : assess fiber materials, dispersion measurements, preamplifier, optical amplifier and multiplexers, intensity and phase modulated fiber optic sensors. [K5]

Course Code 20PPHE23	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO5	PSO 6.a	PSO 6.b	PSO7	PSO8
CO1	H	M	H	L	L	L	-	M	-	-
CO2	H	L	H	H	M	L	-	M	-	-
CO3	H	L	H	M	M	M	L	H	-	-
CO4	H	L	L	M	H	M	L	H	-	-
CO5	H	L	L	M	H	M	L	H	-	-

M.Sc.Chemistry

Programme Educational Objectives (PEOs)

The students will be able to

- To educate and guide the students in attaining significant opportunities in various service domains at national and international level, and can work as scientist, analyst, quality controller, academics, research organizations and set testing labs.
- To mould the overall personality of the students by providing training and opportunities to enhance their communication skills, team management, co-ordination skills and leadership qualities.
- To guide and create awareness among the students to learn and adopt new skills and techniques to overcome the problem related with new technologies and to formulate, investigate and analyze scientifically real life problems along with ethical attitude which works in multidisciplinary team.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
advanced knowledge and practical experience	√	-	√
development of research activities among students	√	√	√
employable skills for job opportunities	√	√	√
Contributing innovation of new applications of research in chemistry	√	-	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc. Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a : Apply in - depth knowledge on advanced concepts in Organic, Inorganic, Physical, Analytical, Biological, Environmental and Industrial applications of chemistry in research based endeavours.

PSO 1.b : Apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.

PO 2: Communication Skills

PSO 2 : Communicate effectively on scientific achievements, basic concepts and recent developments with experts and with society at large; comprehend and write reports, documents, make effective presentation by oral and/or written form.

PO 3: Scientific Reasoning and Problem Solving

PSO 3.a : Develop analytical, technical and problem solving skills to handle the corrosive, poisonous, explosive and carcinogenic chemicals making themselves employable in any kind of chemical industries. Train about the adverse effects of the abnoxious chemicals and the first aid treatment.

PSO 3.b : Use modern chemical tools, Models, Chemdraw, Charts and Advanced Equipments for the potential uses in analytical industrial chemistry, medicinal chemistry and green chemistry.

PO 4: Critical Thinking and Analytical Reasoning

PSO 4 : Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions to create an awareness of the impact of chemistry on the environment and society.

PO 5: Research Related Skills

PSO 5 : Come out with clear idea of choosing original research problems, writing new projects and publishing research papers to open up new methods for environmental protection, resource management, public health and safety.

PO 6: Digital Literacy, Self - Directed and Lifelong Learning

PSO 6 : Use ICT tools for literature survey of the topic of research, manuscript preparation and online submission for publication. Apply disciplinary or interdisciplinary learning across multiple contexts, integrating knowledge and equip the students to face the employment challenges and instill confidence to turn into entrepreneur.

PO 7: Co-operation/Team Work and Multicultural Competence

PSO 7 : Engage in intellectual exchange of ideas with researchers of other disciplines to address important research issues.

PO 8: Moral and Ethical Awareness

PSO 8 : Explore the impact of the solutions in ethical, societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

Semester I	INTRODUCTION TO ORGANIC REACTIONS	Hours/Week: 6	
Core Course-1		Credits: 4	
Course Code 20PCHC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- CO1: explain electron displacement effects in covalent molecules, energy profile diagram, configuration, aromatic character and basic concepts of UV, IR and mass spectroscopy. [K2]
- CO2: interpret the methods of determination of reaction mechanism, the effect of structure and configuration on reactivity of organic compounds and their spectral values and the chemistry of novel ring systems. [K3]
- CO3: scrutinize the addition compounds, kinetic and thermodynamic requirements for reaction, erythro and threo isomers, aromatic sextet in different ring systems and the pattern of fragmentation in mass spectrum [K4]
- CO4: analyze the significance of Hammett equation, stability of reaction intermediates, relationship between symmetry and chirality of stereoisomers, distinction between alternant and non alternant hydrocarbons and the applications of UV and IR spectroscopy. [K4]
- CO5: categorize the polarization effects, mechanistic information obtained from kinetic and non- kinetic studies, stereoisomers, aromatic and non-aromatic behavior of organic compounds and the results of UV, IR and mass spectrum. [K5]

Course Code 20PCHC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	H	H	H	M	M	H	M
CO 2	H	H	M	M	M	H	M	L	H	M
CO 3	H	H	M	M	M	H	M	L	H	M
CO 4	H	H	M	M	M	H	M	M	H	M
CO 5	H	H	M	H	H	H	M	H	H	M

Semester I	CHEMICAL BONDING, SOLID STATE AND BIOINORGANIC CHEMISTRY	Hours/Week: 6	
Core Course-2		Credits: 5	
Course Code 20PCHC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: understand the concepts of bonding, electronic structure of atoms, solid state, bioinorganic ,photo electron and Mossbauer spectroscopy. [K2]

CO2: illustrate the nature of chemical bonds, bond properties and electrostatic interactions. [K3]

CO3: predict the binding energy, stoichiometric defects of crystals and functions of metal in oxidases. [K3]

CO4: analyse the structure and bonding of molecules, conducting ability of solids, low spin and high spin complexes using Mossbauer Spectroscopy and XPES. [K4]

CO5: evaluate the importance and basic idea about the chemical bonding, solid state and bioinorganic chemistry, PES and Mossbauer Spectroscopy. [K5]

Course Code 20PCHC12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	H	H	H	H	H	H	H
CO 2	H	H	H	H	H	H	M	M	H	H
CO 3	H	H	M	M	H	H	H	M	H	M
CO 4	H	H	M	M	H	H	M	M	M	M
CO 5	H	H	M	H	M	M	H	M	H	M

Semester I	QUANTUM MECHANICS AND THERMODYNAMICS	Hours/Week: 6	
Core Course-3		Credits: 5	
Course Code 20PCHC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: explain the theory and concepts of Quantum mechanics and thermodynamics.

[K2]

CO2: apply the knowledge of quantum mechanics to simple systems and illustrate the concepts of thermodynamics. [K3]

CO3: interpret advance knowledge on chemical thermodynamics and quantum mechanics and employ the chemistry of phase rule. [K3]

CO4: calculate approximation methods in Quantum mechanics and derive thermodynamic relations. [K4]

CO5: assess the relation between the thermodynamic and electrochemical parameters and evaluate the theorems in quantum mechanics. [K5]

Course Code 20PCHC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	M	H	H	H	M	M	L
CO 2	H	H	H	M	H	H	H	M	M	L
CO 3	H	H	H	M	H	H	H	M	M	L
CO 4	H	H	H	M	H	H	H	M	M	L
CO 5	H	H	H	M	H	H	H	M	M	L

Semester I	Organic Qualitative and Quantitative Analyses	Hours/Week: 6	
Core Practical-1		Credits: 3	
Course Code 20PCHC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: Separate the organic mixture by chemical methods. Detect the elements (other than C, H, and O) present in a given organic compound. [K3]

CO2: Identify the functional groups in a given organic compound. Prepare the derivatives for the given organic compound. [K3]

CO3: Estimate the amount of glucose by adopting different procedures and estimate amino acid viz., Glycine. [K3]

CO4: Examine the amount of Ketonic compound and compare the amount present with the standard solution. [K4]

CO5: Categorize the given mixtures by using chromatographic techniques. [K4]

Course Code 20PCHC11P	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	H	M	H	H	M	M	H
CO 2	H	H	H	H	M	H	H	M	M	H
CO 3	H	H	H	H	M	H	H	M	M	H
CO 4	H	H	H	H	M	H	H	M	M	H
CO 5	H	H	H	H	M	H	H	M	M	H

Semester I	MEDICINAL AND PHARMACEUTICAL CHEMISTRY	Hours/Week: 6	
DSEC – 1		Credits: 5	
Course Code 20PCHE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- CO1: understand the basic knowledge on Pharmaceutical chemistry. [K2]
- CO2: predict the structural features, synthesis and therapeutic action of antibiotics, thyroid hormones, antimalarial, antitubercular drugs. [K3]
- CO3: predict the structural features, synthesis and therapeutic action of antitubercular, antineoplastic, anti-inflammatory, antihypertensive and CNS drugs. [K3]
- CO4: interpret basic knowledge on bioinformatics in computer aided drug design
analyse the synthesis and therapeutic action of chemotherapeutic agents. [K4]
- CO5: evaluate the concept of Quantitative Structure Activity Relationship and
Molecular docking. [K5]

Course Code 20PCHE11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	M	L	H	H	M	H	M	M	M
CO 2	H	M	L	H	H	M	H	M	M	M
CO 3	H	M	L	H	H	M	H	M	M	H
CO 4	H	M	L	H	H	M	H	H	M	H
CO 5	H	M	L	H	H	M	H	H	M	H

Semester I	COMPUTERS IN CHEMISTRY	Hours/Week: 6	
DSEC – 1		Credits: 5	
Course Code 20PCHE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: understand the basic concepts of visual basics. [K2]

CO2: write the different language forms. [K3]

CO3: operate internet protocols, email and to apply database in chemistry. [K3]

CO4: infer the application of C language in chemistry. [K4]

CO5: evaluate the basic concepts of communication system. [K5]

Course Code 20PCHE12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO5	PSO 6	PSO 7	PSO 8
CO 1	H	M	L	M	H	M	H	H	H	M
CO 2	H	M	L	M	H	M	H	H	H	M
CO 3	H	M	L	M	H	M	H	H	H	M
CO 4	H	M	L	M	H	M	H	H	H	M
CO 5	H	M	L	M	H	M	H	H	H	M

Semester I	DYE CHEMISTRY	Hours/Week: 6	
DSEC – 1		Credits: 5	
Course Code 20PCHE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: understand the basic concepts of colour and chemical constitution of dyes. [K2]

CO2: demonstrate the mechanism of dyeing. [K3]

CO3: predict the nature and applications of vat, mordant and azo dyes. [K3]

CO4: infer the chemistry involved in the production of dyes. [K4]

CO5: evaluate the theory behind the colour and brightening of dyes. [K5]

Course Code 20PCHE13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	M	L	M	H	M	H	L	L	M
CO 2	H	M	L	M	H	M	H	L	L	M
CO 3	H	M	L	M	H	M	H	L	L	M
CO 4	H	M	L	M	H	M	H	L	L	M
CO 5	H	M	L	M	H	M	H	L	L	M

Semester II	STEREOCHEMISTRY AND REACTION MECHANISM	Hours/Week: 6	
Core Course-4		Credits: 4	
Course Code 20PCHC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- CO1: describe prochirality and prostereoisomerism, the conformations of acyclic and cyclic systems and the basic concepts of substitution, addition and elimination reactions. [K2]
- CO2: predict the nomenclature of prostereoisomers, interpret Cram and Prelog rules, Curtin - Hammett principle, neighbouring group participation of n , π and σ electrons and the stereochemical factors in substitution, addition and elimination reactions. [K3]
- CO3: analyse the enantiotopic and diastereotopic ligands and faces, conformations of cyclohexanones, aldohexopyranoses and decal in and the mechanisms involved in substitution, addition and elimination reactions. [K4]
- CO4: correlate the optical isomerism in molecules with no chiral centers, conformations of acyclic and cyclic systems with their physical and chemical properties, nucleophilicity and basicity, electrophilic, nucleophilic and free radical additions and aromatic electrophilic and nucleophilic substitution reactions. [K4]
- CO5: categorize nucleophilic substitution at various carbon centers, electrophilic, nucleophilic and free radical additions to multiple bonds, α - elimination, β - elimination and pyrolytic elimination reactions and stereospecific and stereoselective reactions [K5]

Course Code 20PCHC21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO 1	H	H	L	H	H	H	H	H	M	M
CO 2	H	M	M	H	H	H	H	H	M	M
CO 3	H	M	M	H	H	H	H	H	M	M
CO 4	H	H	M	H	H	H	H	H	M	M
CO 5	H	H	M	H	H	H	H	H	M	M

Semester II	GROUP THEORY, STATISTICAL THERMODYNAMICS AND MACROMOLECULAR CHEMISTRY	Hours/Week: 6	
Core Course-6		Credits: 5	
Course Code 20PCHC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

- CO1: discuss the basic concepts of Group theory, statistical and non equilibrium thermodynamics. [K2]
- CO2: predict ensemble averaging , thermodynamic properties of partition functions, heat capacity behavior of solids, entropy production and types and properties of polymers. [K3]
- CO3: apply the concepts of Group theory to spectroscopy and predict Huckel molecular orbital theory. [K3]
- CO4: calculate kinetics and mechanism for synthesis of macromolecules and develop procedure for molecular weight determination of macromolecules, construct the character Tables using Great Orthogonality theorem and identify relation of irreversible thermodynamics with biological systems. [K4]
- CO5: develop applications of HMO theory, Onsager's reciprocal theory, partition functions and new polymers in material science. [K5]

Course Code 20PCHC23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO 1	H	M	M	H	H	H	H	M	H	L
CO 2	H	M	H	H	H	H	H	M	H	L
CO 3	H	M	H	H	H	H	H	H	H	L
CO 4	H	M	H	H	H	H	H	H	H	L
CO 5	H	M	H	H	H	H	H	H	H	L

Semester II	Inorganic Qualitative Analysis and Complexometric Titrations with EDTA	Hours/Week: 6	
Core Practical-2		Credits: 3	
Course Code 20PCHC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students shall be able to

CO1: apply systematic procedure and find out the familiar cations present in the given mixture of salts. [K3]

CO2: apply systematic procedure and find out the less familiar cations present in the given salt mixture. [K3]

CO3: calculate the amount of Nickel ions present in the given solution by direct and indirect EDTA volumetric methods. [K3]

CO4: examine the amount of metal ions such as like Zinc, Magnesium and Copper present in the given solution by EDTA volumetric method and compare the result with the standard solution. [K4]

CO5: develop the laboratory skill to deduct any unknown metal ions both by quantitative and qualitative analysis. [K5]

Course Code 20PCHC21P	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	M	M	H	H	H	H	M	H	M
CO 2	H	M	H	H	H	H	H	M	H	M
CO 3	H	M	H	H	H	H	H	M	H	M
CO 4	H	M	H	H	H	H	H	M	H	M
CO 5	H	M	H	H	H	H	H	M	H	M

Semester II	ANALYTICAL CHEMISTRY	Hours/Week: 6	
Discipline Specific Elective Course-2		Credits: 5	
Course Code 20PCHE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: understand the properties of precipitates, error analysis, types of electrodes, thermoanalytical and spectroanalytical methods. [K2]
- CO2: illustrate the methods of precipitation, statistical treatment of data, theory of electro analytical methods, principles of TGA, DSC, DTA, nephelometry, turbidimetry and flame spectrometry. [K3]
- CO3: interpret the calibration of instruments, different types of precipitations, reliability of results, and instrumentation of electroanalytical techniques, thermoanalytical methods, colorimetric and spectrophotometric analysis of elements. [K3]
- CO4: analyze the co-precipitation, post-precipitation, gravimetric analysis, error and statistical data, means of the two samples, determination of ions by electroanalytical methods, thermal behavior of various compounds and determination of metals by spectroanalytical methods. [K4]
- CO5: summarize the steps involved in gravimetric analysis, calibration of instruments, classification of errors, comparison of results, comparison of means of two samples and principle, instrumentation, applications of electroanalytical, thermoanalytical methods, and spectroanalytical methods for project. [K5]

Course Code 20PCHE21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	L	H	H	H	H	M	M	L
CO 2	H	H	L	H	H	H	H	M	M	L
CO 3	H	H	L	H	H	H	H	M	M	L
CO 4	H	H	L	H	H	H	H	M	M	L
CO 5	H	H	L	H	H	H	H	M	M	L

Semester II	POLYMER CHEMISTRY	Hours/Week: 6	
Discipline Specific		Credits: 5	
Elective Course-2		Internal	External
Course Code 20PCHE22		40	60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the classification of polymers. [K2]

CO2: discuss the kinetics of polymerization techniques. [K2]

CO3: illustrate the preparation of individual polymers. [K3]

CO4: outline the properties of polymers and various techniques for processing polymers. [K4]

CO5: evaluate the polymerization techniques, degradation and uses of polymers. [K5]

Course Code 20PCHE22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	L	H	H	H	H	M	M	M
CO 2	H	H	L	H	H	H	H	M	M	M
CO 3	H	H	L	H	H	H	H	M	M	M
CO 4	H	H	L	H	H	H	H	M	M	M
CO 5	H	H	L	H	H	H	H	M	M	M

Semester II	INDUSTRIAL CHEMISTRY	Hours/Week: 6	
Discipline Specific Elective Course-2		Credits: 5	
Course Code 20PCHE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the chemical concepts involved in dairy, leather and polymer products ; chemistry involved in paint, pigments, energy resources and biofuels.

[K2]

CO2: acquire knowledge about the manufacturing processes of industrial products.

[K2]

CO3: analyse purity of industrial products. [K3]

CO4: apply the concept to harvest more energy from the natural resources and produce quality products. [K4]

CO5: prepare the novel industrial products. [K5]

Course Code 20PCHE23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	L	H	H	H	H	M	M	M
CO 2	H	H	L	H	H	H	H	M	M	M
CO 3	H	H	L	H	H	H	H	M	M	M
CO 4	H	H	L	H	H	H	H	M	M	M
CO 5	H	H	L	H	H	H	H	M	M	M

M.Sc. Zoology

Programme Educational Objectives (PEOs)

The students will be able to

- To prioritize the competence in Life sciences and scientific research in order to constitute the principal knowledge of their degree.
- To appraise knowledge and make successful career in all the aspects of Zoology.
- To perceive the impact of scientific solutions in global, environmental and societal context.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
To impart quality education to meet out the needs of rural women folk.	✓	✓	✓
To mould the students to be responsible and successful citizens.	-	✓	✓
To motivate them to apply the academic skill for the improvement of society.	-	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of the M.Sc Programme, the students will be able to

PO1. Disciplinary Knowledge

PSO1.a: Illustrate the comprehensive knowledge and understanding major concepts, theoretical principles and experimental findings in Zoology and its subfields to pursue research.

PSO1.b: Extend the use of modern instrumentation techniques to enhance practical skills in various fields of Zoology.

PO2. Communication Skills

PSO2: Communicate technical knowledge in specific area of study by apply their writing and oral communicative skills to present a technical core content in a concise manner to academicians.

PO3: Scientific Reasoning and Problem Solving

PSO3.a: Utilize contextual knowledge by adopting ecological, biostatistical, bioinformatic and biotechnological tools of research for uplifting the society.

PSO3.b: Identify, analyze and secure experimental processes to trigger solutions by interpreting data in various fields of Biology.

PO4. Critical thinking and Analytical Reasoning

PSO4: Predict various day to day problems (such as understanding environmental issues, conservation processes, pollution control, biodiversity and protection of endangered species) faced by the society, identify the causes and come out with appropriate solutions.

PO5. Research related skills

PSO5: Improve the use of technical skills in the field of life science research to meet out the emerging needs for the welfare of the society.

PO6. Digital Literacy, Self - directed and Lifelong learning

PSO6: Make use of ICT and Construct various application oriented twigs of Zoology to become an entrepreneur by fulfilling the economic needs of their life.

PO7. Cooperation/Teamwork and Multi-Cultural Competence

PSO7: Adapt to work in groups efficiently in diverse areas like research laboratories, industries and academic based institutions.

PO8. Moral and Ethical awareness

PSO8: Compile and follow the ethical strategies of environmental management and conservation for sustainable life on earth.

Semester I	CELL BIOLOGY	Hours/Week: 6	
Core course-1		Credits: 4	
Course Code 20PZYC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the structures and functions of basic components of cells. [K2].

CO2: apply the knowledge to know working mechanisms at cellular level. [K3].

CO3: identify the different kinds of cellular organelles that make up organisms related to Cell function. [K3].

CO4: analyze the characteristics and behaviour of a cell to know the changes occurring in it. [K4].

CO5: assess the merits of cellular events in vital processes and mechanisms behind pathways. [K5].

Course Code 20PZYC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	-	H	L	L	-	H	H	L	M
CO2	M	L	H	M	M	-	M	-	L	M
CO3	H	L	H	M	M	-	-	M	L	L
CO4	H	-	H	H	H	-	H	L	M	-
CO5	H	-	H	H	H	M	M	H	-	-

Semester I	BIOCHEMISTRY AND BIOPHYSICS	Hours/Week: 6	
Core course-2		Credits: 4	
Course Code 20PZYC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the biological significance of biomolecules in living things. [K2]

CO2: apply knowledge on working mechanisms of biomolecules, enzymes and hormones.
[K3]

CO3: apply the knowledge on biochemical components of several biomolecules which in turn helps to find novel drugs. [K3]

CO4: compare the merits of various biological pathways and their applications
in macromolecules. [K4]

CO5: assess the significance of the cellular metabolic pathways in our body. [K5]

Course Code 20PZYC12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	-	H	H	L	M	M
CO 2	H	H	H	M	M	M	L	H	L	M
CO 3	H	H	M	M	H	H	H	M	L	L
CO 4	H	H	M	H	M	H	M	M	M	L
CO 5	H	H	M	H	H	H	M	H	-	L

Semester I	DEVELOPMENTAL BIOLOGY	Hours/Week: 6	
Core course-3		Credits: 4	
Course Code 20PZYC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the key concepts in Developmental Biology. [K2].

CO2: apply knowledge on the essential features in Embryology. [K3].

CO3: make use of the concepts on basic cellular events and processes during embryonic development. [K3].

CO4: analyse the importance of embryological processes during pre and post embryonic development. [K4].

CO5: evaluate all aspects that occur during development of an organism. [K5].

Course Code 20PZYC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	L	-	L	L	L	M	L
CO 2	H	M	H	M	M	M	H	-	M	L
CO 3	H	M	H	M	H	M	M	L	M	L
CO 4	H	-	H	H	M	M	M	-	M	H
CO 5	H	H	H	H	H	H	M	H	M	H

Semester: I	LAB IN CELL BIOLOGY, BIOCHEMISTRY, BIOPHYSICS AND DEVELOPMENTAL BIOLOGY	Hours/Week: 6	
Core Practical-1		Credits: 3	
Course Code 20PZYC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the theoretical concepts in biological, biochemical, biophysical and developmental aspects. [K3]

CO2: write the procedure/ flow charts/description/diagrams/tabular column/ graph/ formulae/map to explain the required parameters. [K3]

CO3: analyze the given parameters with observation/ calculations/ results/Inference and comments on the spotter. [K3]

CO4: examine the obtained results with proper illustrations and completion of record work. [K4]

CO5: justify and validate the concepts learnt in Cell Biology/ Biochemistry/ Biophysics and Developmental biology. [K5]

Course Code 20PZYC11P	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	H	H	M	H	H	H	-
CO 2	H	H	H	H	H	M	M	H	H	-
CO 3	H	H	H	H	H	H	H	H	H	L
CO 4	H	H	H	H	H	H	H	H	H	-
CO 5	H	M	H	H	H	H	M	H	H	-

Semester I	FISH CULTURE	Hours/Week: 6	
DSEC-1		Credits: 4	
Course Code 20PZYE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the culture techniques and scope of fish farming. [K2]

CO2: apply the knowledge on fish culture to promote self employment. [K3]

CO3: make use of skills to maintain a successful fish culture unit. [K3]

CO4: analyze the fish culture practices for good productivity. [K4]

CO5: recommend the sustainable management of fish farms to promote
Entrepreneurship. [K5]

Course Code 20PZYE11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	L	L	H	M	H	M	H
CO 2	H	-	H	M	-	H	M	H	M	L
CO 3	H	-	H	M	-	L	H	H	M	-
CO 4	H	-	H	H	-	L	M H	-	M	M
CO 5	H	-	H	H	L	L	M	H	M	M

Semester I	VERMITECHNOLOGY	Hours/Week: 6	
DSEC-1		Credits: 4	
Course Code 20PZYE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts of vermiculture along with its importance. [K2]

CO2: make use of the ideas about cultivable species to set up a culture Unit. [K3]

CO3: apply the knowledge on vermicomposting to develop their practical skills
which promotes self-employment opportunities. [K3]

CO4: analyse the role of Vermiculture in organic farming for better agricultural
practices in an eco-friendly manner. [K4]

CO5: recommend the better management practices by evaluating the profit outputs.
[K5]

Course Code 20PZYE12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	L	-	H	M	H	M	M
CO 2	H	-	H	M	-	M	M	H	M	M
CO 3	H	M	H	M	-	H	-	H	-	L
CO 4	H	-	H	H	-	H	-	H	M	-
CO5	H	L	H	H	-	L	M	H	-	L

Semester I	APPLIED BIOTECHNOLOGY	Hours/Week: 6	
DSEC-1		Credits: 4	
Course Code 20PZYE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the concepts of Biotechnology in various fields of biology. [K2]

CO2: make use of biotechnological techniques to improve the health of mankind and the quality of the environment.[K3]

CO3: apply the skills for the sustainable maintenance of the environment. [K3]

CO4: analyze the advantages of various novel applications in the field of Biotechnology. [K4]

CO5:assess the merits of conventional and recent techniques. [K5]

Course Code 20PZYE13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	L	H	L	-	H	H	L	-	M
CO 2	H	-	H	M	-	H	H	-	-	L
CO 3	H	H	H	M	-	H	M	-	L	H
CO 4	H	L	H	H	-	H	H	H	L	-
CO5	H	M	H	H	-	H	H	H	L	H

Semester II	ANIMAL PHYSIOLOGY	Hours/Week: 6	
Core Course-4		Credits: 4	
Course Code 20PZYC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the basic fundamental concepts of Physiology. [K2]

CO2: make use of knowledge on the anatomical and physiological functions of various Organisms. (K3]

CO3: apply the ideas to know the key features of physiology and its systematic regulations. [K3]

CO4: Analyse the regulatory mechanisms behind the normal functioning of body. [K4]

CO5: assess the efficacy of organs and various systems to lead a healthy life. [K5]

Course Code 20PZYC21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	L	H	L	H	M	M	H	M	M
CO2	H	L	H	M	M	M	M	M	M	M
CO3	H	L	H	M	M	L	-	L	L	L
CO4	H	-	H	H	H	M	-	-	M	-
CO5	H	L	H	H	M	L	M	H	M	L

Semester II	IMMUNOLOGY	Hours/Week: 6	
Core Course-5		Credits: 4	
Course Code 20PZYC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the fundamental concepts of immunology. [K2]

CO2: make use of the knowledge on the various immunological reactions in our body.
[K3]

CO3: apply the knowledge on important mechanisms and recent concepts in the field of
Immunology. K3]

CO4: compare the cells, molecules and diseases related to immunology. [K4]

CO5: assess the merits of immunological response and immunological techniques. [K5]

Course Code 20PZYC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	L	H	L	H	L	L	-	M	-
CO 2	H	L	H	M	M	-	-	L	M	-
CO 3	H	H	H	M	H	-	L	M	L	L
CO 4	H	M	H	H	M	L	L	L	M	H
CO 5	H	H	H	H	M	-	L	H	L	L

Semester II	ENTOMOLOGY	Hours/Week: 6	
Core Course-6		Credits: 4	
Course Code 20PZYC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the classification and Biology of insects. [K2]

CO2: apply theoretical knowledge to know the key features and significance of insect Bionomic. [K3]

CO3: make use of the impact of insects in an ecosystem to lead a healthy lifestyle. [K3]

CO4: compare the role of various species of insects in agriculture, human health and environment. K4]

CO5: analyze the physiology of insects and its role in various fields of Biology. [K5]

Course Code 20PZYC23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	H	H	H	H	M	H	M
CO 2	H	-	H	H	H	H	H	L	H	H
CO 3	H	-	H	H	L	M	H	H	H	H
CO 4	H	-	H	H	H	H	H	M	H	H
CO 5	H	-	H	M	H	H	H	H	H	H

Semester II	LAB IN ANIMAL PHYSIOLOGY, IMMUNOLOGY AND APPLIED ENTOMOLOGY	Hours/Week: 6	
Core Practical-2		Credits: 3	
Course Code 20PZYC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: apply the theoretical knowledge in the field of Animal Physiology, Immunology and Applied Entomology. [K3]

CO2: write the procedure/flow charts/description/diagrams/tabular column/graph/formulae/map to explain the required parameters. [K3]

CO3: analyze the given parameters with observation/ calculations/ results/Inference and comments on the spotter. [K3]

CO4: examine the obtained results with proper illustrations and completion of record work. [K4]

CO5: justify and evaluate the concepts learnt in Animal physiology, Immunology and Applied Entomology. [K5]

Course Code 20PZYC21P	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO 6	PSO 7	PSO 8
CO1	H	H	H	H	H	H	H	H	H	-
CO 2	H	H	H	H	H	M	M	H	H	-
CO 3	H	H	H	H	H	H	M	H	H	L
CO 4	H	H	H	H	H	H	H	H	H	-
CO 5	H	H	H	H	H	H	M	H	H	-

Semester II	ENVIRONMENTAL BIOTECHNOLOGY	Hours/Week: 6	
DSEC-2		Credits: 4	
Course Code 20PZYE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the basic concepts of ecosystem and Environmental pollution. [K2] CO2: apply the knowledge to control Environmental pollution. [K3]

CO3: apply the skills for maintaining a healthy Environment.[K3]

CO4: analyze biotechnological processes and methods to protect environmental quality [K4]

CO5: assess all the biotechnological aspects for making a sustainable pollution free environment [K5]

Course Code 20PZYE21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	L	M	H	M	H	M	H
CO2	H	M	H	M	M	H	H	-	M	H
CO3	H	H	H	M	M	H	H	M	M	H
CO4	H	M	H	H	H	H	M	M	M	H
CO5	H	M	H	H	H	H	H	H	M	H

Semester II	POULTRY FARMING	Hours/Week: 6	
DSEC-2		Credits: 4	
Course Code 20PZYE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the basic concepts and scope of the Poultry industry. [K2]

CO2: apply the theoretical knowledge construct a poultry house and plan for self employment opportunity.[K3]

CO3: apply the skills to set up a poultry unit among rural folk to uplift their economic status as entrepreneurs. [K3]

CO4: compare the conventional and recent methods in poultry management. [K4]

CO5: recommend the effective farming practices to obtain more profit. [K5]

Course Code 20PZYE22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	M	H	L	H	L	L	H	M	M
CO 2	H	H	H	M	M	L	H	H	M	M
CO 3	H	M	H	M	M	H	H	H	M	L
CO 4	H	H	H	H	H	M	H	H	M	M
CO5	H	H	H	H	M	H	M	H	M	L

Semester II	MS OFFICE	Hours/Week: 6	
DSEC-2		Credits: 4	
Course Code 20PZYE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the essential concepts of MS office and its applications. [K2]

CO2: make use of the MS Office program to create academic documents. [K3] CO3: apply practical skills to promote self employability. [K3]

CO4: examine new innovative methods of learning and teaching. [K4]

CO5: choose the suitable tools to create presentations for academic proposals. [K5]

Course Code 20PZYE23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	H	-	H	L	L	L	H	H	M	L
CO2	H	L	H	M	M	M	H	H	M	L
CO3	H	H	H	M	M	M	H	H	M	L
CO4	H	M	H	H	M	L	H	H	M	-
CO5	H	-	H	H	L	L	M	H	M	-

M.Sc. Biochemistry

Programme Educational Objectives (PEOs)

The students will be able to

- provide in-depth knowledge in the core areas of life sciences for industries, clinical, research , pharmaceutical labs, and academia.
- instill the ability of entrepreneurship in research and diagnostics
- equip skillful attitude promoting lifelong learning to meet the ever evolving professional demands by developing ethical , interpersonal and team skills

Key Components of Mission Statement	PEO1	PEO2	PEO3
Employability in research, academia and pharmaceutical fields	✓	✓	✓
Motivation for research and entrepreneurship	✓	✓	✓
Committed to improving the scientific world today	✓	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc. Biochemistry Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a : Apply the knowledge of theoretical and experimental approaches in Biochemistry in research oriented Endeavour to unravel problems in health care with a scientific basis of life process and will have an ability to provide solution to new problems.

PSO 1.b : Recognize the importance of bioethics, entrepreneurship and career oriented skills, thus providing a strong foundation for both academic / industrial placements across the country and globe as well as setting up entrepreneurial ventures.

PO 2: *Communication Skills*

PSO 2 : Communicate the knowledge of Biochemistry to address environmental, intellectual, societal and ethical issues through case studies with effective communication.

PO3: *Scientific Reasoning and Problem Solving*

PSO 3.a: Enrich their analytical and problem solving skills with regard to biochemical principles of life processes and technologies for combating human diseases.

PSO 3.b: build up the capacity of decision making with regard to scientific progress, personal development and career choice.

PO 4: *Critical Thinking and Analytical Reasoning*

PSO 4: Apply the knowledge of experimental approaches on designing experiments, analysis, interpretation of data and synthesis of information to provide valid conclusions

PO 5: *Research Related Skills*

PSO 5: An ability to properly understand the technical aspects with research aptitude of existing technologies that help in addressing the biological and medical challenges faced by humankind by adhering the code of conduct of Biochemistry

PO 6: *Digital Literacy, Self - Directed and Lifelong Learning*

PSO 6 : Analyze and interpret the data using state-of the-art techniques with ICT and modern tools in planning and executing projects in Biochemistry.

PO 7: *Co-operation/Team Work and Multicultural Competence*

PSO 7: Develop leadership qualities, team spirit and good interpersonal skills to work effectively in diverse fields individually or as a team

PO 8: *Moral and Ethical Awareness*

PSO 8 : Follow the global standards of codes of conduct in Life science community and practice the imbibed moral values in their profession and society to maintain sustainable environment.

Semester I	CHEMISTRY OF BIOPOLYMERS	Hours/Week: 6	
Core Course-1		Credits: 5	
Course Code 20PBCC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the composition, classification of biomolecules and its essential role in the biological system. [K2]

CO2: sketch the structure of biomolecules and its properties. [K3]

CO3: identify the mechanism of action of biomolecules along with their structural relationship. [K3]

CO4: evaluate the methods involved in the isolation and purification of macromolecules. [K4]

CO5: compile the structural difference in biomolecules and techniques involved in biomolecules structure identification. [K5]

Course Code 20PBCC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	H	M	H	H	M	-	-
CO 2	H	H	M	M	L	H	M	H	-	-
CO 3	H	H	H	M	L	H	H	M	L	H
CO 4	H	H	M	H	M	H	M	M	H	L
CO 5	H	H	M	H	M	H	M	M	H	H

Semester I	PRINCIPLES OF BIOCHEMICAL AND BIOPHYSICAL TECHNIQUES	Hours/Week: 6	
Core Course-2		Credits: 5	
Course Code 20PBCC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the Biophysical, Biochemical and Molecular Biology techniques. [K2]

CO2: apply the separation procedures such as Centrifugation, Chromatography and Electrophoretic techniques in biological investigations. [K3]

CO3: determine the Biochemical and Biophysical characterization of macromolecules and their complexes for structural biology experiments. [K3]

CO4 : analyze the practical and data handling skills required to undertake the Bio Technical research. [K4]

CO5: evaluate the principles and techniques of Biochemistry that motivates the students for higher education, acquiring skills in separation techniques to identify different biomolecules, undertaking research, and for becoming health professionals. [K5]

Course Code 20PBCC12	PO1		PO2	PO3		PO4	PO 5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	L	M	M	M	-	M	M	-
CO 2	H	H	H	H	H	H	-	M	M	-
CO 3	H	H	H	H	H	H	M	M	M	-
CO 4	H	H	M	H	H	H	M	M	M	M
CO 5	H	H	H	M	H	H	M	M	M	M

Semester I	BIOCHEMICAL AND ENVIRONMENTAL TOXICOLOGY	Hours/Week: 6	
Core Course-3		Credits: 5	
Course Code 20PBCC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the terms and basic principles of toxicology, mechanism of toxic effects of toxicants and factors affecting disposition of toxicants. [K2]

CO2: identify health conditions linked to selected toxic exposures from food, lifestyle, environment, workplace and home. [K3]

CO3: apply pharmacokinetic and pharmacodynamic principles that impact administration, ADME, efficacy, potency, effectiveness and biological activity of drugs and toxins. [K3]

CO4: analyze the types of toxicology, toxicants, metals and its disposition, responses in target organ, non-organ directed toxicity. [K4]

CO5: assess the techniques and methods of toxicity and fate of toxicants in humans. [K5]

Course Code 20PBCC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	M	H	M	M	H	M	L	-	-
CO 2	H	H	H	H	M	H	H	L	M	H
CO 3	H	H	M	H	M	H	H	M	M	H
CO 4	H	H	H	H	M	H	H	M	M	H
CO 5	H	H	H	H	M	H	H	m	H	H

Semester I	ENZYMES AND ENZYME TECHNOLOGY	Hours/Week: 6	
DSEC-1		Credits: 5	
Course Code 20PBCE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the structure, functions, mechanism of action of enzymes, kinetics of enzyme catalyzed reactions, enzyme inhibitions, regulatory process and their application in commercial production. [K2]

CO2: apply their knowledge in the commercial synthesis of novel products using the enzyme kinetics in living systems. [K3]

CO3: compare and contrast the uses of enzyme technology with current applications in a diverse range of industries. [K3]

CO4: evaluate the function of cofactors in enzyme catalyzed reactions, immobilization of enzymes, exposure of wide applications of enzymes and future potential. [K4]

CO5: detect the immobilization of enzymes, commercial enzyme production and the presence of aminoacids in the active sites. [K5]

Course Code 20PBCE12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	M	M	H	M	-	-	-
CO 2	H	H	M	M	M	M	M	-	-	M
CO 3	H	M	M	M	M	M	M	-	-	-
CO 4	H	H	M	M	M	H	H	-	-	M
CO 5	H	H	M	M	M	M	H	-	-	M

Semester II	MICROBIAL BIOCHEMISTRY AND FERMENTATION TECHNOLOGY	Hours/Week: 5	
Core Course-5		Credits: 4	
Course Code 20PBCC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand how microbes are relevant in technological developments for industries related to food and fermentation and their various, metabolic energy yielding pathways. [K2]

CO2: develop knowledge about microbial metabolism, growth, energy generation, various fermentation pathways, energetic its role in science and industry today. [K3]

CO3: apply the knowledge of microbial biochemistry and fermentation technology including areas such as energy metabolism, microbial biosynthesis and industrial production, purification of compounds and their application to research, development and societal needs. [K3]

CO4: analyze different fermentation techniques, bioreactor design, inoculum development for industrial fermentation, the use of microorganisms for the value-added products through fermentation processes, the production of secondary metabolites. [K4]

CO5: assess fermentation technology and requirements; production of commercially important microbial products and various metabolic activities in microorganisms. [K5]

Course Code 20PBCC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	M	H	H	M	M	-	-
CO 2	H	H	M	M	H	H	M	H	-	-
CO 3	H	H	H	H	H	H	H	H	M	H
CO 4	H	H	H	H	H	H	M	H	M	H
CO 5	H	H	M	H	H	H	M	H	M	H

Semester II	MOLECULAR BIOLOGY AND GENETIC ENGINEERING	Hours/Week: 5	
Core Course- 6		Credits: 4	
Course Code 20PBCC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: understand the principles and techniques leads to comprehensive analysis and practices in Molecular Biotechnology. [K2]
- CO2: apply the synthetic information from a wide variety of sources to understand the key principles of molecular biology and Genetic Engineering. [K3]
- CO3: identify the various issues both independently and cooperatively for current and future research problems in molecular and advanced biotechnology. [K3]
- CO4: analyze the various applications of rDNA technology in evolving plants for resistance to pest and disease, tolerance to herbicides and abiotic factors. [K4]
- CO5: evaluate the steps of the synthesis of novel bio products, development of research aptitude and technical skills. [K5]

Course Code 20PBCC23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
	CO 1									
	M	M	M	L	L	L	-	-	-	-
CO 2	M	M	L	M	M	M	M	-	-	-
CO 3	H	H	H	H	H	H	M	-	-	-
CO 4	H	H	H	H	M	M	M	M	M	-
CO 5	H	H	M	H	M	H	H	H	M	M

Semester II	BIOINFORMATICS LAB	Hours/Week: 4	
Core practical-3		Credits: 2	
Course Code 20PBCC22P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: write the protocols for sequence retrieval from different Biological databases. [K3]

CO2: construct the methodologies for accessing proteomic tools and DNA or protein sequence similarity search using BLAST and visualizing protein structure. [K3]

CO3: interpret the results of retrieved and aligned sequences from different primary databases, structural databases, multiple sequence alignment, proteomic tools and complete the record work notebook. [K3]

CO4: assess the basic informatics tools to extract or retrieve information from Biological databases, molecular visualization tools and its applications. [K4]

CO5: build homology model for unknown protein sequence and predict the structure. [K5]

Course Code 20PBCC22P	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	M	M	M	M	M	M	-	-	L
CO 2	H	H	M	M	M	M	M	-	-	L
CO 3	H	H	M	H	H	H	H	H	H	H
CO 4	H	H	M	H	H	H	H	H	H	H
CO 5	H	H	M	H	H	H	H	H	H	H

Semester II	PLANT BIOCHEMISTRY	Hours/Week: 5	
DSEC-2		Credits: 4	
Course Code 20PBCE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: summarize plant tissue culture, organelles of plant cell and also biochemistry of photosynthetic process and its relation to man and its environment. [K2]

CO2: interpret the role of nutrients and secondary metabolites in plants. [K3]

CO3: sketch the effect of environmental factors, growth regulators and pathogens in plant physiology. [K3]

CO4: analyze the biochemical pathways involved in the synthesis, transport, growth, maturation and disease resistant mechanisms in plants. [K4]

CO5: evaluate the transport mechanism, tissue culture technique and industrial applications of secondary metabolites in plants. [K5]

Course Code 20PBCE21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	H	M	M	H	M	M	M	H
CO 2	H	M	M	M	M	H	M	M	-	-
CO 3	H	H	M	M	M	M	M	M	-	L
CO 4	H	H	M	H	M	M	M	M	-	-
CO 5	H	H	M	H	H	H	H	M	H	M

Semester II	BIOINFORMATICS AND NANOTECHNOLOGY	Hours/Week: 5	
DSEC- 2		Credits: 4	
Course Code 20PBCE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: understand the basic bioinformatics techniques and synthesis, applications of nanomaterials used in biological research. [K2]
- CO2: apply sequence alignment methods for sequence similarity search, visualization tools in biological data and different types of nanomaterials, applications of Nanotechnology in Biomedical and Pharmaceutical Industries. [K3]
- CO3: analyze the different types of nano materials and application of Nanotechnology in Biomedical and Pharmaceutical Industries and different databases, tools used in biological analysis. [K3]
- CO4: examine the development, ELSI of Genome projects, challenges, scope and application of bioinformatics, importance of scoring matrix, gap penalty in sequence alignment, properties of nanomaterials, different types of nanoparticle synthesis methods and its advantage, disadvantage. [K4]
- CO5: evaluate sequence analysis using tools in biological systems, important contributions in bioinformatics, goals, strategies of human genome project, role of nanotechnology in biological research and industries. [K5]

Course Code 20PBCE22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1a	PSO 1b	PSO 2	PSO 3a	PSO 3b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
	CO 1									
	H	H	M	L	L	L	M	M	-	-
CO 2	H	M	M	L	L	L	M	M	-	-
CO 3	H	H	M	H	M	M	M	M	-	M
CO 4	H	H	M	H	M	M	M	M	-	M
CO 5	H	H	M	H	M	M	M	M	-	M

M.Sc. Home Science

Programme Educational Objectives (PEOs)

The students will be able to

- become health professionals in hospitals, fitness centres, food service industries, teachers in educational institution or to be self – employed, to enhance the quality of life of the people.
- advance in the standards of academia through research which contribute the wellbeing of the people.
- follow the professional and ethical standards in their concerned fields and work with social concern, in promoting the health status of the family and community.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
empower the students	√	√	√
providing quality education through scientific aspects of food science, nutrition and dietetics	√	√	√
ensure health for the family, community and nation.	√	√	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc. Home science – Nutrition and Dietetics Programme, the students will be able to

PO1: *Disciplinary Knowledge*

PSO1.a: apply professional knowledge and entrepreneurial skills involved in the various branches of Home Science for empowering themselves and the community.

PSO1.b: apply the obtained knowledge and skills efficiently to pursue research activities and to grab more career opportunities in educational institutions, hospitals, healthcare and service industries, food service institutions, government and non government organizations.

PO2: Communication Skills

PSO2: interact productively and transmit technical information in a clear and concise manner to the professionals, diverse workforce and to the public by using a variety of communication strategies.

PO3: Scientific Reasoning and Problem Solving

PSO3.a: synthesis the scientific and systematic thinking with their hands on experience in cookery, diet planning, diet counseling, food analysis, food preservation, food safety and quality control, bakery and confectionery, textiles and clothing, resource management, interior decoration and housekeeping to promote healthy environment in the community through various outreach programmes.

PSO3.b: apply modern techniques, updated resources and advanced technological tools to meet the needs and challenges of the contemporary society for promoting the holistic welfare of the family, community and the nation.

PO4: Critical thinking and Analytical Reasoning

PSO4: analyse critically the prevailing issues in global nutrition and find out valid solutions through experimentation and research for the welfare of the people.

PO5: Research related skills

PSO5: adopt appropriate statistical tools to analyze the data that enhances interdisciplinary research activities and find appropriate remedies for the existing health related problems in the society.

PO6: Digital Literacy, Self - directed and Lifelong learning

PSO6: develop higher order thinking skills and professionalism using the ICT to nurture the capability for lifelong self-learning.

PO7: Cooperation/Team Work and Multi-Cultural Competence

PSO7: build the interpersonal qualities of coordination, leadership, time management and team spirit through their group project, industrial visit and internship that enable them to become responsible citizens which help to uplift the nation.

PO8: Moral and Ethical awareness

PSO 8: practice the inculcated human values, constitutional values, moral values and ethics in their personal, professional and social life for the sustainable environment.

Semester: I	PRINCIPLES OF FOOD SCIENCE	Hours/Week:6	
Core Course-1		Credits: 5	
Course Code 20PHSC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the concept of food science, food components, process of new food product development and sensory attributes of food. [K2]

CO2: identify the role of food constituents in food and food industries, methods of sensory evaluation to standardize the new food products. [K3]

CO3: determine the effect of processing on food components and sensory attributes of food and new food products. [K3]

CO4: analyse the structure, classification and properties of food components and factors affecting properties of food and food product development. [K4]

CO5: assess the rheology of food, role of water, artificial sweeteners, transfat and fat replacers in food industries and interpret the formation of foam, emulsion and dough in new food products. [K5]

Course Code 20PHSC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	L	L	L	L	H	-	-
CO 2	H	H	H	M	M	M	M	H	-	-
CO 3	H	H	H	M	M	H	H	H	-	-
CO 4	H	H	H	H	M	H	H	H	-	-
CO 5	H	H	H	H	M	H	H	H	-	L

Semester I	APPLIED PHYSIOLOGY	Hours/Week:6	
Core Course - 3		Credits: 5	
Course Code 20PHSC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the structure and parts of the cell, glands, vital organs and systems in the human body.[K2]

CO2: identify the functions of cell, glands, vital organs and systems in human body.[K3]

CO3: determine the physiological mechanism, process and formation of various organs and systems.[K3]

CO4: classify the types of various physiological system in human body.[K4]

CO5: predict the abnormalities found in various organs and systems in the human body by assessing the composition and secretions of various glands.[K5]

Course Code 20PHSC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	H	-	-	L	M	L	-	-
CO 2	H	H	M	M	M	M	H	H	-	-
CO 3	H	H	M	M	M	M	H	H	-	-
CO 4	H	H	M	H	H	M	H	H	-	-
CO 5	H	H	M	H	H	H	H	H	-	H

Semester: I	INSTRUMENTATION IN FOOD ANALYSIS	Hours/Week:6	
Elective Course –1		Credits: 4	
Course Code 20PHSE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

CO1: explain the concept and need of various instruments used in food and nutrition field.

[K2]

CO2: identify the working principle of various instruments used in food sectors. [K3]

CO3: illustrate the instrumentation and working mechanism of instruments used in food analysis.

[K3]

CO4: categorize the instrumental techniques based on their applications in analysis of macro and micro food components. [K4]

CO5: choose the appropriate analytical instrument to measure, identify, separate and purify the unknown minor and major components in foods.[K5]

Course Code 20PHSE12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	M	L	L	M	H	H	-	-
CO 2	H	H	L	M	M	M	H	H	-	L
CO 3	H	H	M	H	H	H	H	H	-	L
CO 4	H	H	M	H	H	H	H	H	-	M
CO 5	H	H	M	H	H	H	H	H	-	M

Semester II	CLINICAL BIOCHEMISTRY	Hours/Week: 6	
Core Course -5		Credits: 5	
Course Code 20PHSC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: outline the basic concept of biomolecules, functions of liver and kidney in human body.[K2]

CO2: write the metabolic pathway and estimation of bio-components in human body. [K3]

CO3: identify the enzyme defect, clinical manifestations and treatment of various metabolic disorders associated with carbohydrate, protein, fat and nucleic acid metabolism. [K3]

CO4: analyze the role of macronutrients, enzymes and major organs in metabolism and clinical diagnosis. [K4]

CO5: interpret the diagnostic methods of various disorders. [K5]

Course Code 20PHSC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	H	H	H	-	-	-	-	M	-	-
CO 2	H	H	H	M	M	M	-	H	-	-
CO 3	H	H	H	M	M	M	M	H	-	-
CO 4	H	H	M	M	M	H	M	H	-	-
CO 5	H	H	M	H	H	H	H	H	-	-

M.Sc. Computer Science

Programme Educational Objectives (PEOs)

The students will be able to

PEO1 - utilize the gained knowledge and adapt current emerging technologies through independent thinking in the rapid changing world.

PEO2 - enhance the technocrats as successful computer professionals, researchers or entrepreneurs with global competence.

PEO3 - acquire professional integrity, moral ethics and become responsible for sustainable development of society and industrial needs through research outcomes.

Key Components of Mission Statement	Programme Educational Objectives		
	PEO1	PEO2	PEO3
in-depth Knowledge	✓	✓	-
good attitude, team work and personality skills	-	✓	✓
promote inquiry and innovation	-	✓	✓
knowledge, skills and attitude	✓	✓	✓
moral ethical and social responsibility	-	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc Computer Science Programme, the students will be able to

PO 1: Disciplinary Knowledge

PSO 1.a: explore in depth knowledge in diverse areas of Computer Science and advanced programming skills to carry research.

PSO 1.b: adapt to new computing technologies with broad range of programming languages and open source platforms for attaining professional excellence and entrepreneurial skill.

PO 2: Communication Skill

PSO 2: effectively communicate the concepts and ideas of new emerging technologies in computer science through effective reports, documentation and clear presentations.

PO 3: Scientific Reasoning

PSO 3: apply the attained knowledge in computer science for problem solving and in developing new application software.

PO 4: Critical Thinking

PSO 4: transform original ideas into novel solutions and apply it with ease to adapt recent trends in diverse areas of computer science.

PO 5: Research Related Skills

PSO 5: enhance technical skills to promote interdisciplinary research in various domains of computer science to fulfill the needs of the society.

PO 6: Digital Literacy

PSO 6.a: use online collaboration tools like google classroom, youtube channel, slideshare and MOOC platform to negotiate content to enhance their learning behaviour through green environment.

PSO 6.b: adapt to new technologies and constantly upgrade their technical skills with an attitude towards independent and life-long learning to become successful in computer industry.

PO 7: Cooperation/TeamWork

PSO 7: implement and evaluate the software projects as a member in a team by utilizing modern software tools.

PO 8: Moral Ethical Values

PSO 8: promote ethical values and make them professionally responsible with the ability to relate computer applications to broader social context for the growth of the nation.

Semester I	ADVANCED OPERATING SYSTEMS	Hours/Week: 5	
Core Course 1		Credits: 5	
Course Code 20PCSC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: describe the functions, design approaches, design issues, synchronization mechanisms and classification of failures for distributed operating system. [K2]

CO2: observe the concepts of distributed file system, virtualization, distributed resource management and virtual machine. [K2]

CO3: determine the agreement problem on distributed system, process of deadlocks, various deadlock detection algorithms, memory and I/O management in virtual environment, failure recovery algorithms and fault tolerance protocols. [K3]

CO4: analyze the centralized deadlock detection algorithms, issues in distributed file system, error recovery in distributed system, different scheduling algorithms, mutual exclusion algorithms, critical section problems in distributed operating systems and issues of processor in virtual environment. [K4]

CO5: assess the deadlock detection algorithms, deadlock avoidance algorithms, recovery algorithms and features of hypervisor virtualization platforms. [K5]

Course Code 20PCSC11	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	-	L	L	-	-	M	L	-	-
CO2	M	-	M	L	L	-	M	L	-	-
CO3	M	M	M	L	L	M	H	M	-	-
CO4	M	M	M	M	M	H	H	H	-	-
CO5	H	H	H	H	M	H	H	H	-	-

Semester I	DATA STRUCTURES USING C++	Hours/Week: 5	
Core Course 2		Credits: 5	
Course Code 20PCSC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: describe the concepts of linear and non-linear data structure through ADT Class and its applications. [K2]
- CO2: illustrate standard operations on various tree and graph data structures. [K2]
- CO3: employ vector and STL on linear and non-linear data structures. [K3]
- CO4: analyze various methods on stack, queue, tree, graph data structures, different types of sorting and hashing techniques. [K4]
- CO5: evaluate stack applications, time complexity of sorting, hashing techniques, tree and graph operations. [K5]

Course Code 20PCSC12	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	H	L	M	L	L	-	M	L	-	-
CO2	H	M	M	L	L	L	M	L	-	-
CO3	H	M	M	L	L	-	H	M	-	-
CO4	H	H	H	M	M	M	H	H	-	-
CO5	H	H	H	H	M	M	H	H	-	L

Semester I	RELATIONAL DATABASE MANAGEMENT SYSTEMS	Hours/Week: 5	
Core Course 3		Credits: 5	
Course Code 20PCSC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: relate Queries, basic operations, set operations and views in SQL, indexing in B+ Tree and hashing. [K2]

CO2: review ACID property in transaction, protocols that handle concurrency in transaction, distributed databases and parallelism approaches in parallel databases. [K2]

CO3: implement relational operations, view constraints in SQL, decomposing algorithms using functional dependencies, ordered indices and hashing technique in B+ Tree, serializability in transaction, serializability in distributed databases and I/O parallelism. [K3]

CO4: analyze aggregate and set theory operations in SQL, normal forms, B+ tree index files, multiple key access and working of parallelism in parallel databases, transaction management in distributed databases. [K4]

CO5: assess the usage of subqueries and constraints in SQL, deadlock handling in transactions, commit protocols in distributed databases, multivalued dependencies for decomposition, operations on B+ Tree and relational operations on parallel databases. [K5]

Course Code 20PCSC13	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	M	L	-	-	-	M	L	-	-
CO2	M	M	M	L	-	L	M	M	-	-
CO3	M	M	M	M	L	L	H	M	-	L
CO4	M	H	H	M	M	M	H	H	-	M
CO5	H	H	H	M	M	M	H	H	-	M

Semester I	DATA STRUCTURES USING C++ LAB	Hours/Week: 5	
Core Practical 1		Credits: 3	
Course Code 20PCSC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: write proper syntax to create a class, declaration of function and the data structures needed for the particular program. [K3]
- CO2: write complete source code with its logic for linear and non-linear data structure for a specified problem. [K3]
- CO3: execute various data structure operations for the specified problem and evaluate the performance and the completion of their record work. [K3]
- CO4: explore the performance of stack, queue, linked list, trees and graphs methods. [K4]
- CO5: modify the program with another possible data structure. [K5]

Course Code 20PCSC11P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	L	M	-	-	-	M	L	L	L
CO2	M	L	M	-	-	-	M	M	L	L
CO3	H	M	M	M	M	L	H	M	L	M
CO4	H	H	H	M	M	M	H	H	M	M
CO5	H	H	H	H	H	M	H	H	M	M

Semester I	RDBMS LAB	Hours/Week: 5	
Core Practical 2		Credits: 3	
Course Code 20PCSC12P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: write commands for table creation, insertion and updation with its proper syntax. [K3]

CO2: write PL/SQL programs to implement the concepts of exception handling, implicit and explicit cursors, functions, procedures, triggers, packages. [K3]

CO3: execute the PL/SQL program through procedures, functions, packages with different parameters to obtain the desired output and evaluate the performance and the completion of their record work. [K3]

CO4: point out the working of triggers, function and procedures, exception handling, implicit and explicit cursors in PL/SQL programs. [K4]

CO5: modify the PL/SQL program from implicit to explicit cursor, from function to procedure and vice versa. [K5]

Course Code 20PCSC12P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	L	M	L	-	-	M	M	L	L
CO2	M	M	M	L	L	-	M	M	L	L
CO3	M	M	H	M	M	M	H	M	L	M
CO4	M	H	H	M	M	M	H	H	M	H
CO5	H	H	H	M	M	M	H	H	M	M

Semester I	SOFT COMPUTING AND MACHINE LEARNING	Hours/Week: 5	
DSEC 1		Credits: 5	
Course Code 20PCSE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: comprehend soft computing techniques like neural networks, fuzzy sets, fuzzy rules, fuzzy reasoning and basics of machine learning. [K2]
- CO2: infer machine learning algorithms, supervised learning and unsupervised learning neural networks. [K2]
- CO3: implement fuzzy inference system, apply least-squares methods for system identification, apply supervised and unsupervised learning algorithms, demonstrate machine learning algorithms. [K3]
- CO4: analyze fuzzy system, genetic algorithm, machine learning paradigm, supervised learning and unsupervised learning networks. [K4]
- CO5: assess fuzzy relations, SGD, supervised learning and unsupervised learning networks. [K5]

Course Code 20PCSE11	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	H	L	H	M	-	M	H	M	-	-
CO2	H	L	H	M	-	M	H	M	-	-
CO3	H	M	H	M	M	H	H	H	-	-
CO4	M	M	M	M	M	H	H	H	-	M
CO5	M	M	M	M	M	H	L	H	-	M

Semester I	AUTOMATA THEORY	Hours/Week: 5	
DSEC 1		Credits: 5	
Course Code 20PCSE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: understand automata theory, finite automata, regular expressions and turing machines. [K2]

CO2: describe context free grammars, pushdown automata. [K2]

CO3: determine regular expressions, deterministic and non-deterministic finite automata for any regular language. [K3]

CO4: explore the application of regular expressions and context free grammars. [K4]

CO5: validate grammars and automata (recognizers) for particular Languages. [K5]

Course Code 20PCSE12	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	L	M	-	-	-	M	-	-	-
CO2	M	L	L	-	-	-	M	L	-	-
CO3	M	M	L	-	-	-	M	M	-	-
CO4	H	M	H	M	L	M	H	M	-	-
CO5	H	M	M	M	L	M	H	H	-	M

Semester I	NEURAL NETWORKS	Hours/Week: 5	
DSEC 1		Credits: 5	
Course Code 20PCSE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: understand ANS technology, mathematical foundations of backpropagation, self organizing maps and adaptive resonance theory. [K2]
- CO2: discuss the architecture of adaline, madaline, counter propagation network, spatiotemporal network and necognitron. [K2]
- CO3: express data processing in counter propagation network, self organizing maps and neocognitron. [K3]
- CO4: investigate BAM, hopfield memory and simulated annealing. [K4]
- CO5: validate backpropagation, self organizing maps and spatiotemporal network for application. [K5]

Course Code 20PCSE13	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	L	M	-	-	-	M	-	-	-
CO2	M	L	L	L	-	-	M	-	-	-
CO3	M	M	H	M	L	M	M	M	-	-
CO4	H	M	L	M	M	M	H	L	-	-
CO5	H	H	M	M	H	M	M	L	-	M

Semester II	ADVANCED COMPUTER ARCHITECTURE	Hours/Week: 5	
Core Course 4		Credits: 5	
Course Code 20PCSC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: comprehend the computer models, program flow mechanism, multiprocessor system interconnects, processor and memory hierarchy. [K2]

CO2: understand the concepts of parallelism, cache memory, pipelining and synchronization mechanisms. [K2]

CO3: demonstrate various multiprocessors, multicomputers, multivector computer, network properties, vector processor, bus systems, shared memory organization, pipelining techniques and message passing mechanism. [K3]

CO4: classify various computer models, processor technologies, memory hierarchies and memory organization, pipeline processor and synchronization mechanisms. [K4]

CO5: assess the system performance through system attributes, hardware and software parallelism, memory allocation, memory replacement policies, pipeline performance, and cache coherence protocols. [K5]

Course Code 20PCSC21	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	H	-	H	-	-	-	M	L	-	-
CO2	H	L	H	L	L	-	H	M	-	-
CO3	H	L	H	M	M	L	H	H	-	-
CO4	H	L	M	M	M	M	H	H	-	-
CO5	H	-	M	H	M	H	M	H	-	L

Semester II	DIGITAL IMAGE PROCESSING	Hours/Week: 5	
Core Course 5		Credits: 5	
Course Code 20PCSC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: describe digital image fundamentals, relationship between pixels, image compression, Discrete Fourier Transform. [K2]
- CO2: discuss various filters in spatial and frequency domain, color image processing, image segmentation, image restoration and reconstruction. [K2]
- CO3: demonstrate image smoothing and sharpening filters, color model conversion, intensity transformation on images, histograms, various algorithms for image restoration, reconstruction and compression methods. [K3]
- CO4: examine image acquisition, image segmentation, compression techniques, functionalities of Spatial and Frequency filters for image enhancement, color models. [K4]
- CO5: assess histogram processing, image restoration, reconstruction, segmentation and compression techniques. [K5]

Course Code 20PCSC22	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	H	M	H	L	L	-	M	L	-	-
CO2	H	M	H	L	L	L	H	M	-	-
CO3	H	M	H	M	M	H	H	H	-	L
CO4	H	M	M	M	M	H	H	H	-	L
CO5	H	M	M	M	M	H	M	H	-	-

Semester II	MAT LAB	Hours/Week: 5	
Core Practical 3		Credits: 3	
Course Code 20PCSC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: write correct statements for vector & matrix creation, reading the image, displaying the image and looping statements with proper syntax. [K3]
- CO2: write MATLAB programs using various geometric transformation operations, thresholding and stretching techniques, filtering operations and morphological operations. [K3]
- CO3: execute MATLAB programs to get the desired output and evaluate the performance and the completion of their record work. [K3]
- CO4: examine implementation of various logical operations, filtering operations, histogram calculation and equalization operations. [K4]
- CO5: modify brightness of the image for various mean value, low pass filter into high pass filter & vice versa and mask window size. [K5]

Course Code 20PCSC21P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	M	M	L	-	-	-	M	M	-	-
CO2	M	M	M	L	L	-	M	M	L	-
CO3	M	M	M	L	L	-	M	M	L	-
CO4	H	H	M	M	M	M	H	H	M	-
CO5	H	H	H	H	M	M	H	H	H	L

Semester II	OPEN SOURCE SOFTWARE LAB	Hours/Week: 5	
Core Practical 4		Credits: 3	
Course Code 20PCSC22P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: write the tags for designing the web pages with header and body section in PHP and give the correct library functions, proper indentation for the Python programs. [K3]
- CO2: write a PHP/Python programs with accurate logic that helps to obtain the expected result. [K3]
- CO3: build web pages using PHP programs and execute basic operations in Python program and evaluate the performance and the completion of their record work. [K3]
- CO4: point out the working of form elements, exception handling in PHP and various data structures in Python. [K4]
- CO5: alter the PHP and Python programs with the specified modifications. [K5]

Course Code 20PCSC22P	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	H	M	M	L	L	-	M	L	L	-
CO2	H	M	M	L	L	-	M	L	M	-
CO3	H	H	H	M	M	H	H	H	H	H
CO4	H	H	H	M	M	M	H	H	H	M
CO5	H	H	H	M	M	M	H	H	H	M

Semester II	NETWORK SECURITY AND CRYPTOGRAPHY	Hours/Week: 5	
DSEC 2		Credits: 5	
Course Code 20PCSE21		Internal 40	External 60

COURSE OUTCOMES

On completion of course, the learners will be able to

CO1: summarize encryption techniques, public key cryptography and hash functions.

[K2]

CO2: express authentication principles, key management, network & IP Security. [K2]

CO3: use block ciphers, encryption standards, public key cryptosystems, digital signature protocols, authentication protocols, cryptography algorithm for IP & Network

Security. [K3]

CO4: analyze various encryption algorithms, hash functions, digital signature algorithm, authentication protocols and security policies. [K4]

CO5: evaluate the performance of encryption standard algorithms, hash algorithms, message authentication functions and authentication services for security. [K5]

Course Code 20PCSE21	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	L	-	M	-	-	-	L	-	-	-
CO2	L	-	M	-	-	-	L	-	-	-
CO3	M	L	H	L	-	L	M	L	-	-
CO4	M	M	H	M	M	M	M	M	-	L
CO5	M	M	H	M	L	M	H	M	-	L

Semester II	INTERNET OF THINGS	Hours/Week: 5	
DSEC 2		Credits: 5	
Course Code 20PCSE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

- CO1: express basic design of IoT, domain specific IoT, IOT and M2M communication. [K2]
- CO2: summarize IoT system management, logical design of IoT using Python, IoT design methodology, physical servers and cloud offering in IoT. [K2]
- CO3: use Python program for IoT system components and IoT system management protocols. [K3]
- CO4: manage IoT system, physical servers and cloud offerings. [K4]
- CO5: choose appropriate Python packages for IoT System and IOT System Management protocols. [K5]

Course Code 20PCSE22	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	L	-	M	-	-	-	L	-	-	-
CO2	L	L	M	-	-	-	M	-	-	-
CO3	L	L	H	L	-	L	M	L	-	-
CO4	M	L	L	L	L	M	L	M	-	M
CO5	M	M	L	L	L	H	M	M	-	M

Semester II	GRID COMPUTING	Hours/Week: 5	
DSEC 2		Credits: 5	
Course Code 20PCSE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the learners will be able to

CO1: express the history, architecture, service elements and layered model. [K2]

CO2: recognize the deployment issues, approaches and tools of grid computing. [K2]

CO3: illustrate the different architecture views, Open Grid Service Architecture (OGSA) services, deployment and management issues of grid computing. [K3]

CO4: analyze the supporting standards of Open Grid Services Infrastructure (OGSI) & OGSA, service relationships and security of grid computing. [K4]

CO5: compare the constituent elements, Globus Toolkit systems, grid standards and grid services of grid computing. [K5]

Course Code 20PCSE23	PO1		PO2	PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6.a	PSO 6.b	PSO 7	PSO 8
CO1	L	-	M	-	-	-	M	-	-	-
CO2	L	-	M	-	-	-	M	-	-	-
CO3	L	-	M	M	L	-	M	-	-	M
CO4	M	L	H	M	L	L	H	L	-	M
CO5	M	L	H	M	M	L	H	L	-	-

M.Sc. Information Technology

Programme Educational Objectives (PEOs)

The students will be able

- PEO 1** to impart exhaustive knowledge to the students in all the sub-domains of Information Technology areas.
- PEO 2** to design & develop novel products and innovative solutions for real life problems in Information Technology field and related domains.
- PEO 3** to provide a conducive and disciplined Academic environment, quality of teaching with innovative & modern methods with necessary technical and managerial skills to attain a successful carrer.

Key Components of the Mission Statement	Programme Educational Objectives (PEOs)		
	PEO 1	PEO 2	PEO 3
Uplift Rural Students	✓	✓	✓
Enhance employability opportunity	✓	✓	
Provide moral values to turn out to be a responsible citizen	✓		✓
Develop graduates to meet the challenges of therapidly changing world	✓	✓	

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programm e-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Sc Programme, the students will be able to

PO 1: Disciplinary Knowledge

PSO 1: apply their in-depth knowledge and skills to succeed in their professional development or to pursue flexible career paths amidst future technological changes.

PO 2: Communication Skill

PSO2 a: enhance skills and adapt new computing technologies for attaining professional excellence and carrying research in IT.

PSO2 b: communicate concepts, designs, and solutions in Information Technology effectively and professionally.

PO 3: Scientific Reasoning and Problem Solving

PSO 3: apply knowledge of computing to produce effective designs and solutions for specific real time problems in the field of Information Technology.

PO 4: Critical Thinking and Analytical Reasoning

PSO 4: analyze the latest technologies and synthesize computing systems through quantitative and qualitative techniques to solve problems in the areas of Information Technology for sustainable environment.

PO 5: Research Related Skills

PSO 5: acquire future technologies through the foundation skills and knowledge and employ them to identify research gaps and pursue research.

PO 6: Digital Literacy, Self - Directed and Lifelong Learning

PSO 6 .a: adapt new technologies and constantly upgrade their skills with an attitude towards lifelong learning in the fields of their interest.

PSO 6 .b: emphasis on mobile and web applications development and learn the emerging technologies and frameworks in demand with employers and contemporary challenges.

PO 7: Cooperation/Team Work

PSO 7: plan, design and execute projects effectively in diverse teams for the development of intelligent systems with a focus on the future.

PO 8: Moral Ethical Values

PSO 8: uphold the social, legal, ethical and cultural ramifications of computer technology and their usage.

Semester I	DATA STRUCTURES AND ALGORITHMS	Hours/Week: 5	
Core Course-1		Credits: 5	
Course Code 20PITC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: elaborate the choice of data structures and concepts and types of Binary trees including properties, operations and traversal that impacts the performance of programs. [K2]
- CO2: apply the operations on non-linear structures, dynamic programming techniques to solve problems like Shortest path, Minimum Spanning tree, Knapsack and Travelling sales person to develop a reliable communication system. [K3]
- CO3: utilize the various operations on types of binary trees, Backtracking and Branch and Bound techniques to provide technology-based conclusions. [K3]
- CO4: examine application using non-linear data structure, backtracking methods and its representation to solve real world computational problems. [K4]
- CO5: summarize the various types of Binary trees, B-Tree and algorithmic concepts to be acquainted with the latest trends in technological development. [K5]

Course Code 20PITC11	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	H	L	M	M	M	L	-	L
CO3	H	H	H	H	H	H	H	L	-	L
CO3	H	H	H	H	M	M	M	L	-	L
CO4	H	L	H	M	M	L	M	L	-	M
CO5	H	M	H	H	H	H	H	M	-	M

Semester I	ADVANCED JAVA PROGRAMMING	Hours/Week: 5	
Core Course-2		Credits: 5	
Course Code 20PITC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: express object-oriented language of classes and objects, Event Classes, AWT Classes for attaining professional excellence. [K2]
- CO2: ascertain the knowledge of Multithreaded Programming, Event Listener Interfaces and Applet Architecture which influences the real-world project knowledge in an effective way. [K3]
- CO3: assign an Applet Skeleton, Swing, concept of JDBC, Remote Method Invocation, Bean Developer Kit for adopting the latest technologies and techniques to expand projects skill. [K3]
- CO4: characterize and manage Errors and Exception, Window Fundamentals. JApplet, URL Connection in an intelligent system with a great focus of research. [K4]
- CO5: appraise the concept of Frame Windows, Simple Applet Display Methods, GUI based, Database Connection, Result sets, Datagrams, Bean Builder for achieving and adopting new technologies to upgrade their skills constantly. [K5]

Course Code 20PITC12	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	M	H	M	L	M	M	-	M
CO2	H	M	L	H	M	L	H	H	-	L
CO3	H	H	H	H	H	M	M	H	-	M
CO4	H	M	M	M	H	M	L	M	-	L
CO5	H	H	H	H	H	M	M	H	-	M

Semester I	CRYPTOGRAPHY AND NETWORK SECURITY	Hours/Week: 5	
Core Course-3		Credits: 5	
Course Code 20PITC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: grasp the methods of conventional, modern and advanced encryption techniques, authentication mechanism, Digital signature schemes and layers level security to enhance their skills. [K2]
- CO2: implement the concepts of ciphering techniques, public key encryption(RSA), hash functions, key management and number theory to obtain data security and to develop intelligent system on their own. [K3]
- CO3: apply the various encryption and authentication algorithms, Hash functions and key distribution algorithms are used for network security over the internet. [K3]
- CO4: characterize the authentication mechanism for system, encryption mechanism for both data integrity and security which was used for real time projects and their research works. [K4]
- CO5: assess the different types of ciphering techniques, modern and advanced encryption algo used and the usage of hash functions, digital signature in network security. [K5]

Course Code 20PITC13	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	M	L	M	M	M	H	M	-	L
CO2	H	M	M	H	M	H	H	M	-	M
CO3	H	L	L	M	H	M	M	H	-	M
CO4	H	H	L	H	H	H	H	H	-	M
CO5	H	L	H	H	M	H	M	H	-	M

Semester I	DATA STRUCTURES USING C POINTERS LAB	Hours/Week: 5	
Core Practical-1		Credits: 3	
Course Code 20PITC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: apply the basic structures such as arrays and linked list using pointers with the knowledge of course. [K3]
- CO2: implement the fundamental algorithms including tree traversals, BFS, DFS and shortest path by applying mathematical foundations in IT. [K3]
- CO3: demonstrate the implementation of various operations on linked list, stack and queue and thereby innovate new ideas by self-directed. [K3]
- CO4: point out the new algorithms or modify existing ones for new applications to achieve the target. [K4]
- CO5: assess various searching and sorting algorithms to apply current technical concepts and practices. [K5]

Course Code 20PITC11P	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	H	H	H	M	H	H	H	M
CO2	H	H	H	H	H	M	H	H	H	M
CO3	H	H	H	H	M	H	M	M	H	M
CO4	H	H	H	M	H	H	M	M	M	H
CO5	H	M	H	M	H	H	L	M	M	H

Semester I	ADVANCED JAVA PROGRAMMING LAB	Hours/Week: 5	
Core Practical-2		Credits: 3	
Course Code 20PITC12P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: employ the object-oriented language and its usage of interfaces and packages for attaining professional excellence. [K3]
- CO2: manipulate the uses of databases connectivity which is included for real-world project domains knowledge of effective designs and solutions. [K3]
- CO3: apply the client/server applications and TCP/IP, UDP socket programming for the latest technologies and techniques to solve projects skill. [K3]
- CO4: investigate the distributed application using RMI, NET Beans effectively with intelligent systems with a focus of research. [K4]
- CO5: measure the various component-based java software using Java Beans and Apple effectively to achieve and adopt new technologies and constantly upgrade their skills. [K5]

Course Code 20PITC12P	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	H	H	M	H	M	M	H	M
CO2	H	H	M	H	M	H	H	H	H	M
CO3	H	H	H	H	H	H	H	H	M	M
CO4	H	H	M	M	M	M	M	M	M	M
CO5	H	H	H	H	M	M	M	H	M	M

Semester I	DISTRIBUTED OPERATING SYSTEMS	Hours/Week: 5	
DSEC-1		Credits: 5	
Course Code 20PITE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: interpolate hardware and software issues dealt under Message Passing, Distributed Shared memory, Resource, Process and File managing systems that afford modern distributed systems knowledge. [K2]
- CO2: acquire knowledge on Distributed Computing, Synchronization, Shared Memory, Naming and Processing techniques that benefit to understand the theory of Distributed Systems. [K3]
- CO3: make use the concepts of distributed systems including Messaging, Processing, Memory and File systems to design large systems. [K3]
- CO4: explain a distributed system that fulfills requirements of Distributed Operating Systems such as Buffering, Replacement Strategy, Process Migration and File transactions to tackle industrial challenges. [K4]
- CO5: prescribe different Distributed Systems and the challenges involved in Memory, Process, Messages and File processing system to transform innovative ideas in reality. [K5]

Course Code 20PITE11	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	H	M	M	H	H	L	M	L
CO2	H	L	H	H	H	H	H	L	M	M
CO3	H	M	H	H	M	H	H	L	M	M
CO4	H	M	H	M	M	H	H	L	H	M
CO5	H	H	H	M	H	H	M	L	H	L

Semester I	CLOUD COMPUTING	Hours/Week: 5	
DSEC-1		Credits: 5	
Course Code 20PITE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: learn the main concepts, key technologies, strengths, and limitations of cloud computing to enhance their knowledge. [K2]

CO2: apply the cloud computing paradigm of various types of cloud services such as software, platform, infrastructure, database of various service providers to find solutions for specific domain problems. [K3]

CO3: experiment Cloud Computing capable data centers to real world based on their carrier. [K3]

CO4: explain the architecture, infrastructure and delivery models of cloud computing to solve real world problem. [K4]

CO5: determine the core issues of cloud computing such as security, privacy and interoperability for applying current technical concepts and practices. [K5]

Course Code 20PITE12	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	L	H	M	M	L	L	-	L
CO2	H	H	M	L	M	M	H	L	-	L
CO3	H	L	L	L	H	H	L	H	-	L
CO4	H	M	L	M	L	L	M	L	-	L
CO5	H	L	L	L	L	L	M	L	-	M

Semester I	TCP/IP PROTOCOLS	Hours/Week: 5	
DSEC-1		Credits: 5	
Course Code 20PITE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: explain the protocols and its structure as well as to know about sub-netting, masking and demonstrate the functions of TCP and UDP to enhance the knowledge in digital networking and communication. [K2]
- CO2: illustrate the knowledge of basic protocols involved in routing, wired/wireless communication and acknowledging the methods of transmission to emphasis the techniques of different web browsers. [K3]
- CO3: apply the routing techniques, subnets, DNS, the broadcasting mechanism in the internet and application protocols that use the services of other layers to design the digital system. [K3]
- CO4: compare the performance of networking devices and different routing protocols such as IP, ICMP, TFTP etc., and communication protocol TCP and UDP to meet desired needs in real world. [K4]
- CO5: evaluate the methods of process-to-process communication and transmission methods in UDP, TCP and SMTP to solve computation problems. [K5]

Course Code 20PITE13	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	H	M	H	H	M	M	H	-	L
CO2	H	H	H	H	H	H	H	M	-	L
CO3	H	H	H	H	M	M	M	L	-	L
CO4	H	M	H	M	M	L	M	L	-	L
CO5	H	M	H	H	H	H	H	M	-	L

Semester: II	ARTIFICIAL INTELLIGENCE	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 20PITC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: discuss and demonstrate fundamental understanding of the evaluation of Artificial Intelligence (AI) and its foundations. [K2]
- CO2: illustrate the concepts and apply the basic principles, models, and algorithms of AI to recognize, model, and solve problems to build a real time AI Problems. [K3]
- CO3: adopt the structures and algorithms related to AI Techniques and language processing to real time and research projects implementation. [K3]
- CO4: establish the various searching techniques, constraint satisfaction problem, example problems- game playing techniques and extracting knowledge models from data to upgrade their skills and develop their career paths. [K4]
- CO5: summarize the limitations of current Artificial Intelligence techniques to solve real world computational problems. [K5]

Course Code 20PITC22	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	L	L	M	M	M	M	M	-	L
CO2	H	H	L	M	M	L	H	L	-	L
CO3	H	M	L	H	H	M	M	L	-	L
CO4	H	M	L	H	M	M	M	L	-	L
CO5	H	L	L	H	M	M	L	L	-	L

Semester II	MOBILE APPLICATIONS LAB	Hours/Week: 5	
Core Practical-3		Credits: 3	
Course Code 20PITC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: apply the basic components and basics of event handling of an Android application to develop their skills. [K3]
- CO2: demonstrate the basics of graphics and multimedia support in Android application and to build a real time application of their own. [K3]
- CO3: classify the installation and configuration of an Android application development tools on real time. [K3]
- CO4: illustrate an application using multi-threading, RSS feed and to Make use of location identification using GPS on global market environment. [K4]
- CO5: evaluate a native application using GUI components and Mobile application development framework for their research work. [K5]

Course Code 20PITC21P	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	M	L	M	L	L	M	H	M	L
CO2	H	M	L	M	L	M	L	H	M	L
CO3	H	M	L	M	H	M	M	H	M	H
CO4	H	H	M	M	M	H	H	H	H	M
CO5	H	M	M	L	H	H	M	H	H	M

Semester II	DATA MINING	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 20PITE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: express the functionality of the various data mining and data warehousing component to enhance their knowledge. [K2]
- CO2: assign the appropriate algorithm to solve real world problem. [K3]
- CO3: experiment and evaluate different data mining techniques like classification, clustering and association rule for applying current technical concepts and practices. [K3]
- CO4: discriminate different methodologies used in data mining to find solutions for specific domain problems. [K4]
- CO5: assess the strengths and limitations of various data mining and data ware housing models in real world based on their carrier. [K5]

Course Code 20PITE22	PO1	PO2		PO3	PO4	PO5	PO6		PO7	PO8
	PSO 1	PSO 2. a	PSO 2. b	PSO 3	PSO 4	PSO 5	PSO 6. a	PSO 6. b	PSO 7	PSO 8
CO1	H	M	L	L	M	M	L	L	-	L
CO2	H	H	M	L	M	L	H	L	-	L
CO3	H	L	L	H	H	M	L	L	-	L
CO4	H	M	L	M	L	M	M	L	-	L
CO5	H	L	M	L	L	M	M	M	-	L

M.Com.

Programme Educational Objectives (PEOs)

The students will be able to

- apply the knowledge and skills acquired to pursue research oriented higher studies and to become successful professionals in the field of Commerce.
- engage in continuous learning which will promote professional growth and personal growth based on values and ethos.
- develop management skills and entrepreneurial skills for contributing to the socio economic equity and environment sustainability.

Key Components of Mission Statement	PEO1	PEO2	PEO3
Environment for understanding and continuous learning	✓	✓	✓
Higher studies or employment or self employment	✓	✓	-
Applications for the betterment of the society	✓	✓	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.Com Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a : apply the in-depth knowledge in Commerce incorporated with fundamental knowledge in Statistics, Mathematics, Management and Commerce related softwares and Packages for pursuing M.Phil. and Ph.D. programmes

PSO 1.b : make use of standard formulae, modern tools, techniques and statistical/software packages in the branches of Commerce to assess or estimate cost, income, profit, sales, tax, assets and liabilities in their career.

PO 2: *Communication Skills*

PSO 2 : communicate proficiently the concepts, theories, principles, procedures, provisions, applications and Commerce related ideas to examiners, academicians, peer groups, investors, industrialists, business people and to others at any hierarchy level in the organization structure

PO 3: *Scientific Reasoning and Problem Solving*

PSO 3 : practice the provisions of related Acts and adapt the principles of Commerce to achieve in their career as accountants, consultants, advisors, officers or entrepreneurs

PO 4: *Critical Thinking and Analytical Reasoning*

PSO 4 : critically evaluate the individual and business practices in the branches of Commerce and provide valid conclusions for the betterment of individuals, business, industry and society as a whole.

PO 5: *Research Related Skills*

PSO 5.a : formulate research problems based on the needs of the society and apply the appropriate research methodologies for researches in the area of Marketing, Banking, Finance, Management, Entrepreneurship and Consumer Behaviour.

PSO 5.b : explore the opportunities for inter-disciplinary research endeavours.

PO 6: *Digital Literacy, Self - directed and Lifelong Learning*

PSO 6 : increase their level of digital literacy with the use of ICT and engage in self-learning to clear SET/NET and to progress in their career by facing the then prevailing challenges

PO 7: *Co-operation/Team Work and Multicultural Competence*

PSO 7 : develop good interpersonal relationship in multicultural team works by applying self-management principles and leadership traits for achieving common goal for the welfare of the organization and nation.

PO 8: *Moral and Ethical Awareness*

PSO 8 : uphold the imbibed legal, moral and ethical values in their Career and contribute towards sustainable environment by adopting electronic practices in Commerce

Semester I	BUSINESS ENVIRONMENT	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts and principles used in to Business Environment. [K2]

CO2: explain the factors influencing all the types of business environment. [K2]

CO3: apply and illustrate the provisions and procedures related to business environment. [K3]

CO4: compare and analyse the impact of environment factors on business. [K4]

CO5: evaluate the social responsibility of business, the new industrial policy and policy on foreign direct investment and multinational corporations. [K5]

Course Code 20PCOC11	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	-	H	-	-	M	M	M	-	L
CO2	H	-	H	-	-	M	M	M	-	-
CO3	H	-	M	M	-	L	M	M	-	M
CO4	H	-	H	M	M	M	M	L	L	L
CO5	H	-	H	M	M	M	M	L	-	M

Semester I	FINANCIAL MARKETS AND SERVICES	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts and components of financial markets and services. [K2]

CO2: relate the functioning of financial markets and distinguish financial services. [K3]

CO3: apply the procedure for listing of securities, online trading of shares, depository system and venture capital finance. [K3]

CO4: analyse the various schemes of financial services and the services of stock brokers, merchant bankers and factors. [K4]

CO5: evaluate the performance of overall financial systems and services. [K5]

Course Code 20PCOC12	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	H	-	-	-	-	M	-	-
CO2	H	H	H	M	L	M	M	-	M	-
CO3	H	H	M	L	L	-	-	-	L	M
CO4	H	H	M	-	M	-	-	-	-	-
CO5	H	H	-	-	M	M	M	-	-	-

Semester I	ADVANCED ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: discuss the accounting concepts, conventions & accounting standards, features of single entry and double entry system, types of branches and provisions relating insolvency. [K2]

CO2: apply the accounting treatment to find out profit (surplus) or loss (deficit) of each branch, department and non-trading concerns. [K3]

CO3: differentiate the receipts & payment account and income & expenditure account, hire purchase and installment purchase system, branch accounting & departmental accounting and statement of affairs and balance sheet. [K4]

CO4: analyse the procedure under Insolvency Act and prepare Insurance Policy Accounts and Deficiency Accounts. [K4]

CO5: assess the profit or loss in single entry by means of conversion method. [K5]

Course Code 20PCOC13	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	H	H	M	M	L	-	-	M
CO2	H	H	H	H	H	H	L	-	M	-
CO3	H	H	H	H	H	M	-	-	-	L
CO4	H	H	H	H	H	L	H	-	-	L
CO5	H	H	M	H	H	L	L	-	-	L

Semester I	ORGANIZATIONAL BEHAVIOUR	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the terminology related to organizational behavior including technology and the components. [K2]

CO2: explain the steps for smooth organizational behavior, personality, organizational climate and organizational effectiveness. [K2]

CO3: point out the type of conflict, type of resistance and to apply conflict management and resistance management. [K3]

CO4: distinguish the factors determining personality, organizational climate and organizational effectiveness. [K4]

CO5: evaluate individual behavior and group behavior in an organization. [K5]

Course Code 20PCOC14	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	H	-	-	-	-	M	-	-
CO2	H	H	H	M	L	M	M	-	M	-
CO3	H	H	M	L	L	-	-	-	L	-
CO4	H	H	M	-	M	-	-	-	-	-
CO5	H	H	-	-	M	M	M	-	-	L

Semester I	BUSINESS STATISTICS METHODS	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PCOE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1: describe the basics of probability theorems, distributions, hypothesis, parametric and non-parametric tests. [K2]
- CO2: calculate the various probability values, theoretical distribution values and values as per parametric and non-parametric tests. [K3]
- CO3: classify hypotheses, compare and contrast tests and explain the procedure for testing of hypothesis under parametric and non-parametric tests. [K3]
- CO4: analyse the probability theorems to be applied, relate among binomial, poisson and normal distribution and test the null hypotheses for large samples and small samples under parametric and non-parametric tests. [K4]
- CO5: identify the situations to apply Bayes theorem, fit theoretical probability distributions, test the hypothesis under two way ANOVA and compute chi square values after grouping and correction. [K5]

Course Code 20PCOE11	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	H	H	-	-	-	-	-	-
CO2	H	H	H	H	L	-	-	-	-	-
CO3	H	H	H	H	H	H	L	-	-	-
CO4	H	H	L	H	H	H	L	L	L	M
CO5	H	H	L	H	H	H	-	-	L	-

Semester II	BUSINESS STATISTICS FOR COMPETITIVE EXAMINATIONS	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PCOE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic concepts and formulae in business statistics. [K2]

CO2: calculate the measures of central tendency, measures of dispersion, correlation and required probability values. [K2]

CO3: apply the Statistical formulae, probability and theoretical distribution principles for solving problems. [K3]

CO4: interpret the statistical data given in various descriptions; Arrive at the degree of relationship between two variables. [K4]

CO5: estimate the confidence limit: Fit theoretical frequencies. [K5]

Course Code 20PCOE12	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	M	M	-	H	H	L	-	M
CO2	H	H	M	M	-	H	H	-	-	-
CO3	H	H	M	M	M	H	H	-	-	-
CO4	H	H	M	M	M	H	H	L	-	-
CO5	H	H	M	M	M	H	H	L	-	-

Semester I	BUSINESS STATISTICAL ANALYSIS	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PCOE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the basic elements and procedures in the prescribed tools for statistical analysis, statistical packages and ethics for Statistics. [K2]

CO2: calculate the association between attributes and the required interpolated and extrapolated values. [K2]

CO3: apply the statistical tools to formulate statistical equations and quality control techniques. [K3]

CO4: analyse the data and make decisions with the use of decision theory and other statistical tools. [K4]

CO5: estimate the future values based on statistical tools. [K5]

Course Code 20PCOE13	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	M	M	-	H	H	-	-	-
CO2	H	H	M	M	-	H	H	-	-	-
CO3	H	H	M	M	M	H	H	-	-	-
CO4	H	H	M	M	M	H	H	-	-	-
CO5	H	H	M	M	M	H	H	L	-	M

Semester II	ADVANCED AUDITING	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concepts related to the audit, auditing, auditor, and various audit of various business organisations. [K2]

CO2: explain the audit procedure in various concerns and list down the audit standards and professional ethics. [K2]

CO3: apply E-Audit and the provisions of Company's Act relating to the audit of various concerns and audit standards and professional ethics. [K3]

CO4: compare and contrast the audit of Limited Companies with audit of firm, Government, banking companies and tax audit and explain E-audit, audit standards and professional ethics. [K4]

CO5: summarise the duties of an auditor relating to the various concerns. [K5]

Course Code 20PCOC21	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	M	-	L	L	-	L	L	-	-	-
CO2	H	-	M	M	L	M	L	-	-	-
CO3	H	-	H	H	L	H	M	L	L	L
CO4	H	-	H	H	M	H	M	L	L	L
CO5	H	-	H	H	M	H	M	-	L	L

Semester II	GLOBAL MARKETING	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the scope of Global marketing, overseas marketing research, schemes and zones. [K2]

CO2: explain the Export, Import procedures and functions of organization. [K2]

CO3: apply the procedures related to export and import. [K3]

CO4: analyse the barriers and recent trends; distinguish between Domestic and International Marketing and Balance of Trade and Balance of Payments. [K4]

CO5: evaluate the methods of global pricing, distribution channels, risks and sources of Marketing Research. [K5]

Course Code 20PCOC22	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	M	M	-	-	-	M	M	L	-
CO2	H	M	M	-	-	-	M	M	M	L
CO3	H	H	M	L	L	-	M	M	M	L
CO4	H	H	M	-	-	-	H	M	M	-
CO5	H	H	M	L	L	-	M	H	M	-

Semester II	COSTING METHODS AND TECHNIQUES	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the terminology in various costing methods and techniques and ethics to be followed by the accountant. [K2]

CO2: explain the importance and advantages of various costing methods and techniques. [K2]

CO3: make use of costing methods to find out CVP ratios, various cost variances and to prepare budgets. [K3]

CO4: analyse CVP, cost variances and types of budget. [K4]

CO5: predict the sales/profit/quantity for managerial decision making. [K5]

Course Code 20PCOC23	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	H	-	-	-	-	-	-	M
CO2	H	H	H	-	-	M	M	-	-	-
CO3	H	H	M	M	M	-	-	-	-	-
CO4	H	H	M	M	M	-	-	M	-	-
CO5	H	H	M	L	M	-	M	-	-	-

Semester II	OPERATIONS RESEARCH	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PCOC24		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the characteristics of Operations Research (OR), its scope, models, techniques, limitations and its application areas. [K2]

CO2: formulate models and arrive at initial feasible solution for any problem in OR. [K2]

CO3: solve problems in OR graphically and by applying formulae, techniques and network analysis. [K3]

CO4: assess the scope for profit maximization, cost and time minimization, expansion or contraction and project management. [K4]

CO5: develop network analysis for real life projects; bring out optimal solution by iteration. [K5]

Course Code 20PCOC24	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	M	H	-	-	M	L	-	-
CO2	H	H	M	H	-	M	-	-	-	-
CO3	H	H	M	H	M	-	-	-	-	-
CO4	H	H	M	H	M	-	-	-	-	-
CO5	H	H	M	H	M	-	-	L	-	-

Semester I	ACCOUNTING SOFTWARE - TALLY.ERP9 WITH GST	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PCOE21		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

CO1: describe the basic concepts related to Accounting, ERP and GST. [K2]

CO2: state the steps in company creation and entering the details using Tally.ERP9. [K2]

CO3: calculate GST and illustrate different types of vouchers and ledgers using function keys and shortcut keys. [K3]

CO4: analyse the final accounts in Tally.ERP9 along with cash flow and fund flow statements, distinguish different types of GST and compare GST with old regime. [K4]

CO5: develop the skill towards online GST registration. [K5]

Course Code 20PCOE21	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	M	L	-	-	-	H	-	-
CO2	H	H	M	L	-	-	-	H	-	-
CO3	H	H	M	M	-	-	-	H	-	-
CO4	H	H	M	L	L	-	-	H	-	-
CO5	H	H	M	M	L	-	-	H	-	H

Semester II	DATA BASE MANAGEMENT	Hours/Week: 6	
Discipline Specific		Credits: 4	
Elective Course		Internal	External
Course Code 20PCOE22		40	60

COURSE OUTCOMES

On completion of this course, the students will be able to

- CO1: distinguish among various models of DBMS, types of index, views and queries. [K2]
- CO2: apply the data normalization, attributes and create table using Query and sub queries. [K3]
- CO3: use entity relationship modeling using ER symbols, Forms, creating an index, manipulating operations of view and queries. [K3]
- CO4: analyse the connectivity, denormalization, dropping an Index, comparison operators, testing for null actions and qualified retrieval. [K4]
- CO5: process the given information using aggregate functions and operations. [K5]

Course Code 20PCOE22	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	M	M	M	M	L	-	L	-	-
CO2	H	M	L	L	M	M	-	M	-	-
CO3	H	M	L	L	-	H	-	L	-	-
CO4	H	M	L	L	-	H	-	L	-	L
CO5	H	-	M	-	L	H	-	L	-	-

Semester II	ELECTRONIC PRACTICES IN COMMERCE	Hours/Week: 6	
Discipline Specific Elective Course		Credits: 4	
Course Code 20PCOE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the various concepts related to electronic practices in Commerce. [K2]

CO2: identify and use the different properties of electronics in commerce,
advertisement, services, emails and HTML tags. [K3]

CO3: make use of HTML for developing web pages for online shopping, applications
of services industries, effective use of e-mail for future e-commerce. [K3]

CO4: analyse various categories of electronic practices in Commerce. [K4]

CO5: evaluate Intranets and Fire walls in the context of electronic commerce. [K5]

Course Code 20PCOE23	PO1		PO2	PO3	PO4	PO5		PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO3	PSO4	PSO 5.a	PSO 5.b	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	H	-	M	-	L
CO2	H	H	H	M	M	L	L	L	-	L
CO3	H	H	M	L	L	L	-	-	L	L
CO4	H	H	M	L	L	M	-	-	L	L
CO5	H	H	M	L	L	-	-	-	L	L

M.C.A

Programme Educational Objectives (PEOs)

The students will be able to

- develop technical competence in various functional domains of computer applications.
- analyze real life problems, design computing systems appropriate to its solutions that are technically sound, economically feasible and socially acceptable.
- exhibit entrepreneurial skills and find novel solutions through technological based research.
- continue a lifelong professional development in computing that contributes innovative methodologies to solve complex problems for the betterment of the society

Key Components of Mission Statement	PEO1	PEO2	PEO3	PEO4
high-grade, value-based education	√	-	√	-
design and develop systems	√	√	√	√
consultancy service and research	-	√	√	√
meet the ever-changing needs of society.	√	√	-	√

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.C.A Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a :Apply in depth knowledge of Computer Applications to analyze and design system that can provide more economic and affordable solutions in multidisciplinary environments and productively engage in research.

PSO 1.b :Make use of their professional skills in Computer Applications in obtaining jobs thereby becoming responsible citizens.

PO 2: *Communication Skills*

PSO 2.a:Communicate efficiently the selected suitable data model, appropriate architecture and platform to implement a system with a range of audiences through well-organized, precise, and effective oral presentations.

PSO 2.b :Communicate effectively with the computing community as well as society by being able to comprehend effective documentations with presentations.

PO 3: *Scientific Reasoning and Problem Solving*

PSO 3 :Identify and define problems and issues, recognizing their complexity, considering alternative viewpoints and solutions to the real world problems using latest techniques for sustainable environment.

PO 4: *Critical Thinking and Analytical Reasoning*

PSO 4 :Investigate complex problems by employing analysis, interpretation and evaluation of data in the domain areas such as Machine learning, Digital Image processing, IoT, Cloud Computing, Security, Business Intelligence and Big data analytics to provide valid conclusion for nation building.

PO 5: *Research Related Skills*

PSO 5 :Develop research capability by utilizing modern computer technologies, environments, and platforms in creating innovative career paths to be an entrepreneur, and contribute towards society.

PO 6: *Digital Literacy, Self - directed and Lifelong Learning*

PSO 6 :Make use of latest ICT tools to develop effective e-content for problematic topics and engage in self-directed and lifelong learning with strong fundamentals in computer science, analytics, programming and problem solving.

PO 7: *Co-operation/Team Work and Multicultural Competence*

PSO 7 :Work professionally with positive attitude as an individual or in multidisciplinary teams and communicate effectively.

PO 8: *Moral and Ethical Awareness*

PSO 8 :Use of recent technology, skill and knowledge for computing practice with commitment on societal, moral and ethical values.

Semester I	OBJECT ORIENTED PROGRAMMING USING C++	Hours/Week: 4	
Core Course-1		Credits: 3	
Course Code 20PCAC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the concepts of object, class, data types, function, constructor, destructor, overloading, inheritance, polymorphism, files, template and exception handling. [K2]
- CO2 : apply features of OOP concepts to make programs supporting reusability and sophistication. [K3]
- CO3 : illustrate class, function, constructor, destructor, overloading, inheritance, polymorphism, files, template and exception handling. [K3]
- CO4 : classify inheritance with the understanding of early and late binding, usage of class, functions, constructor, destructor, overloading, pointers, polymorphism, templates and exception handling in generic programming, analyse various concepts of file I/O stream and categorize various file modes. [K4]
- CO5 : compare C with C++, class with structure and union, constructor with destructor and evaluate the idea of polymorphism and manage to handle files used in developing programs for real time applications. [K5]

Course Code 20PCAC11	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	H	M	-	L	L	-	-	-
CO2	H	M	M	M	M	L	L	M	L	-
CO3	M	H	M	H	M	L	L	M	-	-
CO4	M	H	H	M	M	H	M	L	-	-
CO5	M	M	H	H	L	M	M	M	L	-

Semester I	DATA STRUCTURES	Hours/Week: 4	
Core Course-2		Credits: 4	
Course Code 20PCAC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand core concepts of linear data structures array, linked list, stack, queue and non-linear data structures trees, graphs, tables. [K2]
- CO2 : illustrate linear and non-linear data structures operations. [K3]
- CO3 : choose appropriate data structures to solve problems. [K3]
- CO4 : compare and analyze the linear and non-linear data structures with respect to various operations and complexity. [K4]
- CO5 : evaluate and prioritize the various data structures in terms of its operations. [K5]

Course Code 20PCAC12	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	-	-	-	H	-	-
CO2	H	M	H	-	-	-	-	-	L	-
CO3	H	M	-	H	H	M	-	M	-	L
CO4	H	-	M	M	M	M	M	L	-	-
CO5	M	-	L	L	H	H	M	-	-	-

Semester I	OPERATING SYSTEMS	Hours/Week: 4	
Core Course-3		Credits: 4	
Course Code 20PCAC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : illustrate the basics of operating systems, classify process states, discuss different scheduling, outline the importance of memory hierarchy, and represent the file operations. [K2]
- CO2 : identify the modes of I/O, race conditions, apply a suitable scheduling policy, model contiguous and non- contiguous memory allocation, and different access methods. [K3]
- CO3 : identify the classes of OS, ways of managing memory hierarchy and plan for a suitable file organization method, manipulate Semaphores, choose appropriate deadlock handling method, and identify. [K3]
- CO4 : examine how program execution is controlled, the Process Synchronization Problem, Deadlock Handling in UNIX, distinguish static and dynamic memory allocation and comment on Unix File System. [K4]
- CO5 : assess different classes of OS, needs of semaphores, different deadlock handling methods, importance of paging and segmentation and disk scheduling methods. [K5]

Course Code 20PCAC13	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO 6	PSO7	PSO8
CO1	H	H	H	M	-	L	-	-	-	-
CO2	M	H	M	M	M	L	-	M	-	L
CO3	-	M	H	-	M	L	-	-	-	-
CO4	M	-	-	M	H	M	M	M	-	-
CO5	H	M	H	H	H	H	-	H	-	-

Semester I	RELATIONAL DATABASE MANAGEMENT SYSTEMS	Hours/Week: 4	
Core Course-4		Credits: 4	
Course Code 20PCAC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : Outline database system, relational model, atomic domains, functional dependency and normal forms, demonstrate transaction, concurrency, distributed and object based databases. [K2]
- CO2 : identify database languages and database users, solve relation operations and concurrency problems, and apply protocols in distributed transactions.[K3]
- CO3 : determine database system, relational model and functional dependency, solve various normal forms, utilize protocols to ensure serializability, apply object based concepts in SQL. [K3]
- CO4 : analyze the database systems and improve its design by normalization, deadlock handling in distributed databases, protocols in handling replication in distributed databases, approaches to handle objects persistence. [K4]
- CO5 : explain architecture of database systems, examine relation operations, interpret various normal forms, test for serializability of schedule, importance of distributed database and collection types and object orientation in object-based databases. [K5]

Course Code 20PCAC14	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	-	-	-	-	-	L	-	-
CO2	H	-	-	-	H	M	-	M	L	L
CO3	M	M	M	H	H	M	L	-	L	L
CO4	M	H	M	M	-	H	M	M	L	L
CO5	M	H	H	M	L	H	H	H	L	L

Semester I	DATA STRUCTURES USING C++ LAB	Hours/Week: 5	
Core Practical -1		Credits: 3	
Course Code 20PCAC11P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : illustrate linear and non-linear data structures. [K3]
- CO2 : write programs for implementing the various operations of linear and non-linear data structures. [K3]
- CO3 : key in and execute programs with required input and get expected outputs with neat formatting and prepare the record work. [K3]
- CO4 : explain the given program and answer questions related with that program. [K4]
- CO5 : rewrite program to incorporate modification and justification of the desired result. [K5]

Course Code 20PCAC11P	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	L	-	H	-	-
CO2	H	M	-	-	M	M	L	M	L	L
CO3	H	M	L	L	H	L	M	M	-	-
CO4	H	M	M	M	-	M	M	-	-	-
CO5	H	M	H	H	-	H	M	L	-	-

Semester I	OPEN SOURCE TECHNOLOGY LAB	Hours/Week: 5	
CorePractical-2		Credits: 3	
Course Code 20PCAC12P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : identify the methods and process to use arrays, string, image, files, cookies, sessions and MYSQL database in web applications. [K3]
- CO2 : write programs implementing arrays, string, image, files, cookies, sessions and make connections with databases in web applications. [K3]
- CO3 : key-in the programs and test the programs with required input and get expected outputs with neat formatting and prepare the record work. [K3]
- CO4 : explain the programs implemented using PHP and MYSQL and deduce the answers for any queries raised. [K4]
- CO5 : reconstruct the program to adapt the necessary modifications and justify the desired result. [K5]

Course Code 20PCAC12P	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	L	-	H	-	-
CO2	H	M	-	-	M	M	L	M	L	L
CO3	H	M	L	L	H	L	M	M	-	-
CO4	H	M	M	M	-	M	M	-	-	-
CO5	H	M	H	H	-	H	M	L	-	-

Semester I	DATA COMMUNICATION AND NETWORKS	Hours/Week: 4	
DSEC-1		Credits: 4	
Course Code 20PCAE11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : describe the concepts of Data communication and layered protocol models. [K2]
- CO2 : relate guided and unguided media based on its applications and to know more about switching techniques and identify the functions in each layer. [K3]
- CO3 : apply the analog transmission techniques and make use of logical addresses in the network layer and examine Process-to-Process delivery. [K3]
- CO4 : analyze the performance of each layer in the OSI model and protocols such as TCP, UDP. [K4]
- CO5 : evaluate the challenges in building networks and solutions to those issues. [K5]

Course Code 20PCAE11	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	H	-	L	-	-	-	-
CO2	H	M	M	H	M	L	-	M	-	-
CO3	M	H	-	H	H	L	-	M	-	L
CO4	M	H	M	M	H	M	M	M	-	-
CO5	M	-	H	H	H	H	-	H	-	-

Semester I	EMBEDDED SYSTEMS	Hours/Week: 4	
DSEC-1		Credits: 4	
Course Code 20PCAE12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : summarize the key concepts of physical and structural components, instructions, real time operating systems, embedded software development and testing. [K2]
- CO2 : employ the real time operating system, its architecture and its services in managing the responses of external events of 8051 microcontroller. [K3]
- CO3 : adapt 8051 microcontroller architecture, instruction set and hardware feature concept in exploring embedded system software development tools and debugging techniques. [K3]
- CO4 : analyze embedded systems based on microcontroller components, instructions, and real time operating systems. [K4]
- CO5 : evaluate the target embedded system software with respect to microcontroller and RTOS. [K5]

Course Code 20PCAE12	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	M	M	M	H	-	L	-	-	-	-
CO2	M	M	H	M	M	L	-	-	-	-
CO3	M	H	H	-	M	L	-	M	-	-
CO4	-	H	-	M	M	M	M	M	-	-
CO5	-	H	-	M	H	M	M	M	-	-

Semester I	BUSINESS INTELLIGENCE	Hours/Week: 4	
DSEC - 1		Credits: 4	
Course Code 20PCAE13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the fundamentals of business intelligence, user types, CCR Model and its business intelligence Applications. [K2]
- CO2 : relate data mining with Knowledge delivery, efficiency and business intelligence. [K3]
- CO3 : apply various modeling techniques and method to various situations Ad Hoc Querying, role of mathematical models, Logistic and Production models, Emerging Technologies. [K3]
- CO4 : compare data analysis and knowledge delivery stages, Logistic and Production Models, cycle of a business intelligence analysis and Marking model Future Beyond Technology and Emerging Technologies. [K4]
- CO5 : choose appropriate technique, Parameterized Reports and Self-Service Reporting, virtual inputs and outputs, BI Search & Text Analytics, Machine Learning, Predicting the Future, business intelligence system. [K5]

Course Code 20PCAE13	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	M	M	M	H	-	L	-	-	-	-
CO2	M	M	H	M	M	L	-	-	-	-
CO3	M	H	H	-	M	L	-	M	-	-
CO4	-	H	-	M	M	M	M	M	-	-
CO5	-	H	-	M	H	M	M	M	-	-

Semester II	BIG DATA ANALYTICS	Hours/Week: 5	
Core Course-5		Credits: 5	
Course Code 20PCAC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the concepts of Big Data, Hadoop Ecosystem, Data analytics and its role in social media and mobile applications. [K2]
- CO2 : illustrate an application using Map Reduce and HBase and attain the results of applications using Big Data Analytics. [K3]
- CO3 : make use of Hadoop Ecosystem elements to provide Big Data solutions in Text Mining, Sentiment Analysis, Opinion Mining and Mobile Analytics. [K3]
- CO4 : examine the importance of Hadoop framework elements, Social Media Analytics and Mobile Analytical tools and compare Analysis and Reporting of Big Data. [K4]
- CO5 : assess the various Hadoop Ecosystem components, types of Analytics and Reporting, Social Media and Mobile Analytics tools. [K5]

Course Code 20PCAC21	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	-	-	-	H	-	-
CO2	H	M	-	M	-	-	-	-	L	L
CO3	H	M	-	H	H	M	L	M	L	L
CO4	H	-	M	-	M	M	M	L	-	L
CO5	M	-	L	L	H	H	M	-	-	-

Semester II	ADVANCED JAVA PROGRAMMING	Hours/Week: 5	
Core Course-6		Credits: 5	
Course Code 20PCAC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : paraphrase the database concepts using JDBC, web programming concepts including HTTP, Servlets, JSP, JSTL, AJAX and Struts. [K2]
- CO2 : interpret the concepts of HTTP, JSTL, web application development models, components and Model-View-Controller architecture of struts. [K3]
- CO3 : employ basic web programming, JDBC, Servlets, JSP and AJAX in constructing dynamic web applications. [K3]
- CO4 : explore the evolution of web application through JDBC, HTTP, Servlets, JSP, JSTL, AJAX and Struts. [K4]
- CO5 : conclude the database connectivity, basics of web programming, HTTP, JSP, JSTL, AJAX and Struts. [K5]

Course Code 20PCAC22	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	-	M	-	L	L	-	-	-
CO2	H	H	M	-	H	L	L	M	M	-
CO3	M	M	H	M	H	L	L	H	-	-
CO4	M	-	M	-	M	M	M	M	-	-
CO5	H	-	H	H	M	H	M	M	-	L

Semester II	INTERNET OF THINGS	Hours/Week: 5	
Core Course-7		Credits: 4	
Course Code 20PCAC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : discuss the concepts of IoT, Machine-to-Machine connectivity, system management protocols, Raspberry Pi, Python, Hadoop, Physical Servers and cloud. [K2]
- CO2 : Illustrate the applications of IoT, acquire the knowledge of programming of IoT, NETCONF-YANG, M2M. [K3]
- CO3 : make use of basic building blocks of IoT, Hadoop, IoT servers, cloud in realtime applications, examine the case studies of IoT design. [K3]
- CO4 : analyze various domain specific IoT examples implemented with Raspberry Pi, Python, Hadoop using the characteristics of IoT, M2M, NETCONF-YANG, IoT Servers and Cloud. [K4]
- CO5 : evaluate IoT case studies that uses programming languages, data analytical tools with respect to various protocols, levels, building blocks of IoT and M2M. [K5]

Course Code 20PCAC23	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	-	-	-	-	-	-	-
CO2	H	-	H	M	-	-	-	M	-	-
CO3	H	H	-	L	M	-	L	M	-	L
CO4	H	H	M	-	M	H	M	H	M	-
CO5	H	M	M	H	M	L	M	M	H	-

Semester II	DATA ANALYTICS USING PYTHON LAB	Hours/Week: 5	
Core Practical-3		Credits: 3	
Course Code 20PCAC21P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : make use of control structures, mutable and immutable objects, string, built-in and user defined functions, import/export data from/to various sources like excel, CSV, text, SQL and data visualizations. [K3]
- CO2 : write programs using control structures, mutable and immutable objects, string, importing/exporting data from/to various sources like excel, CSV, text, SQL, data visualizations with plots. [K3]
- CO3 : key in the programs, execute the programs with required input and get expected outputs with neat formatting and prepare the record work. [K3]
- CO4 : explain the given program written using python features and answer questions related with that program. [K4]
- CO5 : rewrite program to incorporate modification and justify the desired result. [K5]

Course Code 20PCAC21P	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	L	-	H	-	-
CO2	H	M	-	-	M	M	L	M	L	L
CO3	H	M	L	L	H	L	M	M	-	-
CO4	H	M	M	M	-	M	M	-	-	-
CO5	H	M	H	H	-	H	M	L	-	-

Semester II	ADVANCED JAVA PROGRAMMING LAB	Hours/Week: 5	
Core Practical-4		Credits: 3	
Course Code 20PCAC22P		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : identify the necessary packages, classes and methods to make connection with database in JDBC and pass input parameters to server side in JSP, Servlets, AJAX and struts. [K3]
- CO2 : write programs implementing JDBC, JSP, Servlet, AJAX, struts that use input, output and output formatting in appropriate way. [K3]
- CO3 : key-in the programs and test the programs implemented through JDBC, JSP, Servlets, AJAX and struts to get the expected result. [K3]
- CO4 : explain the programs implemented through JDBC, JSP, Servlets, AJAX and struts and deduce the answers for any queries raised. [K4]
- CO5 : reconstruct the program to adapt the necessary modifications and justification the desired result. [K5]

Course Code 20PCAC22P	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	-	M	-	L	L	-	-	-
CO2	H	H	M	-	H	L	L	M	M	-
CO3	M	M	H	M	H	L	L	M	-	-
CO4	M	-	M	-	M	M	M	M	-	-
CO5	H	-	H	H	M	H	M	M	-	L

Semester II	COMPILER DESIGN	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 20PCAE21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : explain the structure of a compiler, context free grammars, role of lexical analyzer and its design, discuss code optimization and its generation. [K2]
- CO2 : develop regular expressions and finite automata, construct efficient parsers, identify the contents of the symbol table and its data structures. [K3]
- CO3 : construct basic parsing techniques, examine various syntax-directed translation schemes, illustrate how to optimize and effectively generate machine code. [K3]
- CO4 : point out the need of translators, compare parse trees and syntax trees, analyse regular expressions with finite automata, analyse the parsers, examine lexical and syntax analysis, classify various types of errors. [K4]
- CO5 : assess the steps in finite automata and regular expression, interpret the errors and code generation problems, summarize the DAG representation of basic blocks. [K5]

Course Code 20PCAE21	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	L	L	-	-	-	-	-	-
CO2	H	M	-	-	M	L	-	H	-	-
CO3	M	M	M	M	M	L	L	M	L	L
CO4	M	M	M	M	H	M	M	M	L	L
CO5	M	H	H	H	H	H	M	H	L	L

Semester II	PATTERN RECOGNITION	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 20PCAE22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : describe pattern classifier, supervised and unsupervised classification, feature extraction and fuzzy logic. [K2]
- CO2 : make use of various pattern classification and feature extraction algorithms. [K3]
- CO3 : demonstrate pattern classification and feature extraction algorithm on real time problems. [K3]
- CO4 : examine pattern classification, feature extraction and selection algorithms. [K4]
- CO5 : evaluate and prioritize the various classifiers and feature extraction methods. [K5]

Course Code 20PCAE22	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	M	-	L	-	-	-	-
CO2	M	H	M	H	M	L	-	M	-	L
CO3	H	M	M	M	M	L	-	M	-	-
CO4	-	M	-	M	H	H	M	M	-	-
CO5	M	-	-	M	H	M	M	H	-	-

Semester II	CLOUD COMPUTING	Hours/Week: 5	
DSEC-2		Credits: 5	
Course Code 20PCAE23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

- CO1 : understand the fundamentals of cloud computing and its architecture, cloud computing models, cloud infrastructure and platforms. [K2]
- CO2 : Illustrate applications using cloud computing, acquire knowledge on cloud data center, security issues and platforms. [K3]
- CO3 : make use of cloud benefits, cloud computing architecture, models and services. [K3]
- CO4 : examine the factors that affect cloud computing, models of cloud computing and its services. [K4]
- CO5 : evaluate and assess the various cloud models, cloud services and security in cloud environments and cloud computing platforms. [K5]

Course Code 20PCAE23	PO1		PO2		PO3	PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	M	M	M	-	L	-	-	-	-
CO2	M	H	M	H	M	L	-	M	-	L
CO3	H	M	M	-	M	L	-	M	L	-
CO4	-	M	-	M	H	H	M	M	-	-
CO5	M	-	-	M	H	M	M	H	-	-

M.B.A.

Programme Educational Objectives (PEOs)

The students will be able to

1. create excelling management professionals who would apply practical and conceptual knowledge and demonstrate competency in industry or in academics
2. guide in shaping a successful career through employment or entrepreneurship with an intense passion to grow, retaining strong focus on ethics and values
3. inspire in developing concern for issues faced around and efficiently utilize management skills, towards solving innovatively the problems of business, society and nation as a whole.

Key Components of Mission Statement	PEO1	PEO2	PEO3
conducive learning environment that creates professionally competent, innovative and dynamic business leaders.	✓	✓	✓
entrepreneurial culture	-	✓	✓
holistic development of individuals integrating discipline and ethics	✓	✓	✓
research in focus areas of management	✓	-	✓

Programme Specific Outcomes (PSOs)

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each PG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme-specific and it is mandatory that each PO should be mapped to the respective PSO.

On successful completion of M.B.A Programme, the students will be able to

PO 1: *Disciplinary Knowledge*

PSO 1.a. develop a systematic understanding and apply in-depth knowledge in business administration and managerial skills in employment and entrepreneurship development.

PSO 1.b. demonstrate the knowledge of management theories and practices in different domains to pursue research-oriented endeavours.

PO 2: *Communication Skills*

PSO 2: communicate effectively with the business community and with society at large on complex business activities through mail correspondences, reports, presentations, meetings and relevant tools

PO 3: *Scientific Reasoning and Problem Solving*

PSO 3.a. identify, formulate and analyze complex management problems and find innovative solutions

PSO 3.b identify business opportunities, think strategically and integrate various resources effectively for the growth of business.

PO 4: *Critical Thinking and Analytical Reasoning*

PSO 4: critically analyze the factors influencing business environment and reach valid conclusions by seeking business opportunities in real – life situations

PO 5: *Digital Literacy, Self - directed and Lifelong Learning*

PSO 5: learn modern business tools and techniques, including digital learning, to hone their business administration skills and to suit to the demands of the dynamic business environment not only during career, but even before settling down in an appropriate career.

PO 6: *Research Related Skills*

PSO 6: formulate contemporary management research problems and apply appropriate research methodologies for analysis, findings and suggestions.

PO 7: *Co-operation/Team Work and Multi-Cultural Competence*

PSO 7: work in as well as lead diverse teams skillfully and effectively towards the success of business organization

PO 8: *Moral and Ethical Awareness*

PSO 8: understand and apply ethical and moral values in all business practices, decisions and corporate social responsibility activities for societal and environmental well-being.

Semester I	MANAGEMENT THEORY & ORGANISATIONAL BEHAVIOUR	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PBAC11		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the core concepts regarding efficient management and behavior in business organizations. [K2]

CO2: articulate the management principles related to people, work as well as the organization environment to the workforce to preserve efficient planning, organizing, directing and controlling. [K2]

CO3: implement planning, organizing, staffing and controlling at work in order to regulate the individual and group behavior towards the organization development. [K3]

CO4: critically analyze the business structure, group dynamics, organization culture and climate motivation and leadership styles adopted by the organizations. [K4]

CO5: evaluate the management principles and practices adopted in organizations. [K5]

Course Code 20PBAC11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	L	H	M	M	L	-	M	L	-
CO2	H	H	M	H	H	H	M	L	H	L
CO3	M	M	L	H	H	H	H	M	M	H
CO4	H	H	-	H	H	M	L	-	-	L
CO5	M	M	H	M	M	-	-	M	H	L

Semester I	MANAGERIAL ECONOMICS	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PBAC12		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the fundamental concepts of micro and macroeconomics that influence business. [K2]

CO2: Illustrate how business decisions are impacted by applications of economic concepts and theories. [K3]

CO3: interpret the behaviour of revenue, utility, production, cost, pricing, the market structures and macroeconomic factors in different business situations. [K3]

CO4: analyse how business decisions are shaped by micro and macroeconomic factors. [K4]

CO5: evaluate the contemporary microeconomic factors and macroeconomic developments influencing business. [K5]

Course Code 20PBAC12	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO 2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	-	-	-	-	M	L	-	-
CO2	H	H	M	M	M	L	M	L	M	-
CO3	H	H	M	H	H	H	H	M	M	L
CO4	H	H	M	H	H	H	M	H	M	L
CO5	H	H	-	H	H	H	H	H	-	-

Semester I	BUSINESS STATISTICS - I	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PBAC13		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concepts used in business statistical analysis. [K2]

CO2: solve the various statistical problems using the appropriate statistical tool. [K3]

CO3: analyse the statistical problems using appropriate statistical tools. [K4]

CO4: recommend solutions to various statistical problems using statistical tools. [K4]

CO5: formulate hypotheses and justify using various parametric and non parametric tests. [K5]

Course Code 20PBAC13	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	L	H	H	H	H	-	-	-
CO2	H	H	L	H	H	H	H	-	-	-
CO3	H	H	-	H	H	H	H	-	-	-
CO4	H	H	L	H	H	H	H	-	-	-
CO5	H	H	L	H	H	H	H	-	-	-

Semester I	BUSINESS ENVIRONMENT	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PBAC14		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: Identify the aspects of Business environment with respect to Indian economy. [K2]

CO2: relate various environmental factors to business situations. [K2]

CO3: outline the role and impact of political and economic environment on business. [K3]

CO4: examine the policies, regulations and international environment. [K4]

CO5: Evaluate the factors influencing business environment. [K5]

Course Code 20PBAC14	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	L	H	H	M	L	M	H
CO2	H	H	H	M	H	H	H	M	M	H
CO3	H	M	H	M	H	M	M	M	M	H
CO4	H	H	H	H	M	H	H	H	M	H
CO5	H	M	H	M	H	H	M	L	H	H

Semester I	COST & MANAGEMENT ACCOUNTING	Hours/Week: 6	
Core Course		Credits: 4	
Course Code 20PBAC15		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: infer the basic concepts in financial accounting, management accounting and Cost accounting. [K2]

CO2: prepare budgets, final accounts and apply cost and management accounting tools to enable better decision making. [K3]

CO3: interpret and analyse the various accounts and take decisions using financial and management accounting. [K4]

CO4: compare various alternatives in management and cost accounts. [K4]

CO5: evaluate financial position of the firm and management and costing decisions taken by the firm. [K5]

Course Code 20PBAC15	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	L	H	H	M	L	H	H
CO2	H	H	H	M	H	H	H	M	H	H
CO3	H	L	H	L	H	M	L	H	L	M
CO4	H	H	H	H	M	H	H	H	M	H
CO5	H	L	H	M	H	H	M	L	H	M

Semester I	VIVA- VOCE	Hours/Week: -	
Viva-Voce 1		Credits: 1	
Course Code 20PBAV11		Internal -	External 100

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the Management and business concepts. [K2]

CO2: apply the management theories to real time business situations. [K3]

CO3: illustrate various examples of business cases for management concepts. [K3]

CO4: analyse the opportunities and challenges that exist in the business environment. [K4]

CO5: evaluate the pros and cons of possible decisions and choose the feasible one for the given situations. [K5]

Course Code 20PBAV11	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	L		L	-	-
CO2	H	H	H	M	M	-	-	-	-	-
CO3	H	H	H	M	M	-	L	-	-	-
CO4	H	H	H	M	M	L	M	L	-	-
CO5	H	H	H	M	M	-	-	-	-	-

Semester II	ENTREPRENEURIAL DEVELOPMENT	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20PBAC21		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: compare their personal characteristics and interests to that of the “successful” entrepreneur. [K2]

CO2: discover the business opportunities available and input requirements for startup under rural, social, global and women entrepreneurship. [K3]

CO3: analyze the significance, problems faced and remedies to overcome problems of MSME, rural, social & women entrepreneurs. [K4]

CO4: assess the different modes and types of international and domestic Entrepreneurship. [K5]

CO5: select a business plan and assess sources of finance & support for small business and entrepreneurs. [K5]

Course Code 20PBAC21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	M	-	M	L	L
CO2	M	M	L	H	H	H	-	M	L	-
CO3	H	H	M	H	H	H	-	H	-	L
CO4	H	H	L	M	M	M	-	H	-	-
CO5	H	H	M	H	H	H	M	H	L	-

Semester II	MARKETING MANAGEMENT	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20PBAC22		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the concepts of marketing management. [K2]

CO2: discover the strategies, process, and approaches functions, classifications and levels of marketing management and maintain a good relationship with customers. [K3]

CO3: classify the elements of Product, Price, place and promotional mix in the business. [K4]

CO4: analyze the various types of branding, pricing, retailers, wholesalers and advertising media in marketing management. [K4]

CO5: decide a suitable pricing with an attractive packaging and choose from recent marketing trends for products /services. [K5]

Course Code 20PBAC22	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1 a	PSO 1 b	PSO2	PSO 3 a	PSO 3 b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	M	H	M	L	L
CO2	M	M	L	H	H	H	M	M	L	H
CO3	H	H	M	H	H	H	H	H	H	H
CO4	H	H	L	M	M	M	H	H	H	M
CO5	H	H	M	H	H	H	H	H	M	M

Semester II	FINANCIAL MANAGEMENT	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20PBAC23		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the various functional areas of financial management. [K2]

CO2: apply theories, techniques and methods to find solutions for financial problems in the areas of capital, working capital, dividend, etc. [K3]

CO3: compare and illustrate the various methods used in problems relating to capital structure, leverage, cost of capital, capital budgeting and working capital. [K4]

CO4: analyse the various factors determining capital structure, sources of finance, capital budgeting, working capital and dividend policy. [K4]

CO5: evaluate the various approaches and techniques to enable better decision making in various areas of financial management. [K5]

Course Code 20PBAC23	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1 a	PSO 1 b	PSO2	PSO 3 a	PSO 3 b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	M	M	H	-	-	-	-
CO2	H	H	L	M	H	H	-	-	-	-
CO3	H	H	-	L	H	M	M	M	M	M
CO4	H	H	-	H	H	H	M	M	M	M
CO5	H	H	M	M	H	H	M	H	H	H

Semester II	OPERATIONS MANAGEMENT	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20PBAC24		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: describe the concepts of operations management. [K2]

CO2: discover the fundamentals of operations management. [K3]

CO3: examine the prevailing approaches in handling operations in an organization. [K4]

CO4: analyse the challenges and decisions in operations management. [K4]

CO5: recommend strategies for efficient operations management. [K5]

Course Code 20PBAC24	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.b	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	M	H	H	H	M	M	L	L
CO2	H	H	M	H	H	H	M	M	L	L
CO3	H	H	M	H	H	H	M	M	L	L
CO4	H	H	M	H	H	H	M	M	L	L
CO5	H	H	M	H	H	H	M	M	L	L

Semester II	HUMAN RESOURCE MANAGEMENT	Hours/Week: 4	
Core Course		Credits: 4	
Course Code 20PBAC25		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the features of the domestic and international labor market to ensure fair and stable human resource practices and to maintain good industrial relations in the dynamic and diversified work environment. [K2]

CO2: procure, train and retain the most suitable, talented and committed workforce in organizations with appropriate recruitment, training and compensation practices respectively to ensure sustainability of the business. [K3]

CO3: implement and communicate the provisions of labour laws related to health, security and social welfare of employees in organizations to secure fair and stress free working conditions. [K3]

CO4: analyze and identify the issues related to recruitment, selection, performance appraisal, training and development, reward system and settlement of disputes to facilitate competitive human resource management practices in organizations. [K4]

CO5: audit and measure the performance of the workforce in the organizations scientifically and systematically by adopting suitable techniques to ensure quality work life and to maintain industrial harmony. [K5]

Course Code 20PBAC25	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.b	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	-	H	M	M	H	L	-	H	M
CO2	H	L	M	H	L	M	H	-	H	H
CO3	H	-	H	L	-	-	L	-	H	H
CO4	H	M	-	H	M	H	M	H	-	M
CO5	M	M	L	H	L	H	M	H	M	H

Semester II	BUSINESS STATISTICS - II & OPERATIONS RESEARCH	Hours/Week: 5	
Core Course		Credits: 4	
Course Code 20PBAC26		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain the tools to support business intelligence and data analysis needs of modern organisations. [K2]

CO2: describe the key terminology, concepts, tools and techniques used in business administration. [K2]

CO3: develop practical computational skills and problem-solving capabilities utilising appropriate analytical approaches to a given problem. [K3]

CO4: analyze the numerical information for decision-making in business. [K4]

CO5: evaluate the legal, social and economic environments of business using techniques of Statistics and Operations Research. [K5]

Course Code 20PBAC26	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.b	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	M	M	M	L	L
CO2	H	H	H	M	M	L	M	L	-	-
CO3	H	H	H	M	M	M	M	M	M	-
CO4	M	M	-	L	L	H	H	M	L	M
CO5	-	-	-	L	L	-	-	H	H	H

Semester II	SEMINAR ON MANAGERIAL SKILLS- I	Hours/Week: 1	
Skill Enhancement Course -1		Credits:1	
Course Code 20PBAS21		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: explain contemporary business issues and recent trends in Business. [K2]

CO2: apply academic knowledge of management concepts to real time business cases and offer recommendations. [K3]

CO3: analyze and present a research or a magazine article published in a reputed journal. [K4]

CO4: evaluate business cases and get insights. [K5]

CO5: appraise on industry, company, personality, startup, product and management concept. [K5]

Course Code 20PBAS21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	M	M	M	M	-
CO2	H	H	M	M	M	M	M	M	M	-
CO3	H	H	M	H	H	H	M	H	H	-
CO4	H	H	M	H	H	H	L	H	H	L
CO5	H	H	H	H	H	H	L	H	H	L

Semester II	Viva-Voce	Hours/Week: -	
Viva-Voce 1		Credits: 1	
Course Code 20PBAV21		Internal -	External 100

COURSE OUTCOMES

On completion of the course, the students will be able to

CO1: understand the Management and business concepts. [K2]

CO2: apply the management theories to real time business situations. [K3]

CO3: illustrate various examples of business cases for management concepts. [K3]

CO4: analyse the opportunities and challenges that exist in the business environment. [K4]

CO5: evaluate the pros and cons of possible decisions and choose the feasible one for the given situations. [K5]

Course Code 20PBAV21	PO1		PO2	PO3		PO4	PO5	PO6	PO7	PO8
	PSO 1.a	PSO 1.b	PSO2	PSO 3.a	PSO 3.b	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	H	H	H	M	M	L		L	-	-
CO2	H	H	H	M	M	-	-	-	-	-
CO3	H	H	H	M	M	-	L	-	-	-
CO4	H	H	H	M	M	L	M	L	-	-
CO5	H	H	H	M	M	-	-	-	-	-