

COURSE OUTCOME – 2021-2024

Language & Culture

SEMESTER - 1
Part – 1 nghJj;jkpo; jhs; - 1 ,f;fhy ,yf;fpak; (nra;As;> ,yf;fzk;> ,yf;fpa tuyhW> ciueil> rpWfij)

CO.NO	,g;ghlj;jpl;lk; khztpaUf;F	mwpTrhh; kjpg;gPL
CO-1	ngz; rhh;e;j tpLjy> nghJikr; rpe;jid czh;itAk; tsh;f;fpwJ	tsh;r;rp
CO-2	,aw;ifiag; NgZjw;Fk; tho;tpd; tsh;r;rp epiyia Nkk;gLj;jpf; nfhs;Sjw;Fk; cjTfpwJ.	eilKiwg;gLj;Jjy;
CO-3	rka ey;ypzf;fk;> xw;Wik czh;T> ,iw ek;gpf;if ,tw;iw cUthf;FfpwJ.	cUthf;fk;
CO-4	nkhopiag; gpiopd;wp NgrTk; vOjTk; cjTfpwJ.	Ghpjy; jpwd; Nkk;ghL
CO-5	jdpkdpj tho;f;if; rpf;fy;fs;> rKjhag; gpur;ridfs; vjph;nfhs;Sk; jpwid vLj;Jiuf;fpwJ.	eilKiwg;gLj;Jjy;
CO-6	Nghl;bj; Njh;TfSf;Fg; gad;gLk; tifapy; gilg;ghf;fj; jpwid tsh;f;f cjTfpwJ.	gilg;ghw;wy; jpwd; Nkk;ghL

SEMESTER - II
Part -1 nghJj;jkpo; - jhs; 2 rka ,yf;fpaq;fSk; ePjp ,yf;fpaq;fSk; (nra;As;> ,yf;fzk;> ,yf;fpa tuyhW> ciueil> tho;f;if tuyhW)

Co.No.	,g;ghlj;jpl;lk; khztpaUf;F	mwpTrhh; kjpg;gPL
CO-1	,iw Mw;wiy czh;e;Jnfhs;s cjTfpwJ	kjpg;gPL
CO-2	ey;y ez;gh;fisAk; ey;y kdpjh;fisak; ,dk; fz;Lnfh;s;STk;> md;G> ,uf;fk;> ew;nrhy;> ew;nray; Nghd;w ew;gz;GfNshL thoTk; top tFf;fpwJ.	eilKiwg;gLj;Jjy;
CO-3	kdpj Nea gz;GfNshL tho;e;j rhd;Nwhhp; mDgtq;fisg; ngw;Wf;nfhs;s cjTfpwJ	eilKiwg;gLj;Jjy;
CO-4	jdpkdpj tho;f;if; rpf;fy;fisAk; gpur;ridfisAk; vjph;nfhs;Sk; Mw;wiy cUthf;FfpwJ.	eilKiwg;gLj;Jjy;> jpwd; Nkk;ghL

CO-5	,iwtd; Kd; midtUk; rkk; vd;w rpe;jidia cUthf;FfpwJ.	kjpg;gPL
CO-6	Nghl;bj;Njh;TfSf;Fg; gad;gLk; tifapy; gilg;ghf;fj; jpwid tsh;f;f cjTfpwJ.	gilg;ghw;wy;

SEMESTER – III
Part-I nghJj;jkpo; - jhs; 3 fhg;gpa ,yf;fpaq;fSk; rpw;wpyf;fpaq;fSk; (nra;As;> ,yf;fzk;> ,yf;fpa tuyhW> ciueil> Gjpdk;>)

CO.No.	,g;ghlj;jpl;lk; khztpaUf;F	mwpTrhh; kjpg;gPL
CO-1	ngz;fspd; rl;lq;fs; chpikfs;> Ntiytha;g;G gw;wpa tpguq;fis mwp;e;J nfhs;s cjTfpwJ.	eilKiwg;gLj;jy;
CO-2	murpay; #o;r;rp> ,dk;> rhjp Fwpj;j ghFghL ,tw;wpypUe;J tpLjiy ngWk; toptiffisf; fw;Wf;nfhLf;fpwJ.	eilKiwg;gLj;jy;
CO-3	,yf;fpa mwptpid tsh;f;f> fhg;gpar; Rit czh;e;J Ritf;f tha;g;gspf;fpwJ.	eilKiwg;gLj;jy;
CO-4	jdpkdpj tho;f;ifr; rpf;fy;fis vjpHnfhs;Sk; epiyia cUthf;FfpwJ	eilKiwg;gLj;jy;
CO-5	,g;gFjpapy; thOk; mbj;jl;L kf;fspd; tho;T epiyia mwpe;J nfhs;s cjTfpwJ. ngz;fs; ePjpf;Fg; NghuhLk; czHit tsh;f;f;fpwJ.	eilKiwg;gLj;jy;> jpwd; Nkk;ghL
CO-6	Nghl;bj; NjHTfSf;Fg; gad;gLk; tifapy; gilg;ghf;fj; jpwid tsHf;f cjTfpwJ.	gilg;ghw;wy;>jpwd; Nkk;ghL

SEMESTER – IV**Part-1 nghJj;jkpo; - jhs; 4 rq;f ,yf;fpak;
(nra;As;> ,yf;fzk;> ,yf;fpa tuyhW> ciueil> ehlfk;)**

CO.No.	,g;ghlj;jpl;lk; khztpaUf;F	mwpTrhh; kjpg;gPL
CO-1	mDgt mwpit tsh;f;fpwJ.	eilKiwg;gLj;jy;
CO-2	goe;jkpoh; tho;tpay; Kiwfis fw;W gadila cjTfpwJ.	eilKiwg;gLj;jy;
CO-3	kdpjNeak;> ,iwek;gpf;if ,tw;iw cUthf;FfpwJ.	cUthf;fk;
CO-4	jdpkdpj tho;f;if; rpf;fy;fis vjpHnfhs;Sk; epiyia cUthf;FfpwJ	eilKiwg;gLj;jy;> cUthf;fk;
CO-5	rKjha gpur;rpidfis vjpHnfhs;Sk; jpwk; fpilf;fpwJ.	eilKiwg;gLj;jy;> jpwd; Nkk;ghL
CO-6	Nghl;bj; NjHTfSf;Fg; gad;gLk; tifapy; gilg;ghf;fj; jpwid tsHf;f cjTfpwJ.	gilg;ghw;wy;> jpwd; Nkk;ghL

SEMESTER – I
PART – I French Paper – I Introductory French Course

CO	At the end of this course, the students will be able to	CL
1.	greet and introduce oneself and others	Kn, Ap
2.	fill an identity form	Ap, Cr
3.	ask, give and understand directions	Kn, Ap
4.	frame a questionnaire	Cr
5.	place order in a restaurant	Ap, Cr
6.	tell and understand opening and closing time	Kn
7.	express likes and dislikes	Ap
8.	describe an object and to say what it serves for	Kn, Un
9.	ask and say a price of a product	Ap
10.	understand the French and francophonic lifestyle	Kn

SEMESTER – II
PART – I French Paper – II Intermediate French Course

CO	At the end of this course, the students will be able to	CL
1.	talk about her activities, hobbies	Kn, Ap
2.	ask and say time	Ap, Cr
3.	fix, accept or refuse a meeting	Kn, Ap, Cr

4.	talk about her family and describe a character	Kn, Un
5.	describe and give information about a lodging	Ap
6.	express her preferences	Ap, Un
7.	write a formal mail and a postcard	Cr, Ap
8.	express emotions and surprise	Ap
9.	get a gist of the French literature	Kn, Un

SEMESTER – I
PART – I French Paper – I Preliminary French and Commercial terms

CO	At the end of this course, the students will be able to	CL
1.	read and understand French	Un, Kn
2.	greet and introduce oneself and others	Kn, Ap
3.	ask and say the date and day	Kn, Ap
4.	ask and reply politely	Ap, Cr
5.	describe someone's characteristics	Un, Ap
6.	understand the French and francophonic lifestyle	Kn, Un
7.	understand the commercial and computing terms and use it for translation	Un, Ap, Cr
8.	strengthen her base in French grammar	Kn, Un

SEMESTER – II
PART – I French Paper – II Progressive French and Commercial correspondence

CO	At the end of this course, the students will be able to	CL
1.	talk about hobbies and routine	Kn
2.	express her taste and preferences	Kn
3.	place an order in a restaurant	Un, Ap

4.	invite and reply to an invitation	Ap, Cr
5.	describe an outfit	Kn, Ap
6.	write a friendly message	Ap, Cr
7.	get a gist of the French literature	Ap, Un
8.	write formal business letters	Ap, Cr

SEMESTER – III
PART – I French Paper – III Advanced French Language

CO	At the end of this course, the students will be able to	CL
1.	give an explanation	Ap
2.	ask and say height and weight	Ap
3.	understand student exchange programme and professional world	Kn, Un, Ap
4.	express a goal and a skill	Ap
5.	understand a comic	Un
6.	describe a lifestyle	Kn, Ap
7.	talk about plans and difficulties	Ap
8.	enjoy, appreciate and understand the lyrics of the French songs	An
9.	write a CV	Cr
10.	comprehend French literature	Kn

SEMESTER – IV
PART – I French Paper – IV French Course and Literature

CO	At the end of this course, the students will be able to	CL
1.	comprehend the French literary background	Un, An
2.	imbibe the basic grammatical structures of the language	Un, An

3.	inculcate the values imparted through the literary texts	Un, An
4.	appreciate simple literary texts	An, Ap
5.	acquire literary knowledge and enhance aesthetic perception	An, Ap
6.	explore a literary text, with the perspective of analyzing the content and manner of writing	An, Ap
7.	reflect upon the author's ideas and transform her own personality	Ap, Cr
8.	discover, interrogate and reflect on the humanistic value	Cr
9.	understand the history of France	Un

SEMESTER-I	
Part II General English	Poetry, Prose, Extensive Reading and Communicative English-I

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO- 1	understand and extend their listening and writing skills.	1	Un
CO- 2	apply and incorporate basic grammar and mechanics in writing.	3	Ap
CO- 3	understand literary texts in its socio-cultural contexts	2, 4	Un, Ap
CO- 4	communicate in English with confidence for employability.	3	Ap
CO- 5	appreciate and imbibe ethical and moral values through the study of the literary pieces.	5	Ap, Ev
CO- 6	construct simple sentences and short paragraphs in response to reading and writing.	8	Cr

SEMESTER-II**Part II General English Poetry, Prose, Extensive Reading and Communicative English –II**

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	enhance their vocabulary through the texts.	1	Un
CO- 2	demonstrate effective communication skills.	3	Un, Ap
CO- 3	comprehend passages and interpret on their own.	1,2	Un, Ap
CO- 4	construct paragraphs and essays, make notes and sum up passages.	8	An
CO- 5	analyse literary pieces and inculcate ethical values.	5	An
CO- 6	evaluate how language and literature are closely related to life.	5,6	Cr

SEMESTER – III

Part II English Poetry, Prose, Extensive Reading and Communicative English - III

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the language and literary components of texts	1	Un
CO-2	develop interest and appreciate literary texts	2	Un, Ev
CO-3	comprehend aspects of grammar and its application	6	Un
CO-4	evaluate perspectives and human values for life	4, 5	Ev
CO-5	adopt appropriate technique to enhance communication and writing	3, 7	Ap, Cr
CO-6	enrich vocabulary and develop skills of formal writing and communication	7, 8	Ap, Cr

SEMESTER – IV

Part II English Poetry, Prose, Extensive Reading and Communicative English - IV

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
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CO-1	comprehend better the language and literary components of texts	1	Un
CO-2	gain deeper insight into literary experience and expressions of writers	2	Un
CO-3	be competent in conversational and functional English	3	Ap
CO-4	employ nuances of verbal and non-verbal techniques in communication	5, 6	Ap
CO-5	adopt right perspectives of human values for life	4, 5	Ap
CO-6	face interviews and competitive exams with confidence	7	Ap

SEMESTER – I	
Core – I	Age of Renaissance (1500 to 1660)

Co. No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO-1	understand literary texts in their social, political, historical and cultural contexts.	2	Un
CO-2	analyse the structure and rhyme scheme of the sonnets.	6	Un
CO-3	appreciate and analyse the structure and content of any literary piece.	6	An
CO-4	judge the aesthetic and ethical values of Renaissance.	4,6	Ev, Ap
CO-5	perceive the distinct qualities of the writers of the Age of Renaissance.	4	Ev
CO-6	practise writing as a process of motivated inquiry engaging other writers' ideas.	7	Cr

SEMESTER – I	
Core II	English Grammar and Usage

CO No.	Upon completion of this course students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic functions of the different parts of speech.	2	Un
CO-2	analyse the usage of various tenses.	6	An
CO-3	employ different kinds of sentences in the oral and written communication.	1,7	Un, Ap
CO-4	apply degrees of comparison in the appropriate context.	3	Ap
CO-5	synthesise the structure of the sentence.	1	Ev
CO-6	construct well-organized essays with appropriate usage of grammar and vocabulary with an effective introduction and conclusion, supporting the main topic.	7,8	Cr

SEMESTER – I	
Allied – I	Social History of England

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	develop an awareness of the social, historical, religious and cultural politics of England.	1,4	Un
CO - 2	understand the social changes within the country and its relationship with other nations.	4	Un
CO - 3	analyse the causes and consequences of civil war and American independence	5	An
CO - 4	analyse the major trends that shaped the English society and identify the key themes which encapsulate the period and review the reforms and developments of education in the modern era.	5	An
CO - 5	evaluate the invasion and expansion of the British colonies all over the world, across culture	2	Ev
CO - 6	evaluate the effects of the revolutions and their impacts on society	1	Ev

SEMESTER – I
Skill Enhancement Course – I Professional English – I

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	refine written and verbal communication skills.	1	Un
CO-2	speak confidently in any professional environment.	1,3	Ap
CO-3	face interviews with confidence.	1,3	Ap
CO- 4	analyse and comprehend unfamiliar texts.	7	Ap
CO-5	develop strategic competence through efficient listening.	3,7	Ap, Cr
CO-6	construct error free sentences for content writing.	3,7	Ap, Cr

SEMESTER – II	
Core – III	Age of Restoration and Transition (1660 – 1770)

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	remember the historical perspective and the representative writers of the age.	2	Re
CO-2	acquire knowledge of the social and political background.	2	Un
CO- 3	understand the various movements of the age.	2	Un
CO- 4	understand the various aspects of literary genres.	2,6	Un
CO- 5	analyse the distinctive features of the age.	6	An
CO-6	analyse the cultural legacy of the age.	6	An

SEMESTER - II	
Core - IV	Romantic Age (1770-1830)

CO.No	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	recognise the development of literature and culture of the age.	2, 6	Un, An
CO-2	understand the school of Romanticism and analyse the significant works of the age.	2, 5	Un, An
CO-3	gain knowledge about the social and political background of the age.	4, 6	Un, An
CO-4	practice the ethical values gained from the works of art.	8	Ap
CO- 5	develop introspection into the literary and artistic movement of the age	1	Un
CO-6	identify the writers' thoughts and points of view and reflect from one's own perspective	5	Ev

SEMESTER – II	
Allied – II	Literary Forms and Terms

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	comprehend the dimensions of literary forms.	2	Un
CO - 2	distinguish and differentiate different literary terms and apply wherever necessary.	1	Un
CO - 3	recognise how form and structure shape the meaning of a text.	5	Ap
CO - 4	identify, analyse and interpret the different genres of literature.	4	An
CO - 5	evaluate one's own perspective in relation to various forms of literature.	6	Ev
CO-6	formulate literary creations of their own and emerge as educators.	1	Ev

SEMESTER – II**Skill Enhancement Course – II Professional English - II**

CO. No	Upon completion of this course, students will be able to	PSOs addressed	Cognitive Level
CO-1	understand the theoretical and practical components of professional English and soft skills.	1, 3	Un, An
CO-2	write advertisements, create web pages, business e-mail / video logs, etc.	3, 7	Ap, Cr
CO-3	use power point and make oral presentations.	7	Cr
CO-4	write minutes and reports.	7	Cr
CO-5	build a strong professional vocabulary which can be effectively used in different platforms.	7	Cr
CO-6	write creative and innovative script for short films, blogs, flyers, brochures and posters.	8	Cr

SEMESTER – III**Core V****Victorian Age (1837-1901)**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	have a comprehensive knowledge of the principles of Victorian society characterized by class based society with its gender and race	4	Un
CO-2	comprehend, categorize and distinguish the representative writers of the age along with the working class cultures	4	An
CO-3	review a work with its relationship to the Victorian scientific development, its continued aggressive expansion and its significant migration	4	Ap
CO-4	perceive the unique qualities of the author studied and analyse the text with their socio-economic and literary background	6	Ap
CO-5	evaluate the ethical values in the literary texts to evolve as better citizen	5	Ev
CO-6	create an aesthetic taste for literary pieces and emerge as educator	7	Cr

SEMESTER – III**Allied III****History of English Literature - I**

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO 1	identify and interpret the didactic purpose in literature.	8	Re, Un
CO 2	understand the phases of evolution of English literature and classify English literatures according to their periods	2	Un, Ap
CO 3	comprehend the characteristic features of the age and analyse texts in their cultural and historical contexts	4	An
CO 4	categorise the major literary movements and genres	4	An
CO 5	analyze the distinct literary contribution of England	2	An
CO 6	compare, review and estimate literary texts over the periods.	6	An

SEMESTER III**Core Skill Based****Skills for Career Advancement**

CO No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	acquire communicative ability and relate with confidence	1	Un
CO-2	write and correspond in English proficiently and meet the requirements for career	3,7	Ap,Cr
CO-3	respond and behave appropriately in diverse situations	5	Ap
CO-4	become original or inventive and apply lateral thinking	8	Cr
CO-5	develop the ability of emotional and stress management	8	Ap
CO-6	work constructively as a team and assume leadership skills	3,7	Ap,Cr

SEMESTER - III	
Non - Major Elective	Functional English – I

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the fundamentals of English Grammar.	1	Un
CO-2	illustrate simple transcription of words and pronounce them in correct accent.	2	Un
CO-3	understand the basics of phonetics.	1	Un
CO-4	relate vocabulary , use them appropriately and apply the LSRW skills effectively in regular usage.	1	Un, Ap
CO-5	converse and to communicate effectively in English.	7	Ap
CO-6	develop the ability to read and write in English .	1	Cr

SEMESTER – III**Self Study/MOOC/Internship (Compulsory) Myth in Literature**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	define what sets apart a hero from the rest of society.	2	Re
CO- 2	identify the characteristics of myths and folklore	2	Un
CO-3	understand the use of myths and legends to establish guidelines for living.	2,5	Un, Ap
CO-4	analyse the cultural and historical effects of mythological warriors	4	An
CO-5	relate the cultural effects of mythological systems.	4	Ev
CO-6	interpret moral lessons and historical events in literature	6	Un

SEMESTER – IV	
Core – VI	Twentieth Century British Literature

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the thematic concerns of 20 th C British Literature.	2	Un
CO-2	recognize the standpoints of different British writers of the age.	2	Un
CO-3	apply the moral values voiced in the literary texts.	5,8	Ap
CO-4	analyze and appreciate the literary features of the genres and develop an aesthetic sense and appreciation of literary texts.	3,6	An
CO-5	analyze the social milieu of twentieth century England through the literary texts.	4	Ev
CO-6	evaluate the contributions and perceptions of the 20 th C British writers.	4	Ev

SEMESTER – IV	
Allied–IV	History of English Literature –II

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO-1	identify the important literary figures and literary works of the period	2	Re
CO-2	understand the chronologically arranged collection of biographical sketches	2	Un
CO-3	prepare themselves for UGC NET/SET competitive examinations	7	Un, An
CO-4	analyze the dominant literary and artistic movements in literature.	2	An
CO-5	examine the issues discussed in the texts in the socio-historic and cultural contexts.	4	An
CO-6	demonstrate an awareness of the social, historical and cultural elements of the centuries.	6	An, Ev

SEMESTER IV	
Core Skill Based	Media Writing

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand the ethics and techniques in media writing.	2	Un
CO – 2	update the recent trends in media writing	3	Un
CO – 3	distinguish the writing style for print media from broadcast media	3, 7	An, Ap
CO – 4	develop media ethics and contribute to social transformation	3, 5, 8	Ap, Cr
CO – 5	acquire the ability of editing, reporting and writing for media	2, 7	An, Cr
CO – 6	develop the employability skills	2	Cr

SEMESTER – IV	
Non - Major Elective	Functional English – II

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic mechanics of writing in English.	1	Un
CO-2	relate and enrich their vocabulary.	1	Un, Ap
CO-3	develop proficiency in speaking and writing.	1	Cr
CO-4	organize ideas coherently while speaking or writing and engage themselves in simple conversation effectively.	7	An
CO-5	formulate the unique qualities of professional rhetoric.	7	Cr
CO-6	apply the acquired proficiency in formal communication	7	Ap

SEMESTER IV

Self-Study/Online Course/Internship (Optional) World Classic Fiction

CO No.	Upon the completion of the course, the students will be able to:	PSO addressed	CL
CO -1	engage themselves in close reading of literary texts.	1	An
CO -2	understand the socio-cultural dimensions through fiction.	2	Ap
CO -3	analyse the wide range of themes, concerns and literary techniques.	4	An
CO -4	analyze characters in the light of their cultural and historical contexts.	2	Ev
CO -5	comprehend the creative aspects of significant world classic writers.	6	Un
CO -6	evaluate the aesthetic and moral responses in texts.	3	Ev

SEMESTER V	
Core VII (Common Core)	Women Empowerment in India

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	illustrate Indian women's historical, socio economic and political experiences.	3	Ap
CO- 2	classify the nature and growth of women's movement in the Modern Age.	2	Re
CO- 3	analyse women's participation in politics from a feminist perspective.	4	An
CO- 4	appraise the theoretical outlook on feminism from India and abroad.	5	Ev
CO- 5	evaluate various emerging gender issues in contemporary India.	5,7	Ev
CO- 6	assess the Indian feminist traditions that have arisen out of the heterogeneity of Indian experience.	7	Ev

SEMESTER – V**Core VIII****Essentials in Shakespearean Writings**

CO No.	Upon successful completion of this course students will be able to:	PSO addressed	CL
CO-1	acquaint with Shakespeare's dramatic and poetic art.	1	Un
CO-2	know the depth of the art of characterization and development of plot.	1	Un
CO-3	understand the components of Shakespearean drama and theatre.	4	Un
CO-4	analyze Shakespeare's works in the modern context.	7	An
CO-5	identify the distinctive features and evaluate the universal appeal of Shakespeare's works.	1, 7	Ev
CO-6	dramatize Shakespearean theatrical art.	3	Cr

SEMESTER V**Core IX****American Literature**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the social, cultural and historical milieu of texts.	2	Un
CO-2	interpret the psychological perspective of American Literature.	4	Ap
CO-3	identify and interpret the representative works of American writers.	4	An
CO-4	appraise the themes and literary devices employed by the major writers.	6	Ev
CO-5	review the ethical dimensions of American literature in the universal context.	8	Ev
CO-6	formulate imagination to a wider range of voices across cultures.	2	Cr

SEMESTER V	
Core X	Literary Criticism

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the evolution of the history and principles of literary criticism through the ages and view literary texts in relation to their age and critical perception.	1, 4	Un, An
CO-2	understand how critical reasoning enhances the study of literary art.	4	Un
CO-3	compare and analyze significant critics and their view points.	2	An
CO-4	apply the different approaches of criticism in analyzing texts	1	Ap
CO-5	examine how literary criticism develops tastes and shapes literature and culture across centuries.	8	Ev
CO-6	develop analytical and critical skills with which literature can be appreciated.	7	Cr

SEMESTER-V	
Core Elective	Phonetics for English Proficiency

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss in detail the production and articulation of Speech Sounds.	1, 2	Un
CO-2	understand correct Stress and Intonation pattern.	1	Un
CO-3	understand and analyze variations in speech sounds.	1	Un, An
CO-4	acquire good LSRW skills to foster effective oral and written communication to compete in the global market.	3	Ap
CO-5	better their accentuation and effective communication to emerge as media personnel and soft skill trainers.	7	Ap, Ev
CO-6	articulate standard pronunciation of English words.	3	Ap, Cr

SEMESTER-V	
Core Elective	Practical Criticism

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the significant deployment of content and technique used by writers	2	Un
CO-2	analyze the rhetorical pattern, themes and style.	2	An
CO-3	improve the skill of analyzing the language used in prose and poetry.	3	An
CO-4	analyse the devices and techniques used in drama	6	An
CO-5	develop the ability to apply literary techniques to analyze literary texts.	5	Ev
CO-6	critically examine literature with the help of literary forms and terms.	6	Ev

Semester – V

Self-Study/Online Course/Internship (Optional) Science Fiction

CO No.	Upon completion of this course students will be able to:	PSO addressed	CL
CO-1	understand how science and technology influence the world of Literature	2	Un
CO-2	have a critical perspective of the future scene of the world	3	An
CO-3	interpret the stylistic features of science fiction writings	6	Ev
CO-4	apply the caution stated in the studies to safeguard interests of the humans and the earth	5	Ap
CO-5	compare and contrast the advantages and disadvantage of science in its global context	3	Ap
CO-6	seek solution in humanism as an ultimatum to resolve technological and scientific issues	5	Ap,Ev,Cr

SEMESTER –VI**Core XI****Indian Writing in English**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the major Indian writers in English.	2	Un
CO-2	redefine the meaning of 'Indianness' through representative works.	3, 4	Un, Ap
CO-3	interpret and analyse the nuances of literature pertaining to Indian culture.	1, 2	Un, An
CO-4	understand the issues in the contemporary Indian society and to become familiar with the usage of Indian English	3,8, 10	Un, An
CO-5	evaluate a writer's purpose and perspective.	5, 7	Ev, An
CO-6	identify the socio-political and economic realities of human life.	4	An, Ev

SEMESTER VI	
Core XII	Women's Writing

CO No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO 1	understand the role of women in Literature	2	Un
CO 2	interpret women's writings across cultures.	6, 7	An
CO 3	analyse gender perspectives in writings	4	An
CO 4	evaluate the artistic and intellectual contributions of women to literature.	2, 4	Ev
CO 5	identify the marginalization of women in society.	2, 5	Ev
CO 6	construct and reorient the identity of women through creative writing.	8, 5	Cr

SEMESTER-VI	
Core XIII	New Literatures in English

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge about contemporary literature across cultures.	1, 2	Un
CO-2	understand texts in their cultural and historic contexts.	1	Un
CO-3	identify the various themes present in New Literatures in English.	1	Un, Ap
CO-4	develop a critical understanding of how literature can both uphold and resist existing structures of power.	8	Un, An
CO-5	critically analyse different literary texts across cultures	6	An
CO-6	evaluate the diversity of literary and social voices.	1, 2	Ev

SEMESTER-VI**Core XIV****World Literatures in Translation**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the literary genres of World Literatures through translation.	2	Un
CO-2	infer a comprehensive knowledge of diverse cultures and values expressed	2	Un
CO-3	relate the translation theories and interpret literatures accordingly	1	Ap
CO-4	explore the psychological dimensions and approaches of writers to human existence	4	An
CO-5	analyze the aesthetic philosophy and spiritual values expounded in world literature	8	An
CO-6	estimate the conventions and ideologies of world's greatest writers and comprehend the philosophy stated.	6	Ev

SEMESTER VI**Core XV****Diasporic Literary Studies**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the problem of exile and displacement	2	Un
CO-2	comprehend the significant features of diasporic literature.	2	Un
CO-3	identify and interpret the representative works of the writers of diaspora.	2, 4	An
CO-4	appraise the significant themes and literary devices employed by the major writers.	4	Un, Ev
CO-5	interpret the historical perspective of diasporic literature.	4, 8	An
CO-6	formulate imagination to a wider range of voices across cultures.	2, 6	Ap, Cr

Semester VI
Project

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the fundamentals of Research process in characterizing, instantiating, and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
CO-2	cultivate research culture by combining theory with practical application for an exceptional professional foundation.	2	Ev
CO-3	interpret new literary works to build broad-based knowledge and skills necessary to fulfil their goals.	7	Ev
CO-4	evaluate critically the sources they find and develop the thesis into a well-supported argument.	6	Ev
CO-5	formulate an original, increasingly analytical thesis of their own.	7	Cr
CO-6	document and present their work in accordance with the concepts of research methodology.	8	Cr

SEMESTER – I	
Core I	History of India upto 647 C.E

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO1	widen the knowledge of Ancient History of India	PSO1	Un
CO2	appreciate the engineering skills of Indus Valley people and intellectual history of ancient Indians	PSO 8	Ap
CO3	construct the favourable scope for new religions in ancient India	PSO1	Un
CO4	comprehend the legacy of ancient India and analyse the Persian and Macedonian Invasion with its impact	PSO 4	An
CO 5	examine the genealogy of various kings and their administration	PSO 7	Ev
CO6	enhance the knowledge of transition of territorial states to Empires	PSO 6	An

SEMESTER – I	
Core II	Religions in India

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand and develop religious tolerance	1	Un
CO-2	appreciate and follow the ethical and moral standards of religions and respect the feelings of other religions.	3	Ap
CO-3	analyse the basic principles and teachings of various religions.	4	An
CO-4	learn the schism in religion.	1	Un
CO-5	analyse the different forms of worship.	4	An
CO-6	evaluate the essence of all religions and the contribution of various religions.	5	Ev

Semester – I	
Skill Enhancement Course-I	Professional English for History

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand to comprehend the historical events in English.	1	Un
CO-2	emphasize the reading skills of primary and secondary documents.	1	Un
CO-3	acquire the listening skills and improve reading famous speeches	3	Ap
CO-4	analyse the sentence structure and write letter	4	An
CO-5	evaluate the case study and make notes and summaries	5	Ev
CO-6	apply the practice of proof– reading and edit written material	3	Ap

Semester – II	
Core III	History of India from 647– 1526 C.E

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about the origin of Rajputs and the legacy of Muslim culture.	1	Un
CO-2	analyse the study of fine arts through the ages.	4	An
CO-3	analyse Arab Conquest of Sindh.	4	An
CO-4	evaluate the struggle between Vijayanagar and Bahmani Kingdoms	5	Ev
CO-5	estimate the reforms of Delhi Sultanate and the impact of foreign invasions.	5	Ev
CO-6	analyse the contribution of Delhi Sultanate	4	An

SEMESTER – II	
Core IV	Monuments in India

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend and take pride of historical monuments.	1	Un
CO-2	know the historicity of historical monuments and the means to preserve historical monuments.	1	Un
CO-3	appreciate the workmanship of artisans.	3	Ap
CO-4	analyse the preservation of monument art and the influence of foreign invasions.	4	An
CO-5	evaluate the significance of historical monuments.	5	Ev
CO-6	examine the royal patronage of kings.	4	An

Semester – II	
Skill Enhancement Course–II	Professional English for History

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know to comprehend the ideas of note making	1	Un
CO-2	enhance the professional career through English	2	Re
CO-3	promote communication skills and guarantee understanding among the people	3	Ap
CO-4	apply written and verbal communication skills and practice reading and writing	3	Ap
CO-5	analyse case study	4	An
CO-6	apply easy visual learning context	3	Ap

Semester – II
Environmental Studies

Course Outcomes:

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

- 1 Recognize the biotic and abiotic components of ecosystem and how they function.
- 2 Use natural resources more efficiently and know more sustainable ways of living.
3. Acquire an attitude of concern for the environment.
4. Participate in improvement and protection of environment.
5. Manage unpredictable disasters.
- 6 Create awareness about environmental issues to the public.

Semester – III	
Core V	History of India from AD 1526 to 1707 C.E

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the History of the Mughals and the Advent of the Europeans.	1	Un
CO-2	analyse the golden age of Mughals	4	An
CO-3	appreciate the religious policy of Akbar.	3	Ap
CO-4	evaluate the glory of Marathas.	5	Ev
CO-5	aware of the settlements of Europeans.	1	Un
CO-6	estimate the Anglo-French rivalry in India.	5	Ev

SEMESTER III	
Allied III	Indus Valley Civilization

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	widen the knowledge of Indus Valley Civilization in the context of other ancient civilizations in the world.	1	Un
CO-2	know the latest and recent excavations of Indus Valley sites.	2	Re
CO-3	analyse the social, economic and religious condition of Indus Valley people.	4	An
CO-4	appreciate and evaluate the administration of Indus Valley Civilization.	5	Ev
CO-5	estimate the causes for the decline of Indus Valley civilization	2	Re
CO-6	evaluate the comparative study of civilizations in historical context.	5	Ev

SEMESTER III	
Core Skill Based	Archives and Museums

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the organisations and functions of Archives and Museums.	1	Un
CO-2	familiarize with more collaborative approaches in history.	4	An
CO-3	apply the uses of Archives and Museums in historical writings.	3	Ap
CO-4	analyse the primary sources of Archives and Museums.	4	An,
CO-5	identify good practice and skills of professionals and preserve Archives and Museums.	3	Ap
CO-6	evaluate the evidences of History.	5	Ev

Semester – III	
Non Major Elective I	Freedom Movement in India

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the history of hard earned freedom	1	Un
CO-2	analyse the imperialist policy of British	4	An
CO-3	asses the various factors of nationalism	5	Ev
CO-4	analyse the impact of western education	4	An
CO-5	follow the noble virtues and the values of nationalism and independence	3	Ap
CO-6	empower and strive hard to preserve independence	3	Ap

Semester – III	
Self Study/MOOC/Internship (Compulsory)	Development of Tourism Department in India with Special Reference to Tamil Nadu

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	become aware of peaceful mobilization across cultural boundaries.	1	Un
CO-2	analyse powerful agent for change.	4	An
CO-3	driving force to relieve stress and storm.	3	Ap
CO-4	generate income and find employment opportunities.	8	Ap
CO-5	make aware of conservation of eco-system and adhere environmental friendly approach in all aspects.	7	Ap
CO-6	enumerate and follow the economic and environmental goals.	7	Ap

Semester IV	
Core VI	History of India from AD 1707 to 1858 C.E

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the uprisings of native Indians in the context of British rule.	1	Un
CO-2	analyse Permanent Revenue settlement of Bengal.	4	An
CO-3	learn the tactics of Tipu Sultan of Mysore.	1	Un
CO-4	evaluate Subsidiary Alliance of Lord Wellesley.	5	Ev
CO-5	estimate Great Revolt of 1857 as the First War of Indian Independence	5	Ev
CO-6	evaluate the causes for the decline of Company rule.	5	Ev

SEMESTER IV	
Allied IV	Socio-Religious Reform Movements in India

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the social and religious reforms free from superstitious beliefs and blind faith.	1	Un
CO-2	analyse the blind faith and superstitious beliefs of the people.	4	An
CO-3	estimate the services of social reformers	5	Ev
CO-4	examine the present reforms of the society.	7	An
CO-5	investigate the Muslim reform movements	4	An
CO-6	assess the present social evils and their solutions.	7	An

Semester IV	
Core SB	Introduction to Archaeology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the archaeological skill to reconstruct the history of the past.	1	Un
CO-2	learn the methods of excavation and exploration.	1	Un
CO-3	apply the archaeological skills in historical writing	3	Ap
CO-4	understand excavation methods and techniques.	1	Un
CO-5	analyse the various dating system.	4	An
CO-6	appreciate the work of Archaeologists	1	Un

Semester – IV	
Non-Major Elective II	Constitution of India

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	follow the noble ideals of Constitution	3	Ap
CO-2	analyse the salient features of the Constitution	4	An
CO-3	investigate the constitutional framework in the present scenario.	4	An
CO-4	estimate the ideals of democracy.	7	An
CO-5	learn the Constitutional amendments	1	Un
CO-6	appreciate fundamental rights and duties of citizens	1	Un

Semester – IV	
Self Study	Modern Tourism

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify career and educational options in the field of Tourism.	1	Un
CO-2	learn additional skills needed for a Tourist Guide.	1	Un
CO-3	follow and practice ethical behavior in a tour.	3	Ap
CO-4	use creativity and self reflection and produce meaningful conclusions.	3	Ap
CO-5	perform tourism related businesses such as front desk operations and accommodation.	3	Ap
CO-6	practice self – marketing in the tourism agency.	3	Ap

SEMESTER V**Core VII (Common Core) Women Empowerment in India**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	illustrate Indian women's historical, socio economic and political experiences.	3	Ap
CO- 2	classify the nature and growth of women's movement in the Modern Age.	2	Re
CO- 3	analyse women's participation in politics from a feminist perspective.	4	An
CO- 4	appraise the theoretical outlook on feminism from India and abroad.	5	Ev
CO- 5	evaluate various emerging gender issues in contemporary India.	5,7	Ev
CO- 6	assess the Indian feminist traditions that have arisen out of the heterogeneity of Indian experience.	7	Ev

Semester –V	
Core VIII	History of India from 1887 to 1947 C.E

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	uphold the noble ideals of our leaders and render selfless service to our nation.	3	Ap
CO - 2	comprehend the various stages of Indian Independence	1	Un, Re
CO - 3	estimate the causes of Indian nationalism.	5	Ev
CO - 4	assess the sacrifice of Freedom fighters.	5	Ev
CO - 5	recognize and know the value of Independence.	7	Un
CO - 6	appreciate the unique Independence movement of India	8	Re

Semester – V	
Core – IX	History of Tamil Nadu upto 1336 C. E.

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the impact of Geographical features of Tamil Nadu.	1	Un
CO-2	know about the Kalabhra interregnum.	1	Un
CO-3	examine the contribution of Pallavas, Cholas and Pandyas.	4	An
CO-4	analyse the impact of Muslim Invasion.	4	An
CO-5	evaluate the rule of Madurai Sultanate.	5	Ev
CO-6	analyse the administration of various dynasties and the various styles of architecture.	4	An

Semester –V	
Core X	History of Europe from 1453-1789 C.E

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn important landmarks in Europe which revolutionized the course of world history.	1	Un
CO-2	comprehend the diplomatic alliances of various European countries.	1	Un
CO-3	analyse the role of Europe in international affairs.	4	An
CO-4	evaluate the work of benevolent despots in Europe.	5	Ev
CO-5	estimate the international relations of Europe in historical context.	5	Ev
CO-6	assess the foreign policy of Europe.	5	Ev

Semester – V	
Core Elective A	History of Thoothukudi

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	appreciate the freedom fighters and historical monuments of Thoothukudi.	1	Un
CO -2	comprehend the forgotten freedom fighters in Thoothukudi.	1	Un
CO -3	analyse the mass conversion in Thoothukudi.	4	An
CO -4	assess the significance of pearl fishing and trade and commerce.	5	Ev
CO -5	estimate coastal policy of the Portuguese, Dutch and British in Thoothukudi.	5	Ev
CO -6	assess the role of missionaries in Thoothukudi.	5	Ev

SEMESTER V	
Core Elective B	Understanding Heritage

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the meaning of Antiquity and the types of heritage sites.	1	Un
CO-2	adhere the conservative measures to enhance the National and International heritage.	3	Ap
CO-3	analyse the challenges facing Tangible and Intangible heritage.	4	An
CO-4	analyse the smuggling of heritage sites.	4	An
CO-5	adhere the Conventions and Acts to promote heritage.	3	Ap
CO-6	evaluate the relationship between cultural heritage and landscape.	5	Ev

Semester - V	
Common Skill Based Core	Computer for Digital Era and Soft Skills

Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.

Semester – V	
Self Study/MOOC/Internship (Optional)	Beach Tourism

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the beach tourist spots and its development and know the different types of beach tourism	1	Un
CO-2	comprehend and ensure the significance of handicraft and fisheries	1	Un
CO-3	analyse the importance of beach tourism in present scenario	7	An
CO-4	estimate the economical factors of beach tourism	5	Ev
CO-5	assess the impact of beach tourism	5	Ev
CO - 6	evaluate the uses of beach tourism	5	Ev

Semester–VI	
Core XI	Contemporary History of India from 1947 C.E to till date

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire the knowledge of Contemporary Indian History and the rule of various ministries	1	Un
CO-2	analyse the foreign policy of India after Independence	4	An
CO-3	assess the contemporary political scenario in India	5	Ev
CO-4	make aware of communal issues and their solutions	5	Ev
CO-5	evaluate the foreign policy and domestic policy in historical context	5	Ev
CO-6	analyse the educational policy of Post Independent India	4	An

Semester – VI

Core – XII History of Tamil Nadu from A.D. 1336 to 2000 C.E

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about the historical background of the Tamil Nadu State.	1	Un
CO-2	estimate the legacy of various dynasties.	5	Ev
CO-3	analyse the cultural heritage of Tamils.	4	An
CO-4	assess the legacy of Dravidian architecture.	5	Ev
CO-5	evaluate the course of Dravidian movement	5	Ev
CO-6	compare the past and present political condition of TamilNadu.	4	An

Semester – VI	
Core – XIII	History of Europe from A.D. 1789 to 2000 C.E

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the work of Napoleon Bonaparte.	1	Un, Re
CO-2	analyse the impact of French Revolution and the Unification Movements of Europe.	4	An
CO-3	critical and analytical study of World Wars.	4	An
CO-4	estimate the historical background of the establishment of UNO.	5	Ev
CO-5	appreciate the work of UNO and awareness on the role of Europe in International relations.	3	Ap
CO-6	analyse the dictatorship of Hitler and Mussolini.	4	An

Semester – VI	
Core XIV	Historiography

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various disciplines of history and the significance of historical writings.	1	Un, Re
CO-2	apply methodology in historical writings.	3	Ap
CO-3	analyse the various works of historians.	4	An
CO-4	evaluate the sources in historical writings.	5	Ev
CO-5	know the recent trends in historical writing.	7	Un
CO-6	promote thesis writing and research articles.	3	Ap

Semester – VI	
Core XX	Constitution of India

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	be aware on the working of the constitution and prepare for the competitive Exams.	3	Ap
CO-2	understand the writing works of the Drafting Committee and Constituent Assembly.	1	Un
CO-3	appraise the powers and functions of the executive.	4	An
CO-4	estimate the Fundamental Rights and Fundamental Duties.	5	Ev
CO-5	prepare for the Competitive Exams and develop teamwork and leadership in terms of free legal aid.	3	Ap
CO-6	assess the powers and functions of Judiciary.	5	Ev

Semester – VI

Project

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the recent methodology in historical writing.	1	Un
CO-2	analyse the essence of the research work	4	An
CO-3	evaluate the sources in historical writings.	5	Ev
CO-4	enhance data collections through various means.	1	Un
CO-5	promote thesis writing and research articles.	3	Ap
CO-6	apply methodology in historical writings.	3	Ap

Biological Sciences

SEMESTER – I	
Core I	Plant Diversity I (Algae, Bryophytes, Fungi and Lichens)

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate general characteristics of algae, fungi, lichen and bryophytes	1	Un
CO-2	compare and contrast algae, fungi, lichen and bryophytes	2, 3	Un
CO-3	critique the importance of algae, fungi, lichen and bryophytes and their role in everyday life and environment.	3	Ev
CO-4	distinguish life cycle pattern in algae, fungi and bryophytes	2	An
CO-5	identify algal, fungal, lichen and bryophytes samples and compare adaptive feature of the specified plant groups	1	Un, Re
CO-6	implement the knowledge acquired for self-employability	6, 7	Un, Ap

SEMESTER I	
Allied I	Invertebrate & Chordate Zoology

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate the invertebrate and chordate animals	1	Un
CO-2	identify the common and distinctive features of invertebrate phyla	2	Re
CO-3	associate the parasitic adaptation through their mode of life	3	Un
CO-4	analyse the unique features and evolutionary relationship between each chordate group	1	An
CO-5	apply the knowledge of biological diversity to our daily life and conservation of bioresources	5	Ap
CO-6	evaluate the interaction of organisms with environment and their adaptive mechanisms	3	Ev

SEMESTER – I**Skill Enhancement Course - I Professional English for Botany – I**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	organize the words used in life science and improve their competence in using the language	1	An
CO-2	critique unfamiliar texts and describe biological processes and appraise critical and theoretical approaches to the reading and analysis of various texts in life science	7, 3	Ev, An
CO-3	discuss critically, negotiate and present without committing errors and develop entrepreneurship skills	2	Un
CO-4	describe the technical words used life science laboratory settings and construct error free sentences for content writing	8	Re
CO-5	present simple sentences without spelling or grammatical error and develop strategic competence through active listening	7	Ap
CO-6	construct English proficiency with good vocabulary and speak confidently in academic/ professional environment and face interviews with confidence	7	Ap

SEMESTER – II	
Core II	Anatomy, Embryology and Microtechniques

CO. No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	classify tissue system and explain the organization of root and shoot apex	2	Ev, An
CO-2	distinguish the organization of tissues and cellular architecture between root and stem and learn the process of secondary growth in plants	2	An
CO-3	describe the cytological events associated with the flower development	2	Un , E
CO-4	explain the physiological changes during pollen pistil interaction.	1	Un
CO-5	understand fertilization and double fertilization.	3	Ev
CO-6	explain the development of seed and dispersal mechanism	1	Un

SEMESTER II**Allied II Genetics, Physiology and Developmental Zoology**

CO. No	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	explain the importance of genetics and welfare of human society	2	Un
CO-2	list out the nutritive components in the food	2	Re
CO-3	describe the physiology of digestion, respiration and excretion	3	Re
CO-4	appraise the structure and function of human nervous system and the process of nervous conduction	1,2	An
CO-5	illustrate the anatomy, physiology of human reproductive system, fertilization and post fertilization events	3	Un
CO-6	categorize the types of contraceptive devices and suggest treatment for infertility.	3,8	An

SEMESTER – II**Skill Enhancement Course - II Professional English for Botany – II**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	categorize the words used in life science and improve their competence in using the language in daily life	1	An
CO-2	appraise the critical and theoretical approaches to the reading and analysis of various texts in life science and critique the biological processes	3, 7	An, Ev
CO-3	discuss critically, negotiate and present without committing errors and develop entrepreneurship skills	2, 6	Un
CO-4	prepare reports and minutes for various academic events	7	Cr
CO-5	write essays creatively and innovatively on view of images	7	Ap
CO-6	develop script for topics on interest	7	Cr

SEMESTER – III**Core III Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)**

CO.No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	summarize the general characters of pteridophytes and gymnosperms and outline the classification of these groups of plants	1,2	Un
CO-2	specify the criteria of classification and assign the taxonomic hierarchical rank to the taxa	2,3	Un, Ap
CO-3	explore the ecological and economic significance of pteridophytes and gymnosperms	1,3	An
CO-4	highlight the phenomenon of heterospory in pteridophytes and infer its significance in origin of seed habit	2	An
CO-5	examine microscopically the key characteristics of (morphological, anatomical and ecological) pteridophytes and gymnosperms and make sketches of the same.	6	Ap
CO-6	record the geological time scale and relate the geological era with evolution of plants	2.4	Un

SEMESTER - III**Allied III****Plant Diversity**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
1.	consider the criteria of classification and outline the system of classification (algae, fungi, bryophytes, pteridophytes and gymnosperms) as proposed by different taxonomist	1	An
2.	work out micropreparation techniques to study the specimen and to reveal the histological architecture using compound light microscope	5	An
3.	illustrate the key features of these plants and explain their characters and life cycle pattern to distinguish different plant groups	3	Un, Ap
4.	explore and express the ecosystem services and economic benefits of these groups of plants	3	Ap
5.	assign the taxonomic ranks to indicate its systematic position and evaluate the evolution of plant species	1, 2	Un, Ev
6.	trace the origin and evolution of steles, foliage and seed from seedless plant groups and comment pteridophytes are pioneer in the evolution of seed habit	1, 2	Re

SEMESTER - III**Skill Based Elective****Horticulture**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	explain the various divisions of horticulture and importance.	1	Un
CO-2	design a landscape and interior scope project.	8	Cr
CO-3	apply the concept of horticulture science to select, manage, improve plants and their production.	6	Ap
CO-4	demonstrate employability skills in the field of horticulture	6	Ap
CO-5	equip the skill in gardening and floriculture to enhance sense of aesthetic appreciation.	6	An
CO-6	synthesize and integrate information to solve horticultural problems.	4	Ap

SEMESTER III	
Skill Based Elective	Gardening and Nursery Management

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recollect the scope and Understand the different types of gardens and suggest plant choices on the basic concepts of gardening	1	Re,Un
CO-2	describe the importance, features and maintenance of commercial gardening.	6	An
CO-3	acquire knowledge regarding theory and practice of cultural and production techniques and methods.	5	An
CO-4	equip the skill in landscaping, gardening and floriculture and enhance sense of beautification and aesthetic values	4	Cr
CO-5	understand the importance, types and establishment of Nursery	5	Un
CO-6	learn practices like nutrition, water management and pest management	5	Ap

SEMESTER - III	
NMEI	Plant Resource Utilization

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the history of agriculture and scope of agricultural crops	1	Re
CO-2	discuss the knowledge on geographical area of cultivation, production and marketing of various food crops and their finished goods	1	Un
CO-3	present the importance of tropical and temperate fruits for human wellbeing, cultivation practices and extraction of oil from oil crops	3	Ap
CO-4	critique the value of spices, condiments and beverage in international trades and confectionery industries	3	Ev
CO-5	evaluate the wealth of cash crops in India and their importance in improving trade and industrial growth	3	Ev
CO-6	indicate fibers are an alternative source of plastics, explain the use of beverages and their production	5, 6	Un

SEMESTER - III**Self Study (Compulsory)****Ethnobotany**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge about the ethnic tribals of Tamil Nadu	1, 2	Un
CO-2	discuss about the various methods of herbal medicine preparation	1, 2	Ap
CO-3	identify the different form of herbal medicines	6	Ap
CO-4	understand the basic knowledge about the plants used in folk religion	1, 2	An
CO-5	apply this knowledge to conserve the endangered plants and forest management	1, 6	An
CO-6	understand the concept of intellectual property rights in tribal medicines	1, 2	Un

SEMESTER IV	
Core IV	Taxonomy of Angiosperms and Economic Botany

CO. No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	describe the general principles of classification and outline the systems of classification	1	Cr
CO-2	apply binomial nomenclature for species naming	4	Un
CO-3	learn floristic features in technical term and provide an illustrious explanation on floral components of the flower and develop skill in plant identification.	4,6	Ap
CO-4	familiarise and evaluate the economic importance of angiosperms	6	Ev
CO-5	attain field experience and preparation of herbaria for digital database and gain the art of plant collection and protection	6, 8	An, Cr
CO-6	compare and contrast the diagnostic features of different families of angiosperms prescribed in the syllabus	1	An

SEMESTER - IV**Allied IV****Angiosperm Taxonomy and Plant Physiology**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	study the morphological variation of vegetative part of angiosperms in relation to environmental condition	1	Un
CO-2	characterize the morphological features and architecture of floral components and categorize the types of inflorescences	2	Ev
CO-3	layout and recall the natural systems of classification of angiosperms as proposed by Bentham and Hooker	1,2,4	Re
CO-4	understand the physical process associated with water absorption, transport and transpiration	2 ,3	Un
CO-5	analyze light enhance photochemical reaction, synthesis of ATP and NADPH and fixation of carbon dioxide into organic compound	2, 3	An
CO-6	conduct scientific experiments to record the data	4, 8	Ev

SEMESTER - IV	
Skill Based Elective	Organic Farming and Biofertilizer

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand overall perspective on organic farming.	2,7	Un
CO-2	realize the advantages of traditional organic farming over modern system of farming	4 , 6	An
CO-3	identify and formulate mechanical and biological managements of insects/pests/ weeds.	4	An
CO-4	recognize the importance of composting and bio fertilizers over chemical fertilizers for soil sustainability	2,7	Ev
CO-5	understand and implement crop protection techniques of fruits and vegetables	4, 6	Un
CO-6	know the process of food certification and to assess the socioeconomic benefit of organically grown foods and enhance self employability and improve their economy	6	Ap

SEMESTER IV**Skill Based Elective****Weed Science**

CO.No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	characterize and classify weeds	1	An
CO-2	predict the method of propagation, dispersal mechanism and its perpetuation in its ecological niches	6	Ap
CO-3	recognize competition between crop and weed in terms of light, space, moisture and nutrition	2	An
CO-4	investigate allelopathic effects between crops in their rhizosphere	3	An
CO-5	defend the mechanism action of herbicides	3	Ev
CO-6	relate the long term importance of herbicides to the environment and non targeted organisms	7	Ap

SEMESTER IV	
NME II	Food Technology

CO. No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	manufacture a range of simple nutritious and novel food products and learn quality improvement and ingredient substitution.	6	Ap
CO-2	identify and explain nutrients in foods and the specific functions in maintaining health.	2	Re
CO-3	commends on causes and deterioration mechanisms of foods and methods to control food spoilage and principles of food preservation	3	An
CO-4	understand the compositional and technological improvement in dairy and bakery industries	6	Un
CO-5	learn nutritious values of food and employ technologies in production and preservation	3	Ap
CO-6	apply preservation principles in product design and presentation	8	Ap

SEMESTER- IV

Ability Enhancement Course: Yoga and Meditation
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Course Outcome:

- To learn and practice various meditation, yoga methods to transform the ordinary life into a healthy, harmonious life leading to holistic wellbeing,
- To create an eco-friendly, loving and compassionate world.
- Acquire knowledge and skill in yoga for youth empowerment.
- Increase their power of concentration
- Learn the causes and ways to overcome fear and sadness.
- Create a ecofriendly, loving and compassionate world.

SEMESTER IV**Self Study (Optional) Preservation of Fruits and Vegetables**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the nutritive components of vegetables and fruits	4,6	Un
CO-2	understand the factors affecting the storage life of fruits and vegetables	6	Un
CO-3	identify novel technologies in the processing of vegetables and fruits	6, 8	K, Ap
CO-4	adapt the methods of preservation of vegetables and fruits	6	C
CO-5	acquire the knowledge of chemical preservatives	6	Un
CO-6	develop the skill to analyze the quality like sugar such as jam, jelly etc. and identify the different techniques of packaging and storage	6, 8	C, K

SEMESTER -V	
Core V	Common Core - Biotechnology

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss different types of animal and plant cloning vectors and scan the role of restriction enzyme in genetic modification	1,2	Un
CO-2	clarify the human genome sequences and its application in human welfare	4,7	Un, An
CO-3	apply various gene transfer techniques to generate genetically modified organisms	2,7	Ap
CO-4	perform cell culture, organ culture and stem cell culture to realize the positive impact in health care	6	Un, Ap
CO-5	encapsulate the characteristic features of microbes and their role in production of industrial products and environmental reclamation	5,6	An
CO-6	get hands on experience to conduct experiments, analyze and interpret data for investigating problems in biotechnology and allied fields	7,8	Ap

SEMESTER V
Core VI Biochemistry

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the types of chemical bonds involved in the structure of biomolecules and basic concepts of acid, base and buffer	1	Un
CO-2	classify carbohydrates of different domain based on their physical, chemical organization and their biological significance	8	An
CO-3	understand and describe the structure and properties of amino acids, protein and lipids and their role in organization of life	8	Un
CO-4	layout enzyme groups and know the nomenclature that enables to deduce the specificity of enzyme's action	8	Un
CO-5	discuss the sources of vitamins and symptoms specific to vitamin deficiency in human beings.	8	Re
CO-6	apply theoretical knowledge in biochemical laboratory techniques	3, 5	Ap

SEMESTER V	
Core VII	Ecology and Phytogeography

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the ecological, edaphic and biotic factor of the community	3	Re, Un
CO-2	reveal the range of plant community and their relationship in the environment	1	Un
CO-3	enable the students to understand how the plant interact with their environment	1	An
CO-4	categorize the plants based on adaptation to its environments	1	An
CO-5	understand the concept of various plant Communities and their characteristics	2	Un
CO-6	understanding of geographical region and vegetation types of India	2	Un

SEMESTER – V	
Core VIII	Biostatistics and Bioinformatics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and comment on fundamentals of statistical analysis	4	Un
CO-2	apply the learned procedure for collecting data, presenting data	6	An
CO-3	choose necessary tool to interpret the results and find solution to the problems and work with computer skill especially in MS Excel	6	Ev, Un
CO-4	understand the relationships among living things and analyze biological problems using biological concepts, algorithms, and tools available in computer science	2,4	Un
CO-5	apply molecular methods to study genetic variation within and between species	3	Ap
CO-6	apply knowledge of bioinformatics in a practical project	4	Ap

SEMESTER V	
Core Elective	Genetics and Evolution

CO. No.	Upon completion of this course the students will be able to	PSO addressed	CL
CO – 1	design genetic crosses to get information about genes, alleles and gene function	1	U
CO – 2	compare the phenotypes that results from Mendelian principles of inheritance, X linked and cytoplasmic model of inheritance.	3	U
CO – 3	explain how the quantitative traits and the results of many gene combination that each can contribute a varying amount to a phenotype	3	U
CO – 4	explain diagrammatically the process of homologous recombination during meiosis and interpret how it can it lead to re combination of genes and there by variation.	3	C
CO – 5	evaluate how Darwin’s theory of natural selection helped to study organic evolution and able to detect evolutionary forces (natural selection, genetic drift, recombination, migration, mutaion) that drive the pattern and process of organic evolution at different levels	5	C
CO -6	answer the scientific questions how organism have evolved overtime and formulate a hypothesis about origin of life on the earth.	6	U

SEMESTER V	
Core Elective	Pharmacognosy

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and identify the more valuable medicinal plants based on their pharmaceutically active compounds	3	Re,
CO-2	formulate medicinal product and apply the knowledge for proper storage and distribution	8	Ap
CO-3	analyse and evaluate the purity of herbal medicine.	5	Ev
CO-4	define, classify and explain the importance of herbal medicine.	6	An
CO-5	identify the crude drugs by morphological, organoleptic and histological characters.	1	Un
CO-6	know and explain the important phyto constituents of therapeutic value.	6	Un

SEMESTER – V	
Self-study (Optional)	Seed Biology

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe the morphology and structural details of seeds.	1	Un
CO-2	explain the storage and conservation of seeds.	5	Un
CO-3	have the knowledge of national and international seed quality control organizations and seed certification agencies.	6	Ap, An
CO-4	understand the germination ecology of seeds.	1	Un
CO-5	explain the different types of seed quality enhancement treatments.	6	Un
CO-6	identify the viable, pure and vigor seeds.	1	An

SEMESTER – VI**Core IX****Plant Physiology**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the plant's water relation and functions of root that influence the transfer of inorganic nutrients from the soil into the plants	2,3	Un
CO-2	analyse the mechanism of their assimilation of inorganic molecules into organic molecular components.	2,3,8	Un
CO-3	analyse light enhanced photochemical reactions that culminates in the synthesis of ATP and NADPH and fixation of carbon dioxide into organic compounds	2,3,8	Un
CO-4	describe respiration with its associated carbon metabolism and releasing of energy stored in chemical bonds in the controlled manner for cellular use	2	Re, Cr
CO-5	comment on the hormone controlled and light mediated morphogenetic events in plants	2	An
CO-6	design and conduct scientific experiments and analyse the data critically	4,8	Cr

SEMESTER VI**Core X****Microbiology and Plant Pathology**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge on the basic concept of microbes, their taxonomy, mode of nutrient and give insight on microbial culture	1	Un
CO-2	understand the structure and growth characteristics of microorganism that enabling the learner to identify and classify microorganisms by themselves	2	Un
CO-3	use various microbiological techniques to isolate bacterial species for morphological and physiological studies	6	An
CO-4	understand the role of microorganisms in fermentation technology for production of food based and pharmaceutical products	6	Ap
CO-5	enumerate the microbial flora of milk and determine milk quality	2	Ev
CO-6	provide a thorough knowledge about the microbes causing plant diseases, their symptoms and preventive measures	7	Ap

SEMESTER - VI	
Core XI	Cell and Molecular Biology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	indicate the structure and function of basic organelles of plant cells	1, 2	Un
CO-2	illustrate the structural organization and function of nucleus	1, 2	Un
CO-3	infer and quote the general principles of chromosome organization	1, 4	Un, Re
CO-4	sequence the gene regulation mechanisms at various levels	2	Un
CO-5	compare the complexity of gene expression in eukaryotes over prokaryotes and infer molecular mechanism of dna replication	5	An, Re
CO-6	present laboratory skill in conducting experiment and draw data and interpret it	6	Ap

SEMESTER VI	
Core XII	Marine Biology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the marine environment and classify them and analyze how marine organism adapt to their dynamic environment	1	Un, An
CO-2	able to signify the characteristic feature of phytoplanktons sea weeds sea grass their ecology and their economic importance	5	Re
CO-3	achieve practical skills in processing, preserving and culturing marine plants	6	Ev
CO-4	evaluate the uses of marine resources and realize the role of marine plants in the economy of the ocean	5	Ap
CO-5	able to signify the characteristic feature of mangroves, coral reefs and their role in coastal protection and biodiversity conservation	5	An
CO-6	explain the ecological relationship between organisms and their environment	2	An

SEMESTER I	
Core I	Invertebrata

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	explain the distinctive features of taxonomic classes within the phyla covered	1	Un
CO – 2	illustrate the important concepts in invertebrate body structure and organization, including body symmetry, body cavity, gut formation, segmentation	2	Un
CO – 3	examine the important biological processes in invertebrates, including locomotion, body support, reproduction, development, feeding, digestion, excretion, osmoregulation etc.	3	An
CO – 4	outline the ecological and economic importance of invertebrates.	3	An
CO – 5	analyse of the importance and diversity of invertebrates	5	An
CO – 6	develop basic laboratory skills including microscopy, dissection and careful observation.	6	Cr

SEMESTER I
PROFESSIONAL ENGLISH FOR ZOOLOGY – I

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	implement their skills in conversing with confidence in an intelligible and acceptable manner	7,8	Ap
CO-2	apply their reading skills to read unfamiliar scientific texts independently and comprehend it	7,8	Ap
CO-3	infer the significance of scientific writing and apply it for writing scientific articles in journals	7,8	Un
CO-4	identify the various types of sentences and use them in the relevant context	7,8	Ap
CO-5	listen to lectures and interpret critically	7,8	Ev
CO-6	develop their communication and presentation skills	7,8	Cr

SEMESTER I	
Allied I	Invertebrate & Chordate Zoology

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate the invertebrate and chordate animals	1	Un
CO-2	identify the common and distinctive features of invertebrate phyla	2	Re
CO-3	associate the parasitic adaptation through their mode of life	3	Un
CO-4	analyse the unique features and evolutionary relationship between each chordate group	1	An
CO-5	apply the knowledge of biological diversity to our daily life and conservation of bioresources	5	Ap
CO-6	evaluate the interaction of organisms with environment and their adaptive mechanisms	3	Ev

SEMESTER II	
Core II	Chordata

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the fundamental organization of chordates.	1	Un
CO-2	discuss the basic concepts of chordate diversity	3	Un
CO-3	analyze the characters of different classes of the chordates	2,3	An
CO-4	categorize the inclusion of different representative animals in particular class	2	An
CO-5	evaluate the correlation of structural organization of chordates from evolutionary point of view	1	Ev
CO-6	compare the anatomical features and their respective functions in chordate animals	2	An

SEMESTER II
PROFESSIONAL ENGLISH FOR ZOOLOGY – II

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret scientific illustrations and develop paragraphs and essays	2,7	Un
CO-2	write passages by comparing and contrasting the salient features of living organisms	2,7,8	Re
CO-3	illustrate descriptive processes in the biological system	2,8	Un
CO-4	identify problems and suggest solutions for environmental sustainability by case studies	7	Re
CO-5	deliver lectures on various scientific topics by identifying the context	8	Re
CO-6	integrate the different methods of notes making for efficient annotation of lectures	6,8	Cr

SEMESTER II	
Allied II	Genetics, Physiology and Developmental Zoology

CO. No	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	explain the importance of genetics and welfare of human society	2	Un
CO-2	list out the nutritive components in the food	2	Re
CO-3	describe the physiology of digestion, respiration and excretion	3	Re
CO-4	appraise the structure and function of human nervous system and the process of nervous conduction	1,2	An
CO-5	illustrate the anatomy, physiology of human reproductive system, fertilization and post fertilization events	3	Un
CO-6	categorize the types of contraceptive devices and suggest treatment for infertility.	3,8	An

SEMESTER III	
Core III	Developmental Zoology

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the concepts of developmental biology	2	Un
CO-2	describe the developmental process and embryogenesis	3	Re
CO-3	explain the sequential changes from cellular grade of organization to organ grade of organization	2	Un
CO-4	compare the types of extra embryonic membrane and the nature and physiology of placenta	3	An
CO-5	implement the new technologies in embryology	6	Ap
CO-6	recommended the advanced reproductive technologies for the welfare of man	6	Ev

SEMESTER III	
Skill Based Elective	A. Fishery Products

CO. No.	Upon completion of this course, the graduates will be able to	PSO addressed	CL
CO- 1	describe the products and by-products of fisheries	1	Re
CO-2	utilize information on processing and develop lab techniques for the usage of fish byproducts for industrial and domestic purposes	6	Cr
CO-3	carryout study on seaweeds and analyze their usage as food for human consumption	5	An
CO-4	develop skills to produce a variety of value added fishery products	7	Cr
CO-5	discuss and implement sanitation and quality control techniques	8	Ap
CO-6	acquire the knowledge of preservation and processing techniques and recommend their use in day to day life	8	Ev

SEMESTER III	
Skill Based Elective	B. Aquarium Management

CO. No	Upon completion of this course, the students will be able to	PSO addressed	CL
CO-1	acquire knowledge on the common aquarium fishes	1, 2	Un
CO-2	identify the different kinds of equipment and accessories used in setting up an aquarium	6	Re
CO-3	critically analyze the different kinds of fish feed and aquarium plants	6	An
CO-4	plot the common diseases, symptoms and management of aquarium fishes	7	Ap
CO-5	demonstrate skills in maintenance of water quality parameters	3,6	Ap
CO-6	produce self-employment opportunities	8	Ap

SEMESTER III	
NME I	Basic Biotechnology

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appraise the scope and importance of biotechnology by understanding the basic structure and functions of cells	1,2	An
CO-2	outline the structure of DNA, and use various techniques to visualize, manipulate and separate the DNA molecules	2	An
CO-3	summarize the basics of restriction enzymes and cloning vectors and apply the various gene manipulation techniques to generate genetically modified organisms	1,6	Un
CO-4	evaluate techniques of gene delivery and cloning to adapt in generation of genetically modified organisms	1,6,8	Ev
CO-5	discuss the preparation and characterization of nano materials in the field of nanotechnology	6,7	Un
CO-6	develop proficiency in aseptic laboratory techniques and standard procedures for cell culture.	6	Cr

SEMESTER III	
Self Study (Compulsory)	Wildlife Conservation

CO. No	upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain about the wildlife wealth of India, the threatened species and conservation of endangered species	1	Un
CO- 2	apply principles of wildlife management in protecting the threatened species	2	Ap
CO-3	analyse the values, benefits of wildlife and cause for wildlife depletion	3	An
CO- 4	understand the Wildlife Conservation Policies and develop conservation strategies.	5	Cr
CO- 5	describe the role of Wildlife Sanctuaries and National Parks in wildlife conservation	5	Re
CO-6	estimate wildlife population by learning the various census techniques	4	Ev

SEMESTER IV	
Core I	Biochemistry and Bioinstrumentation

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the structure and significance of biomolecules in life processes	2	Un
CO-2	understand the principle, working mechanism and application of standard laboratory equipments and modern instruments	6	Un
CO-3	analyze enzymes as biocatalysts, the mechanism of their action and develop the ability to comprehend life processes	4	An
CO-4	demonstrate the beneficial effects of vitamins, their sources for the healthy functioning of the body	5	Ap
CO-5	relate and deploy knowledge in identifying deficiency diseases of vitamins from symptoms and find the remedy	8	An
CO-6	apply appropriate biochemical techniques to plan and carryout experiments, test hypotheses and draw conclusions to conduct project works in near future	6	Ap

SEMESTER IV**Skill Based Elective****A. Clinical Laboratory Technology**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the laboratory practices and to develop skills in various lab techniques	6,7	Un
CO-2	analyze and distinguish various types of blood cells	2,6	An
CO-3	understand the pathological diseases and explain the test for hepatitis,AIDS and intestinal parasite	5,6	Un
CO-4	demonstrate the proficiency in basic methods of instrumentation and quantitative analytical skills used to conduct biological research	6,7	Ap
CO-5	acquire knowledge to handle clinical equipments	6	Ap
CO-6	design,carryout and interpret scientific experiments	6,7	Ap

SEMESTER IV	
Skill Based Elective	B. Nutrition and Health

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	describe basic concepts of nutrients and their functions	2	Re
CO -2	discuss the sources of micro and macro nutrients	2	Un
CO – 3	analyse nutritional requirements during different stages of life	2	An
CO – 4	compare the recommended dietary allowances of micro and macro nutrients	5	An
CO – 5	analyse the role of various minerals important in maintaining health	5	An
CO – 6	recommend dietary management for nutrition related disorders	6	Ev

SEMESTER IV	
NME II	Applied Biotechnology

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the production of different bio-products	2	Un
CO-2	apply the techniques to clean up the environment through various treatment methods	5	Ap
CO-3	implement gene therapy methodology for treatment of cancer	8	Ap
CO-4	interpret the importance of bio safety and IPR	6	Un
CO-5	evaluate the synthesis and applications of bio-products	6	Ev
CO-6	adopt appropriate tools and technique in biotechnological manipulation	8	Ap

SEMESTER IV	
Self Study (Optional)	Animal Care and Services

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply their skills to take care of common domestic animals	7,8	Ap
CO-2	recommend common pet care solutions and formulate healthy pet feeds and outline a dietary schedule for lactating and new born animals	3,5	Ev
CO-3	explain procedures of prenatal, antenatal and postnatal care of pet animals and diagnose common diseases of pet animals and control spread of infectious diseases of pets	3,5	Un
CO-4	compose methodology for proper hygiene of pet animals	7	Cr
CO-5	understand various legislatures that govern animal welfare in India	8	Un
CO-6	appraise the responsibilities of animal welfare organizations	8	An

SEMESTER -V	
Core V	Common Core - Biotechnology

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss different types of animal and plant cloning vectors and scan the role of restriction enzyme in genetic modification	1,2	Un
CO-2	clarify the human genome sequences and its application in human welfare	4,7	Un, An
CO-3	apply various gene transfer techniques to generate genetically modified organisms	2,7	Ap
CO-4	perform cell culture, organ culture and stem cell culture to realize the positive impact in health care	6	Un, Ap
CO-5	encapsulate the characteristic features of microbes and their role in production of industrial products and environmental reclamation	5,6	An
CO-6	get hands on experience to conduct experiments, analyze and interpret data for investigating problems in biotechnology and allied fields	7,8	Ap

SEMESTER V	
Core VI	Animal Physiology

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	identify the structure and functions and co-ordination of organs and organ systems	1	Re
CO -2	indicate the causes, diagnosis, prevention and treatment of illnesses	3	Un
CO – 3	investigate and report on experiments and observations clearly and effectively	6	An
CO – 4	apply explanatory skills to unravel the complexities of life processes and behaviour	5	Ap
CO – 5	criticize physiological challenges and processes under fluctuating environmental conditions	6	Ev
CO – 6	integrate the physiological issues to promote health and welfare of society	8	Cr

SEMESTER V	
Core VII	Cell Biology and Genetics

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the organization of the cell and to differentiate between prokaryotic and eukaryotic cell.	2	Un
CO-2	describe the structure and functioning of cell organelles as a system to carry out cellular processes	1,2	Re
CO-3	interpret the structure and types of chromosome and composition, structure, and replication of DNA	2,3	Re
CO-4	analyze the genetic basis of Mendelian and non-Mendelian inheritance and use the information gained to solve problems related to genetics	2,5	An
CO-5	evaluate hereditary patterns for genetic disorders and solutions for health and related issues.	3,8	Ev
CO-6	apply the practical and conceptual knowledge of Cell biology and Genetics in other fields of biology	6	Ap

SEMESTER V	
Core VIII	Ecology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall variety of ways that organisms interact with both physical and the biological environment	1,2	Re
CO – 2	explain the structure and impact of biogeochemical cycles	1,2	Un
CO – 3	classify major habitats found on land and water	3	Ap
CO – 4	evaluate the global scale of environmental issues	5	Ev
CO – 5	select government policies and green economy for sustainable development	5	Ev
CO – 6	design field and laboratory experiments in a systematic way	6	Cr

SEMESTER V**Core Elective****A. Introduction to Research**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the scientific ideas, tools, methods and techniques in research	4	Un
CO-2	identify appropriate research topics and parameters	8	Re
CO-3	apply the information regarding literature collection and citing the references	5	Ap
CO-4	analyze the components of scholarly writing in a thesis and research report	6	An
CO-5	evaluate critical thinking and scientific approach in the essentials of research	6	Ev
CO-6	develop new scientific tools, concepts and theories to understand and solve scientific problems	4	Cr

SEMESTER V	
Core Elective	B. Evolutionary Biology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the theories and processes of evolution	1	Un
CO-2	recall the processes driving variation, natural selection and speciation	2	Re
CO-3	appraise the evolutionary significance of mimicry and protective colouration	6	An
CO-4	examine the evidences for evolution	5	An
CO-5	evaluate the various processes concerned with the evolution of man	6	Ev
CO-6	discuss the biological and cultural evolution of man	4	Un

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	categorise the types of animal behavior correlate the role of animal's environment in the development of behavior.	2,3	An
CO-2	summarize the types of social behavior of animals	3,5	Un
CO-3	explain the modes of communication in animals	2,3,5	Un
CO-4	relate the role of hormones on the sexual behavior	2	Ap
CO-5	understand the various type of biological rhythms	3	Un
CO-6	appraise the role of circadian rhythm on human behavior	2,3	An
SEMESTER V			
Self Study (Optional)		Animal Behavior	

SEMESTER VI**Core IX****Immunology and Microbiology**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the basis of immune responsiveness and associated organs	2	Re
CO-2	compare the mechanism of B and T cell activation	5	An
CO-3	acquire knowledge on structure and functions of immunoglobulins and classify them.	2	Ap
CO-4	explain the basic structure of microbes, symptoms of microbial diseases and preventive measures	1	Un
CO-5	analyse the causes and prevention of food poisoning and food spoilage.	2	An
CO-6	develop skills in fundamental techniques in immunology and microbiology including identification of lymphocytes, sterilization, isolation and culture of bacteria	6	Cr

SEMESTER VI	
Core X	Biostatistics and Bioinformatics

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	attain an insight on statistical methods for analysis of biological data using appropriate softwares	4	Un
CO-2	apply the knowledge on the usage of bioinformatics tools for sequence alignment, data base searches, genome analysis and protein structure studies	4	Ap
CO-3	undertake statistical operations in biological data analysis	4,8	Ap
CO-4	operate commonly used bioinformatic tools and statistical methods and understand their limitation	4	An
CO-5	apply bioinformatics in life science research	4,5	Ap
CO-6	critically evaluate the data analysis procedures in publications of molecular biology research	6	Ev

SEMESTER VI	
Core XI	Marine Biology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	discuss the different ecological zones of marine environment, diversity of marine organisms and their adaptations	1	Un
CO -2	explain the physical and chemical properties of seawater and their significance to marine life	2	Un
CO - 3	appraise the ocean production, characteristics and types of coral reefs, mangroves and estuaries	3	An
CO - 4	examine the formation, types and properties of the dynamics of ocean	3	An
CO - 5	analyse various types of marine resources and assess the various environmental concerns related to the use and abuse of marine resources	5	An
CO - 6	design and implement effective solutions to problems in marine environment	8	Cr

SEMESTER VI	
Core XII	Economic Zoology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss vermicomposting methods and the suitable species of earthworm for vermiculture	1	Un
CO-2	demonstrate skills on moriculture, silkworm rearing processes and harvesting of cocoons	7	Ap
CO-3	select the suitable species of bees for apiary and make use of bee keeping equipment	1	Ev
CO-4	describe cultivable organisms, nutritional requirements and formulate feed for aquaculture organisms and manage culture ponds	7	Re
CO-5	analyse the types of milk products, their nutritive value and outline the general management of dairy animals	8	An
CO-6	develop skills for self-employment and promote rural development	7	Cr

SEMESTER - I	
Core – I	Introduction to Microbiology

CO No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	get an idea about the historical events in microbiology & scope of Microbiology	1	Un
CO -2	understand the diversity in microbiology.	1	Un
CO-3	know parts of microscope, type and its principle	1, 2	An
CO-4	distinguish different methods of staining techniques	2	Ev
CO-5	analyse nutritional requirements of microbes.	2	An
CO-6	understand the techniques involved in culturing microorganisms.	2	Un

SEMESTER - I**Core Practical –I Laboratory in Introduction to Microbiology**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	develop basic skill in aseptic techniques	2	Un
CO-2	perform various staining techniques.	2	Ap
CO-3	cultivate bacteria with different cultivation techniques.	1,2	Ap
CO-4	be acquainted with various sterilization techniques.	2	Ap
CO-5	understand the preparation of various culture media	2	Un
CO-6	isolate and characterize bacteria by streak plate method.	2, 3,4	Ev

SEMESTER - I	
Allied – I	Dairy Technology

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the process involved in production of milk and milk products	1,2	Un
CO-2	classify and explain the different types of milk products	2	Un
CO-3	understand purpose and functions of hygiene in dairy industry	2	Un
CO-4	explain organization and operations involved in milk processing units	2	Co
CO-5	organize students to processing of milk and its products	2 ,3,4	Un
CO-6	understand the various agents causing food infection, toxi-infection and intoxication that can be transmitted through consumption of milk and milk products which be immensely useful in preventing the food borne illnesses ensuring the safety of the consumers.	2 ,3,4	Un

SEMESTER – I	
Allied Practical– I	Laboratory in Dairy Technology

CO No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	prepare students to scientifically undertake all operations of dairy technology	1, 2	Ap
CO-2	organize students to processing of milk and its products	2, 3, 4	Sy
CO-3	develop skill, instill confidence by enhancing life skill	1, 2	Ap
CO-4	establish nutritional status of community through dairy farming.	2	Ap
CO-5	establish income of community through dairy farming.	2	Ap
CO-6	examine the production in small and large scale production.	2,3,4	An

SEMESTER I
Skill Enhancement Course – I Professional English for Microbiology - I

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	1	An
CO-2	use language for speaking with confidence in an intelligible and acceptable manner	2	Ap
CO-3	read independently unfamiliar texts with comprehension	1,2,3	Re
CO-4	write simple sentences without committing error of spelling or grammar	1	Re
CO-5	know presentation skills	1	An
CO-6	get critical thinking skills	1	Un

SEMESTER - II	
Core – II	Microbial Diversity

CO .No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	list out the general classification of microbes.	1,5	Kn
CO -2	distinguish the taxonomic ranks of micro organisms	2	An
CO-3	illustrate the Bergey's manual classification about bacteria	2,4	Co
CO-4	know the Alexopoulous classification of fungi and their general features	1	Kn
CO-5	interpret the general morphological characteristics and the algal diversity	1,2	Co
CO-6	demonstrates the morphology and genetic material of viruses	2	Co

SEMESTER - II	
Core Practical –I	Laboratory in Microbial Diversity

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about the knowledge on evolution and microbial diversity	1, 2	Un
CO-2	perform the techniques of microbial diversity	2	Ap
CO-3	cultivate Cyanobacteria from natural sources	1,2	Ap
CO-4	be acquainted with the ultra structure of prokaryotic and eukaryotic cell	2	Ap
CO-5	understand the structure of Protozoa, Algae, Virus	2,3,4	Un
CO-6	develop a knowledge on isolation of microbes from different sources	2, 3,4	Un

SEMESTER – II	
Allied-II	Biochemistry

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop fundamental knowledge about various bio-molecules.	2	Un
CO-2	compare and contrast the structure and function of the carbohydrates, protein, and lipid.	2	Ap
CO-3	summarize the functions of carbohydrates, proteins, lipids, enzymes and vitamins	2	Sy
CO-4	compare and contrast saturated, mono-saturated and poly-saturated fatty acids.	2	Un
CO-5	recognize the importance of the three dimensional shape of a protein on its function and its role.	2	An
CO-6	know the working principle of spectrophotometer and able to handle.	2 ,3	Kn

SEMESTER – II	
Allied Practical - II	Laboratory in Biochemistry

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perform qualitative tests for carbohydrates, lipids, and amino acid.	2	Sy
CO-2	determine saponification and acid values of fats.	2, 4	An
CO-3	identify the effect of various factors on enzymes.	2	An
CO-4	know and separate the amino acids by paper chromatography technique	2,4	Kn
CO-5	estimate proteins, carbohydrates, and amino acids.	2	Ev
CO-6	know the working principle of spectrophotometer and able to handle.	2 ,3	Kn

SEMESTER II**Skill Enhancement Course – II Professional English for Microbiology – II**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	attend interviews with boldness and confidence.	6	Ev
CO – 2	adapt easily into the workplace context, having become communicatively competent.	8	Cr
CO – 3	apply to the Research & Development organisations/ sections in companies and offices with winning proposals.	8	Ap
CO – 4	get an idea about academic writing	1, 6	Un
CO – 5	get communicative competence	6, 8	Un
CO - 6	develop creativity and imagination	2	Un

SEMESTER – III	
Core– III	Microbial Physiology and Metabolism

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the basic knowledge about Microbial Metabolism	2	Kn
CO-2	know the applications of the various culture and their pathways	4	Kn
CO-3	interpret the techniques used in Clinical Microbiology	2	Co
CO-4	determine the mechanism of nitrogen fixation by Microbes	4	An
CO-5	demonstrate the mechanism involved in bio-Luminescence	1	Co
CO-6	demonstrate the growth and sporulation process of microbes	4	Co

SEMESTER –III	
Core Practical-III	Laboratory in Microbial Physiology and Metabolism

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perform IMViC test and identify bacteria of enterobacteriaceae.	1	Sy
CO-2	perform various biochemical test.	1	Sy
CO-3	prepare buffer and determine the pH.	1	Sy
CO-4	various hydrolysis for the production of extra-cellular enzymes.	1	Sy
CO-5	explain the concept of microbial growth, its measurement and growth curve	1	Co
CO-6	demonstrate the working principle of spectrophotometer, SDS-PAGE and Agarose gel electrophoresis.	1	Kn

SEMESTER-III	
Allied-III	Genetic Engineering

CO.NO	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	infer basic knowledge about cloning	2	Un
CO-2	identify the applications of genetic engineering in Various fields	4	Ap
CO-3	explain cloning vectors	2	Un
CO-4	interpret the techniques used in genetic engineering	2	Un
CO-5	explain Genetically modified food	2	Un
CO-6	demonstrate the hazardous and potential risk in Releasing transgenic into environment	6	Un

SEMESTER-III**Allied practical III– Laboratory in Genetic Engineering**

CO.NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the principle behind any genetic engineering practical	2	Un
CO-2	experiment with isolation of Nucleic acids from Different sources	4	Ap
CO-3	interpret Transformation	1	Un
CO-4	test for the quantification of nucleic acids	2	An
CO-5	distinguish the quantification of DNA and RNA	2	An
CO-6	distinguish the isolation of DNA and RNA	4	An

SEMESTER –III	
Skill Based Elective	Bioinstrumentation

CO No	Upon completion of this course, Students will be able to	PSO Addressed	CL
CO-1	understand the concept about the basic instrumentation.	2	Un
CO-2	know about pH measurements and important Of buffer.	2,3	Un
CO-3	develop basic principles and application of centrifuge.	2,3	Co
CO-4	develop basic principles and application of spectrophotometer.	2	Un
CO-5	demonstrate an understanding of Electrophoresis and Colorimetry	2	Sy
CO-6	grasp the knowledge about advanced instrumentation.	2	Un

SEMESTER-III	
Skill Based Elective	Vermitechnology

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	select from, use and interpret results of descriptive Vermitechnology methods	6	Ev
CO-2	demonstrate an understanding the scientific and technological benefits to the rural sector by equipping them with the latest technology and to create the model for the nation	6	Ev
CO-3	gain knowledge earthworms about the various morphology	1	An
CO-4	communicate the awareness of field sampling using Vermicomposting	5	Un
CO-5	make appropriate awareness of parasites and predators	5	Un
CO-6	understand the awareness among the present status and importance of composting methods and Vermicomposting	4	An

SEMESTER-III	
NME I	Food Microbiology

CO. No	Upon completion of this course, students Will be able to	PSO addressed	CL
CO-1	provide knowledge on the importance of Food microbiology	1,4	Un,An
CO-2	acquire brief knowledge on food microbes And their importance.	1	Un
CO-3	provide information about the principles of preservation.	1,6	Un
CO-4	acquire knowledge on contamination and Spoilage problems	1,6	Un
CO-5	understand the mode of transmission of food Poisoning and food infections	6	Co
CO-6	provide information about the quality control Principles and importance.	1,2	Un

SEMESTER-III**Self-Study (Optional)****Food Packaging Technology**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	provide understanding on the consequence of Food microbiology	1,4	Un, An
CO -2	acquire a brief knowledge on food packing	1	Un
CO-3	acquire knowledge on various types of food packing	6	Co
CO-4	provide information about the principle of Packing	1,6	Un
CO-5	acquire knowledge on special packing techniques	1,6	Un
CO-6	acquire knowledge on packing techniques and their types	1	Un

SEMESTER – IV**Core – IV– Molecular Biology and Microbial Genetics**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the basic knowledge about the microbial genetic material and its functions.	6	U n
CO-2	compare various types of bacterial plasmids, their types, and its functions.	5	U n
CO-3	interpret the role and properties of transposons and IS elements.	7	U n
CO-4	illustrate classification of bacteriophage and their mode of replication and various mechanisms involved in bacteriophage cycle.	5	U n
CO-5	classify various mutations that take place in microbial genetics.	8	U n
CO- 6	recall transformation and transduction and their classification	5	Re

SEMESTER IV**Core Practical IV - Laboratory in Molecular Biology and Microbial Genetics**

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	examine spontaneous mutants.	4	An
CO-2	examine induced mutant by UV	5	An
CO-3	analyze antibiotic resistant mutant by gradient plate technique and UV induced auxotrophic mutants by replica plate technique.	6	An
CO-4	demonstrate plasmid DNA from <i>E.coli</i>	8	Un
CO-5	demonstrate AGE and PCR.	7	Un
CO-6	demonstrate conjugation in bacteria by genetic recombination.	8	Un

SEMESTER – IV	
Allied – IV	Mushroom Technology

CO NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain about the detailed information of edible and non – edible mushroom.	4	Un
CO-2	compare the cultivation of various types of mushrooms.	5	Un
CO-3	construct the mushroom house.	6	Cr
CO-4	compare different types of mushroom cultivation techniques and pure culture preparation.	7	An
CO-5	explain about economics of mushroom cultivation and their precaution.	6	Un
CO-6	interpret about the different modes of storage of mushroom.	5	Un

SEMESTER – IV**Allied Practical – IV Laboratory in Mushroom Technology**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	explain the cultural characteristics of mushroom	1	Un
CO-2	develop the basic requirements for the high production of mushroom	4	Cr
CO-3	interpret the laboratorial concept of mushroom technology	2	Un
CO-4	develop the mushroom cultivation skill	2	Cr
CO-5	explain the purpose of mushroom of cultivation	1	Un
CO-6	organize students to develop mushroom cultivation farms to encourage their entrepreneurship.	2,3,4	Ap

SEMESTER – IV**Skill Based Elective - Practical in Medical Laboratory Technology**

CO NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze and distinguish various types of blood groups	2,3,4	An
CO-2	evaluate the culture tests and understand the pathological diseases of humans	2,4	An
CO-3	analyze the physical, chemical and microscopic analysis of culture samples	2,3	An
CO-4	perform various techniques on isolation of micro-organisms for various sources	2	Ap
CO-5	understand the ESR and CRP tests for analysis	1,2	Un
CO-6	perform the qualitative tests for carbohydrates and proteins	2	Ap

SEMESTER – IV**Skill Based Elective****Practical in Parasitology**

CO NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the laboratory practices and know how to maintain the laboratory instruments	1,2	Un
CO-2	analyze and distinguish various types of stool samples	2,3,4	An
CO-3	analyze the detection of <i>Ascaris</i> , <i>E. histolytica</i> in from sputum sample.	2,3	An
CO-4	perform various techniques on isolation of micro-organisms for various sources	2	Ap
CO-5	understand the blood smear by field's stain.	1,2	Un
CO-6	perform the examination of <i>Leishmania</i> spp. from blood parasites	2	Ap

SEMESTER-IV	
NME II	Clinical Microbiology

CO No	Upon completion of this course students will be able to	PSO addressed	CL
CO-1	provide knowledge on the importance of Clinical microbiology	1,4	Un,An
CO-2	acquire knowledge on normal flora on human body.	1	Un
CO-3	acquire knowledge on various types of diseases.	6	Co
CO-4	provide information about the mechanisms of Infectious disease transmission	1,6	Un
CO-5	acquire knowledge on causative agent, treatment, prevention and control measures.	1,6	Un
CO-6	provide interpretation of laboratory tests in the Diagnosis of infectious diseases.	2	Co

SEMESTER- IV	
Self-Study (Optional)	Probiotics

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the basic knowledge on probiotics	3	Re
CO -2	acquaint with characteristics of probiotics	1,2	Kn
CO-3	analyse the aware the probiotics organisms.	2	Ev
CO-4	interpret the knowledge on the roles of probiotics.	1,2	Ap
CO-5	differentiate the probiotics and prebiotics	1,2	Co
CO-6	know the wealth of the probiotics and prebioticism	2	Kn

SEMESTER-V	
Common Core V	Psychology and Microbiology for Healthcare

CO.No	Upon completion of this course, students Will be able to	PSO addressed	CL
CO-1	learn the nature of psychology and microbiology	1	Re
CO-2	understand the importance of human system	1	Re
CO-3	gain knowledge about the acute stressors.	2	Un
CO-4	analyze the various problems in menstrual cycle	5	An
CO-5	develop proper lifestyle	3	Cr
CO-6	understand about sleep related disorders	6	Un

SEMESTER-V**Core VI****Immunology**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the structural features of the components of the immune System and functions.	4	Un
CO-2	compare humoral and cellular immunity and their relative significance.	4	Un
CO-3	interpret the characteristics of antigen and antibody reactions.	4	Ev
CO-4	influence of the roles of the immune system in both maintaining health and contributing disease.	4	Ev
CO-5	influence the immunological response and how it is triggered and regulated.	4	Ev
CO-6	analyze about the pathogenesis of disease, effect, treatment and maintenance to prevent disease.	4	An

SEMESTER- V	
Core VII	Clinical Microbiology

CO No	Upon completion of this course, students will able to	PSO addressed	CL
CO-1	understand the laboratory practices and know how to maintain the laboratory instruments	4	An
CO-2	analyze and distinguish various types of blood cells	2	Un
CO-3	understand the pathological diseases and explain the test for hepatitis, aids, and intestinal parasites.	6	Ev
CO-4	evaluate critical thinking of biochemical test	5	Un
CO-5	demonstrate the proficiency in basic methods of instrumentation and quantitative analytical skills used to-conduct biological research.	4	An
CO-6	determines the applied microbiology aspects of clinical-technique	1	An

SEMESTER-V	
Core- VIII	Biostatistics and Bioinformatics

CO No	Upon completion of this course, students Will be able to	PSO addressed	CL
CO-1	develop an understanding of the basic concepts of biostatistics	2	Cr
CO-2	explain the statistical methods	4	Un
CO-3	recall the collection, processing and Presentation of data	2	Re
CO-4	explain measures of central tendency	4	Un
CO-5	acquire knowledge on the application of bioinformatics in life sciences.	2	An
CO-6	realise the importance and application of biological database.	2	Ev

SEMESTER - V
Core Practical V Laboratory in Immunology and Clinical Microbiology

CO No	Upon completion of this course students will be able to	PSO addressed	CL
CO-1	demonstrate various immunodiffusion test.	1,2	Re
CO-2	develop their ability to perform qualitative and Quantitative assay of Widal test.	2	Un
CO-3	improve their ability to perform test for syphilis	3	Un
CO-4	analyze how to perform latex agglutination and Blood grouping techniques.	3	An
CO-5	examine various types of bacterial pathogens	5	Un
CO-6	demonstrate antibiotic susceptibility test	6	An

SEMESTER-V	
Core Elective	Microbial Nanotechnology

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire basic knowledge on nanotechnology	4	Un
CO-2	explain the basics of microbial applications of nanotechnology.	4	Un
CO-3	appreciate the structural and functional principles and synthesis of nano materials.	4	An
CO-4	acquire basic knowledge about biosensors and types.	2	Ap
CO-5	acquire knowledge on cancer diagnosis and treatment.	2,4	Ap
CO-6	get knowledge about drug designing and delivery	2,4	Ap

SEMESTER –V	
Core Elective	Marine Microbiology

CO No	Upon completion of this course,students will be able to	PSO addressed	CL
CO-1	get an idea about marine micro-biology and marine ecosystem	1	Un
CO -2	understand the diversity inmarine ecosystem.	1	Un
CO-3	know the Role of marine microbes in oil degradation	1, 2	An
CO-4	get the knowledge of Bio foulingand prevention	2	Un
CO-5	analyse Microbial indicatororganism and pollution	2	An
CO-6	understand Methods of studyingmarine microorganisms	2	Un

SEMESTER –V	
Self-Study (Optional)	Sea Food Processing

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	build an idea about the sea environmental science.	3,4	Ap
CO -2	elaborate the nutritional benefits of marine resources	3	Cr
CO -3	importance of food processing.	3	Ev
CO- 4	explain the preservation methods- canning, smoking, drying, chilling and freezing.	1	Un
CO -5	demonstrate to handle and store the fish products	3	Un
CO -6	design the fish products	4	Cr

SEMESTER- VI	
Core IX	Food Microbiology

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain food as a substrate for microorganisms.	3	Ev
CO-2	determines microbial contamination of food	3	Ev
CO-3	explain food preservation- physical and chemical methods.	1	Ev
CO-4	evaluate the causes of food spoilage-fruits, vegetables,dairy products, meat and fish.	3	An
CO-5	determine food borne disease and food spoilage.	4	Ev
CO-6	importance of food laws and regulations.	3, 4 ,5	Ev

SEMESTER-VI	
Core X	Industrial Microbiology

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	revise the idea about the usage of microorganisms in the field of industrial microbiology	3	Ap
CO-2	analyse the knowledge of various industrial products and its impacts on the society.	4	Un
CO-3	acquire knowledge in industrial fermentation	3	An
CO-4	have an insight on industrial microbiological techniques	2	Cr
CO-5	understands the in the field of industrial microbiology	1	Un
CO-6	have knowledge on antibiotic production	2,4	Cr

SEMESTER- VI**Core XI****Environmental and Agricultural Microbiology**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	analyze the soil microorganism and their properties.	1	An
CO- 2	determine the role of microbes on environment.	1	Ev
CO- 3	outline the interaction between microbes and soil.	4	Un
CO- 4	discuss about the types of waste and waste treatment	6	Cr
CO -5	determine the Biopesticide and Biofertilizer development	2	Ev
CO -6	evaluate the microbes used as Biopesticide and Biofertilizer	4	Ev

SEMESTER-VI	
Core-XII	Microbial Biotechnology

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	assess the intellectual property right & protection.	2	Ev
CO-2	illustrate the knowledge on the production of Biotechnological products.	3	Un
CO-3	interpret about the concepts and applications in enzyme biotechnology.	3	Un
CO-4	assume the mechanisms involved in biodegradation of pollutants.	6	An
CO-5	illustrate the cloning process	2	Un
CO-6	recall the concept of biogas, bioleaching, biodegradation of petroleum.	4	Re

SEMESTER –VI**Core Practical – VI - Laboratory in Food Microbiology and Industrial Microbiology**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the importance of food and industrial microbiology	1	Un
CO-2	understand different food microbes and their role.	1	Un
CO-3	explain food as a substrate for microorganisms.	3	Ev
CO-4	exploit microbes in the production of food	3	Ev
CO-5	explain food preservation- physical and chemical methods.	1	Ev
CO-6	evaluate the causes of food spoilage-fruits, vegetables, dairy products, meat and fish.	3	An

SEMESTER- VI

Core Practical VII – Laboratory in Environmental, Agricultural Microbiology and Microbial Biotechnology

CO NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	experiment with isolation of microbes from various agro samples.	5	Ap
CO -2	interpret the preparation of Bio fertilizer and its assay	4	Un
CO- 3	interpret staining of VAM	5	Un
CO -4	analyse antagonism between microorganisms	2	An
CO -5	demonstrate the isolation of Phosphate solubilizing bacteria	5	Un
CO- 6	identify nitrogen fixing bacteria	5	Ap

SEMESTER I	
Core I	General Psychology – I

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of psychology in historical timeline, its methods and areas	1	Re
CO 2	gain knowledge about the senses and its processes	1	Re, Un
CO 3	analyze attention and perception	1.4	An
CO 4	create new theories and concepts of emotion and motivation	2	Un, Cr
CO 5	learn forgetting, learning and thinking	2	Un
CO 6	understand and analyze the basic thinking processes	3	Un, An

SEMESTER – I**Allied 1****Elements of Sociology**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the nature, scope and subject matter of sociology	2	Re
CO-2	understand the primary concepts	2	Un
CO-3	understand about the social institutions	2	Un
CO-4	apply the concept of 'total environment', geographical environment and its impact on social life	2	Ap
CO-5	know about the individual and the society	2,7	Un, Ap
CO-6	evaluate the social differentiation and stratification	2,7	An, Ev

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SEMESTER – I	
Skill Enhancement course	Professional English for Psychology I

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	recognise their own ability to improve their own competence in using the language	9	Un
CO 2	use language for speaking with confidence in an intelligible and acceptable manner	9	An
CO 3	understand the importance of reading for life	9	Un
CO 4	read independently unfamiliar texts with comprehension	9	Un
CO 5	understand the importance of writing in academic life	9	An

CO 6	write simple sentences without committing error of spelling or grammar	9	Cr
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SEMESTER – II	
Core II	Developmental Psychology

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various developmental stages of man.	3	Un
CO-2	know the various developmental tasks.	3	Un
CO-3	acquire competence in the various skills of relevant stages.	3	Un
CO-4	learn the various hazards of each stage.	3, 4	Un , Re
CO-5	understand the basic principles of play interests in the various stages.	3,4	Un , Ap
CO-6	analyze the various problems of each developmental stage.	3	An

SEMESTER – II

Allied II

Biological Basis of Behavior

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop an awareness about hormones.	4	Un
CO-2	gain knowledge about internal regulation and biological origins of behaviour	4	Re
CO-3	acquire competence on the lateralization process	4,5	Un
CO-4	learn about the internal regulatory systems.	4,5	An

CO-5	analyze the reproductive behaviours in human beings.	3, 4, 5	An
CO-6	create an in depth understanding about emotional behaviours.	3, 4	Ev

SEMESTER – II	
Skill Enhancement course	Professional English for Psychology II

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	recognize their own ability to improve their own competence in using the language	9	Un
CO 2	use language for speaking with confidence in an intelligible and acceptable manner	9	An
CO 3	understand the importance of reading for life	9	Un
CO 4	read independently unfamiliar texts with comprehension	9	Un
CO 5	understand the importance of writing in academic life	9	An

CO 6	write simple sentences without committing error of spelling or grammar	9	Cr
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SEMESTER – III	
Core III	Abnormal Psychology I

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts of various disorders in life	5	Re
CO-2	compare and understand the various impacts of disorders	5	Un
CO-3	apply knowledge about handling disorders in daily life	4, 5	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	5, 7	An

CO-5	evaluate the means of developing an understanding about mental retardation	3, 5	Ev
CO-6	create new theories and concepts of handling disorders	5, 7	Cr

SEMESTER III	
Allied III	Psychological Statistics - I

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	learn the basic concepts and principles of statistics in psychology	6	Re
CO-2	compare and contrast the various measurements of statistics	6	Un

CO-3	apply knowledge about variability and correlation in statistics in psychology	6	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	6	An
CO-5	evaluate the means of developing an understanding about sampling and probability	6	Ev
CO-6	create new theories and concepts of statistics in psychology	6	Cr

SEMESTER - III

Skill based Elective Applications of Positive Psychology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the aspects of positive psychology	1	Re
CO-2	compare and understand the various aspects of positive psychology	1	Un
CO-3	apply knowledge about handling others in daily life in a positive way		

		1, 2, 8	Ap
CO-4	analyze the need of knowledge of positivity	1,8	An
CO-5	evaluate the means of developing an understanding about positive social interaction	1, 2, 7	Ev
CO-6	create new theories and concepts of positive psychology	1, 7	Cr

SEMESTER III	
Non Major Elective	Psychology for life

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of psychology	1	Re
CO-2	compare and learn the various branches of psychology		

		1	Un
CO-3	apply knowledge about concepts of memory and forgetting	1, 2	Ap
CO-4	analyze the need of psychology in daily life	1, 7	An
CO-5	evaluate the means of developing an understanding about human behavior	3, 4	Ev
CO-6	create new theories and concepts of intelligence	1, 8	Cr

SEMESTER III	
Self-Study Course	Human Rights

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of Human Rights	7	Re
CO-2	compare and contrast the various impacts of laws on women and children	7	Un

CO-3	apply knowledge about conceptual human rights in daily life	7	Ap
CO-4	analyze the need of knowledge of Human Rights in daily life	7	An
CO-5	evaluate the means of developing an understanding about the various laws for women	7	Ev
CO-6	create new laws and awareness about the laws among people	7	Cr

SEMESTER – IV	
Core IV	Abnormal Psychology II

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
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CO-1	learn the basic concepts of various disorders in life	5	Re
CO-2	compare and understand the various impacts of disorders	5	Un
CO-3	apply knowledge about handling disorders in daily life	5, 7	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	5, 7	An
CO-5	evaluate the means of developing an understanding about mental retardation	3, 5	Ev
CO-6	create new theories and concepts of handling disorders	5, 7	Cr

SEMESTER IV	
Allied IV	Psychological Statistics – II

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
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CO-1	learn the basic concepts and principles of statistics in psychology	6	Re
CO-2	compare and contrast the various measurements of statistics	6	Un
CO-3	apply knowledge about variability and correlation in statistics in psychology	6	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	6	An
CO-5	evaluate the means of developing an understanding about sampling and probability	6	Ev
CO-6	create new theories and concepts of statistics in psychology	6	Cr

SEMESTER IV

Skill based Elective

Sports Psychology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of sports psychology	6	Un
CO-2	apply the concepts learnt in personality development	2, 3	Ap
CO-3	analyze how psychology is applied in the field of sports	3, 6	An
CO-4	analyze the various emotions associated with sports	4, 6	An
CO-5	evaluate the social factors that influence sportsmanship	2, 6	Ev
CO-6	create new expertise and skill development programs essential for sports	2, 6, 7	Cr

SEMESTER IV

Non Major Elective	Self Development Skills
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CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of self development skills	3	Re
CO-2	compare and contrast the various skills of life management	3, 7	Un
CO-3	apply knowledge about self enhancement in daily life	7	Ap
CO-4	analyze the need for knowledge of time and anger management in daily life	4	An
CO-5	evaluate the means of developing self awareness and motivation	4	Ev
CO-6	create new theories and concepts of self development	3, 4	Cr

SEMESTER IV

Self-Study Course

Self and Inner Growth

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of inner child journey	3	Re
CO-2	compare and contrast the various issues related to inner child	3, 4	Un
CO-3	apply knowledge about Inner Child Work	3	Ap
CO-4	analyze the need of knowledge of Early Child Experiences	3	An
CO-5	evaluate the means of developing a Positive Belief System	3	Ev
CO-6	create new theories and Concepts of Healing the Inner Child	3, 7	Cr

SEMESTER- V

Common Core

Psychology and Micro Biology for Health Care

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of psychology and microbiology	1	Re
CO-2	understand the importance of human system	1, 3	Re
CO-3	gain knowledge about the acute stressors.	2, 3, 4	Un
CO-4	analyze the various problems in menstrual cycle	4	An
CO-5	develop a proper lifestyle	3, 7	Cr
CO-6	understand about sleep related disorders	5	Un

SEMESTER- V	
Core VI	Social Psychology

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of social psychology and other social sciences.	1, 2	Re
CO-2	understand the importance of the social perception and other theories.	2	Re
CO-3	gain knowledge about the prejudice and discrimination.	2	Un
CO-4	analyze the various problems in group formation and in decision making process.	2, 7	An
CO-5	develop the leadership quality in the young mind.	2, 7	Cr
CO-6	understand the meaning and perspectives of aggression.	5, 7	Un

SEMESTER V

Core VII

Counselling Psychology

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the process of counselling and the Ethics in counselling.	7	Un
CO-2	analyse the counselling process and its various stages.	7	An
CO-3	understand the concepts and theories in counselling.	7	Un
CO-4	know the meaning, person centered counselling and behavioural counselling.	7	Un
CO-5	use the theories of counselling in a practical way.	7	Ap
CO-6	understand the concept applications of counselling.	7	Cr

SEMESTER V	
Core VIII	Theories of Personality

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of various theories	1, 2	Un
CO-2	apply the concepts learnt in personality development	1, 2	Ap
CO-3	analyze how psychology is has evolved from various theories	1, 2	An
CO-4	analyze the various concepts proposed by various psychologists	1	An
CO-5	evaluate the personality factors associated with various theories	1, 2, 7	Ev
CO-6	create new expertise and development new skills	2, 7	Cr

SEMESTER V

Core elective

Forensic Psychology

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of forensic psychology	1, 5	Un
CO-2	apply the concepts learnt in personality development	2, 5	Ap
CO-3	analyze how psychology is applied in the field of crime and criminology	2, 5	An
CO-4	analyze the various emotions associated with crime	4, 5	An
CO-5	evaluate the social factors that influence the field of forensic psychology	2, 5, 7	Ev
CO-6	create new expertise and skill development programs essential for handling criminals	2, 5, 7	Cr

SEMESTER VI

Core IX**Educational Psychology**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of educational psychology	1, 3	Re
CO 2	gain knowledge about the various methods of doing research in Educational Psychology	1, 3	Re, Un
CO 3	analyze the various steps in inculcating psychology in education	3	An
CO 4	create new methods of teaching and learning methods	3, 6	Un, Cr
CO 5	learn the skills of developing Educational Psychology	1, 6	Un
CO 6	understand and analyze various problems in educational settings	3, 5, 6	Un, An

SEMESTER – VI**Core X****Health Psychology**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	introduce students to the various field of health psychology.	1, 4	Re
CO-2	know the various health beliefs and health promotions.	4, 5	Un
CO-3	analyze the various theoretical contributions to stress.	7	An
CO-4	evaluate the pain and coping outcomes.	4, 5	Ev
CO-5	create a knowledge about behavioural factors in chronic disease.	4, 5	Cr
CO-6	understand the problems of living with chronic illness.	5	Cr

SEMESTER - VI**Core XI****Organizational Behaviour**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of organizational behaviour	1,7	Re
CO 2	gain knowledge about various methods of doing research in the field of organizational behaviour	6, 7	Re, Un
CO 3	analyze various steps in inculcating psychology in shaping organizational behavior	2, 7	An
CO 4	impart innovative methods of teaching effective organizational behaviour	7	Un, Cr
CO 5	imply the skills required to shape the employee and employer's behavior	7	Un
CO 6	understand and analyze the challenges in organizational settings	7	Un, An

SEMESTER - VI	
Core XII	Consumer Behavior

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	understand the buying needs and patterns of the consumers	1, 2	Un
CO 2	analyze the thoughts, emotions and behaviors of the consumers	2, 3, 4	An
CO 3	understand the psychology behind the marketing strategy	2, 8	Un
CO 4	understand the changing trends in consumer behavior	2, 3	Un
CO 5	evaluate the psychology of consumers	1, 2	An
CO 6	create new techniques to attract consumers	2, 7	Cr

SEMESTER – I**Part III Core I Classical Algebra**

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	solve polynomial equations and simultaneous linear equations.	3	An
CO-2	form the equations from the given roots and identify and solve the reciprocal equations	4	Cr
CO-3	transform the equations by increasing, decreasing and multiplying the roots of the equations	3	Un
CO-4	locate real and imaginary roots of the equations	4	Un
CO-5	find the approximate values of the irrational roots of the equations.	3	Cr
CO-6	determine the roots of the equations by using various methods like Cardon's method, Ferrari's method.	3	Cr

SEMESTER – I	
Core II	Calculus

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	state the concept of curvature of a plane curve.	4	Re
CO-2	calculate the curvature of various curves in plane and space	4	Ev
CO-3	apply the fundamental concepts of Calculus to variety of real world problems.	3	Ap
CO-4	evaluate triple integrals and use them to find volumes in rectangular, cylindrical and spherical coordinates.	3	Ev
CO-5	compute definite and indefinite integrals of algebraic and trigonometric functions using formulae and substitution	3	Cr
CO-6	use Beta and Gamma function to solve different type of integrals and to understand Gamma function as a generalization of factorial function.	6	Ev

SEMESTER I / III**Allied Physics – Paper I - I B.Sc., Mathematics / II B.Sc., Chemistry**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the fundamentals of elasticity, stress and (K1)	1	Re
CO-2	solve problems related to uniform and non-uniform bending of beams (K3)	1	Ap
CO-3	estimate the thermal conductivity of a bad conductor (K2)	1,6	Un
CO-4	calculate the specific heat capacity of a liquid (K3)	1,6	Ap
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1,6	Ev
CO-6	outline dispersive power and resolving power of a grating (K4)	1,6	An

SEMESTER-I**Skill Enhancement Course - I Professional English for Mathematics - I**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	3	Un
CO-2	use language for speaking with confidence in an intelligible and acceptable manner	3	An
CO-3	read independently any unfamiliar texts with comprehension	3	Un
CO-4	understand the importance of writing in academic life	3	An
CO-5	write simple sentences without committing error of spelling or grammar.	4	Un
CO-6	develop critical thinking skills and get culturally aware of the targetsituation	3	Cr

SEMESTER – II	
Core III	Analytical Geometry of Three Dimensions

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the fundamental aspects of three-dimensional geometry.	1	Un
CO-2	represent simple three-dimensional figures using two-dimensional drawings.	3	Un
CO-3	demonstrate basic mathematical understanding and computational skills in three dimensions.	8	Un
CO-4	apply algebraic methods to the study of curves and surfaces that lie in three dimensions.	4	Un
CO-5	apply geometric properties and relationships to solve problems in three dimensions.	4	Un
CO-6	develop logical thinking, geometric thinking and three-dimensional spatial ability.	6	An

SEMESTER – II	
Part III Core IV	Differential Equations

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	verify whether a given function is a solution of a given ordinary differentialequation (as well as verifying initial conditions when applicable).	8	An
CO-2	classify ordinary differential equations into linear and nonlinear equations.	4	Un
CO-3	solve first order linear differential equations.	3	An
CO-4	find the general solution of second order linear homogeneous equations withconstant coefficients.	3	Cr
CO-5	use the laplace transform to compute solutions of second order, linearequations with constant coefficients	3	An
CO-6	identify essential characteristics of ordinary and partial differential equations.	3	Un

SEMESTER II / IV**Allied Physics – Paper II - I B.Sc., Mathematics/ II B.Sc., Chemistry**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall coulomb's law and the gauss law (K1)	1	Re
CO-2	discuss Lenz's law (K2)	1	Un
CO-3	distinguish self inductance from mutual inductance (K4)	1	An
CO-4	apply knowledge of electricity and magnetism to the nature of physical process and related technological advancements (K3)	1	Ap
CO-5	prove De Morgan's laws (K5)	1,6	Ev
CO-6	discuss the postulates of special theory of relativity (K2)	1	Un

SEMESTER-II**Skill Enhancement Course - II Professional English for Mathematics - II**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the knowledge for writing purposes such as Presentation, drafting and project report etc.	4	Ap
CO-2	evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication and presentation.	6	Ev
CO-3	apply techniques for developing inter-personal communication and to respond questions at a formal interview	3	Ap
CO-4	use critical thinking skills to face everyday life situations.	7	Cr
CO-5	develop strategic competence that will help in efficient communication	6	Ap
CO-6	apply the acquired knowledge and ideas in giving opinions during the meeting and making concluding remarks.	8	An

Semester – III**Part III Core V****Sequences and Series, Trigonometry**

CO.No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	know the important inequalities necessary to compare the real numbers.	3	Ev
CO-2	explain the difference between a sequence and a series in the mathematical context.	2	Un
CO-3	Identify boundedness, monotonic, limit points etc. of a sequence.	8	Un
CO-4	apply various tests to verify the convergence or divergence of a given sequence and also the series.	4	Ap
CO-5	gain a basic knowledge about analysis which helps them in higher studies.	3	Re
CO-6	reconstruct the formulae which are accustomed in elementary levels	4	Ev

Semester - III		
Part III	Allied	Statistics I

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the difference between the central moments and general moments	1	Un
CO-2	apply concepts and theorems in solving problems	4	Ap
CO-3	find correlation between two variables	3	Ap
CO-4	evaluate particular regression lines	3 and 7	Ap
CO-5	fit Binomial, Poisson and Normal distribution.	4	Ap
CO-6	compare moment generating function and cumulant generating function	2 and 7	Ev

Semester - III

Part III Skill Based Elective Introduction to Python Programming

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the fundamental concepts to write a Python Program	1	Un
CO-2	apply decision and repetitive structures in programme design and demonstrate the use of Python	5	Ap
CO-3	use string function in Python	7	Ev
CO-4	distinguish various Python Objects	4	An
CO-5	write python programs to solve problems	4	Cr
CO-6	use compound data using Python lists and tuples	5	Ev

Semester – III**Part III Skill Based Elective Quantitative Aptitude I**

CO No	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	solve the problems easily by using short-cut method with time management to face the competitive examinations	4	Ap
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	acquires the ability to understand and analyze the problem	2	Un
CO-4	apply quantitative methods to solve a variety of business problems	5	Ap
CO-5	solve the questions with accuracy and approach the problems in different manner	3	Cr
CO-6	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap

Semester – III**Part III NME I Mathematics for Competitive Examinations I**

CO No	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	simplify and evaluate algebraic expressions.	3	Ev

Semester – IV	
Part III Core VI	Modern Algebra

Co. No	Upon completion of this course, students will	PSOs addressed	CL
CO -1	describe and generate the basic algebraic structures such as Groups, Rings, Fields, Integral Domain, Euclidean Domain, etc., and will identify examples of these specific constructs.	1	Ev
CO -2	have a working knowledge of important mathematical concepts such as order of Group, order of an element, generator of a cyclic group, index of a subgroup, characteristic of a Ring, Maximal and Prime Ideals etc.,	2	Un
CO -3	analyze relationship between abstract algebraic structures with familiar number system such as integers, complex and real numbers	2	An
CO -4	critically analyze and construct mathematical arguments that relate to the study of introductory linear algebra. (Proof and Reasoning).	4	An
CO -5	produce the group concepts in other science disciplinary	3	Ap
CO -6	illustrate the isomorphic structures	4	An

Semester – IV		
Part III	Allied	Statistics II

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the difference between the weighted index numbers and unweighted	1 and 2	Un
CO-2	compute the upper and lower control limits for different chart	3	Ev
CO-3	apply concepts and theorems in solving problems.	4	Ap
CO-4	demonstrate problem solving skills	3	An
CO-5	know type I and type II error	1	Cr
CO-6	classify the different test static and apply the correct test static	4 and 5	Un &Ap

Semester - IV

Part III Skill Based Elective Documentation using LaTeX

CO.No	Upon completion of this course, students will be able to	PSO s addressed	CL
CO -1	know the difference between MS Word and LaTeX	3	Un
CO -2	understand the uses of LaTeX	2	Un
CO -3	apply LaTeX in their typing work	1	Un
CO-4	handle math symbols and tables	3	An
CO-5	become proficient in the use of software applications as used in an office environment.	3 and 8	Ap
CO -6	manipulate with the real life needs in preparing documents	3	Ap

Semester – IV	
Part III Skill Based Elective	Quantitative Aptitude II

CO No	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	acquires the ability to understand and analyze the problem	2	Un
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve mathematical problems using shortcut methods.	4	Cr
CO-4	build confidence to face the competitive examinations.	5	Cr
CO-5	solve the questions with accuracy and within the given time limit.	3	Cr
CO--6	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap

Semester – IV

Part III NME II Mathematics for Competitive Examinations II
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CO. No	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	use mathematical concepts in real world situations.	4	Ap

Semester - V

Part III Core VII (Common Core) Computer Oriented Numerical Methods

CO. No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to numerical analysis.	5	Ap
CO-3	discover the most appropriate estimate for the missing data.	1	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	6	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the use of the interpolation method to find the solution for the data.	4	Un

Semester - V		
Part III	Core VIII	Linear Algebra

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	analyze and construct mathematical arguments that relate to the study of linear algebra. (proof and reasoning).	3	An
CO-2	work within vector spaces and to distill vector space properties	3	An
CO-3	solve systems of linear equations and determine whether a system of equations is consistent or not and find its general solution.	6	An
CO-4	compute eigenvalues and eigenvectors of a matrix.	4	Ap
CO-5	develop analytical thinking in R-Programming	5	An
CO-6	understand the concept of Inner Product Spaces	1	Un

Semester V	
Part III Core IX	Graph Theory

CO. No.	Upon completion of this course, students will be able to	PSO s addresse d	CL
CO-1	identify induced subgraphs, paths,cycles ,independent sets and coverings in graphs	1	Re
CO-2	determine whether graphs are Hamiltonian and/or Eulerian and to solve problems involving vertex and edge connectivity, planarity and crossing numbers	5	An
CO-3	combine theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	8	Un
CO-4	inspect the applications of graph theory	7	An
CO-5	model and solve real-world problems using graphs both quantitatively and qualitatively.	4	Ap
CO-6	develop an appropriate level of mathematical literacy and competency and formulate problems in terms of graphs, solve graph theoretic problems and apply algorithms.	6	Cr

SEMESTER – V	
Part III Core X	Real Analysis

Co No	Upon completion of this course, students will be able to	PSO s addresse d	CL
CO-1	interpret real number system, define and recognize the continuity of real functions	1	Re
CO -2	define and recognize the real functions and its limits	1	Re
CO -3	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	An
CO -4	determine the continuity, differentiability of functions defined on subsets of the real line	3	Ev
CO -5	apply the Mean Value Theorem and the intermediate value property to problems in the context of real analysis	5	Ap
CO -6	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	3	An

Semester –V	
Part III Core XI-	Vector Calculus and Fourier Series

CO. No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space	2	An
CO-2	compute gradient, curl and divergence of vector fields.	1 and 3	Cr
CO-3	use the gradient to find directional derivatives.	3	Ap
CO-4	solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems	8	Ap
CO-5	select and apply appropriate models and techniques to define and evaluate integrals	3	Ev
CO-6	know that any periodic function can be expressed as a fourier series.	6	Cr

Semester –V		
Part III	Core Elective	Discrete Mathematics

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand logic and mathematical reasoning to count or enumerate objects in a systematic way.	1	Un
CO -2	use truth tables for expressions involving the logical connectives .	8	Ap
CO -3	apply standard rules of inference and grasp the notions of lattices.	3	Ap
CO -4	understand Boolean algebra and truth tables.	1	Un
CO -5	evaluate and simplify expressions using the properties of Boolean Algebra.	5	Ev
CO -6	apply logical reasoning to solve a variety of problems.	4	Ap

Semester V		
Part III	Core Elective	Transforms

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the relation between Fourier and Laplace transforms.	4	Ap
CO-2	evaluate complex integrals by various methods.	1	An
CO-3	understand Z - Transforms	1	Un
CO-4	solve ordinary differential equations using Laplace transform.	1,4	An
CO-5	understand the applications of Laplace transform and Fourier Transform	1,5	Un
CO-6	apply the Transforms to various differential equations.	2	Ap

Semester –VI	
Part III Core XII	Complex Analysis

CO No	Upon successful completion of this course students will be able to:	PSO s addressed	CL
CO-1	compute sums, products, quotients, conjugate, modulus, and argument of complex numbers.	1	An
CO-2	understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.	2	Un
CO-3	evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem.	6	Ev
CO-4	know the condition(s) for a complex variable function to be analytic and/or harmonic.	3	Un
CO-5	compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues.	2	An
CO-6	demonstrate curve properties for image processing with transformation	6	Ap

Semester – VI	
Part III Core XIII	Modern Analysis

CO. No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO -1	gain knowledge of concepts of modern analysis, such as open sets ,closed sets, completeness, connectedness and compactness in metric spaces	1	Un
CO -2	write simple proofs on their own and study rigorous proofs	5	Ap
CO -3	develop a higher level of mathematical maturity combined with the ability to think analytically	2	Un
CO -4	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	Ap
CO -5	explain the basic theory of metric spaces and its application to function spaces.	3	Ev
CO -6	apply the theory to solve mathematical problems including the construction of simple proofs.	2	An

Semester VI		
Part III	Core XIV	Mechanics

CO. No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the equilibrium of forces	1	Un
CO-2	distinguish between parallel and non parallel forces	4	Cr &Ap
CO-3	know the types of friction laws	1	Cr
CO-4	apply friction laws in problems	5	Un &Ap
CO-5	understand the two types of impact and simple harmonic motion	1	Ap
CO-6	determine the simple harmonic motion	4	Ap

Semester –VI	
Part III Core XV	Operations Research

CO. No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	develop a fundamental understanding of linear programming models	1,3	Un
CO-2	solve dual linear programming problem and two-dimensional linear programming problem.	8	Ap
CO-3	apply the simplex method for solving linear programming problem	5	Ap
CO-4	interpret the mathematical tools that are needed to solve optimization problems and comprehend the concept of a Transportation Model and develop the initial solution for the same	4	Un
CO-5	apply the Hungarian method for solving assignment problems	5	Ap
CO-6	examine the significant impact of job sequencing system on total elapsed time management	8	An

Semester VI	
Part IV Core XVI	Coding theory

CO. No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the fundamental concepts of coding theory, types of error and control code technique.	1	Un
CO-2	perform with vectors, matrices and projective spaces over finite fields and polynomials.	4	Cr
CO-3	analyze the theoretical principles of source coding.	6	An
CO-4	analyze the notion of various decoding techniques.	3	An
CO-5	prove general facts about different codes and block control coding.	6	Ev
CO-6	apply the knowledge of perfect codes, hamming codes, extended codes and golay codes for error detection and correction.	5	Ap

SEMESTER- I	
Core I	Mechanics and Properties of Matter

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the principle of conservation of energy and linear momentum (K2)	1	Un
CO-2	D calculate the change in momentum of an object for the net force acting on the object (K3)	1	Ap
CO-3	analyse the motion of the projectile (K4)	1	An
CO-4	outline the fundamental concepts of stress and strain (K4)	1	An
CO-5	prove the relation connecting the three modulo of elasticity (K5)	1	Ev
CO-6	recall viscosity, coefficient of viscosity and surface tension (K1)	1	Re

SEMESTER I**Part III Allied – I****Allied Biochemistry -I**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	express chemical composition and the elements of life.	1,2	Un
CO 2	evaluate the importance of bioenergetics.	1	Ev
CO 3	demonstrate about the various energy rich compounds such as adenosine triphosphate, guanosine triphosphate, uridine triphosphate, cytidine triphosphate and acyl phosphate.	6	Ap
CO 4	distinguish water soluble and fat-soluble vitamins and analyze their composition, functions and deficiency symptoms.	2	An
CO 5	generate the knowledge on hormones producing organs and their functions and to know about the plant as well as animal hormones.	5	Cr ,Re
CO 6	evaluate the antibiotics role in affecting cell wall synthesis, cytoplasmic membrane and enzyme systems.	2,7	Ev

SEMESTER- I**SEC I****Professional English for Physics – I**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	draw flowcharts and mind maps (K1)	5	Re
CO-2	apply their own ability to improve their own competence in using the language (K3)	5	Ap
CO-3	criticise the use of language to speak with confidence (K5)	5	Ev
CO-4	discuss the importance of reading for life (K2)	5	Un
CO-5	write independently unfamiliar texts with comprehension (K1)	5	Re
CO-6	outline the importance of writing in academic life (K4)	5	An

SEMESTER- II	
CORE II	Thermal Physics and Optics

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the laws of thermodynamics to understand the concepts of transport phenomenon (K1)	1	Un
CO-2	discuss the transfer of energy through conduction, convection and radiation (K2)	1	Re
CO-3	demonstrate and determine the thermal conductivity of a bad conductor (K3)	1	Ap
CO-4	categorize the different types of aberrations in lenses (K4)	1	An
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1	Ev
CO-6	summarise the knowledge on polarisation of light and its changes upon reflection and transmission (K2)	1	Un

SEMESTER II**Part III Allied - I****Allied Biochemistry –II**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	discuss in detail about the nutritional values of milk, egg, meat, fish, vegetable foods, fruits, tea, coffee, cocoa and alcohol.	1	Un
CO 2	demonstrate the theories of biological oxidation decarboxylation, electron transport system and oxidative phosphorylation.	5	Ap
CO 3	describe the functions of blood and to discuss in brief about red blood cells, white blood cells, blood platelets, plasma and plasma protein.	6	Re
CO 4	evaluate how the minerals are important in our life interpret the various minerals and their recommended levels in food.	1	Ev
CO 5	analyse the relation between optical and electron microscope.	2	An
CO 6	develop the knowledge on instrumentation technique and to generate the real applications.	2	Cr

SEMESTER- II**SEC II****Professional English for Physics – II**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss in small groups based on the listening and reading passages (K2)	5	Un
CO-2	identify the articles, prepositions and pronouns in the given passages (K1)	5	Re
CO-3	apply the acquired vocabulary knowledge in their writing skills (K3)	5	Ap
CO-4	simplify the given comprehension (K4)	5	An
CO-5	argue on digital competence for academic and professional life (K5)	5	Ev
CO-6	write slogans and captions (K1)	5	Re

SEMESTER III	
Core III	Electricity and Electromagnetism

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall Current, Ohm's law and Kirchoff's law (K1)	1	Re
CO-2	apply Kirchoff's law to Wheatstone's network (K3)	1,6	Ap
CO-3	apply the principle of potentiometer to measure current and resistance (K3)	1,6	Ap
CO-4	compare self inductance and mutual inductance (K4)	1,6	An
CO-5	compare LCR series and parallel resonance circuit (K2)	1,6	Un
CO-6	evaluate the value of capacitance using Desauty's bridge (K5)	1,6	Ev

SEMESTER – III**Part III****Allied Mathematics – I**

CO.No.	Upon completion of this course, students will be able to	POs addressed	CL
CO-1	the equations from the given roots & approximate solutions of equations by applying Horner's method and Newton's method	1	Un
CO-2	develop and apply concepts of expressions and equations to investigate and describe relationships	5	An
CO-3	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	3	Ev
CO-4	calculate the radius of curvature, centre and circle of curvature.	5	Ev
CO-5	compute the gradient of a scalar valued function ,curl,and divergence of vector fields	3	Cr
CO-6	interpret basic definitions and classify the differential equations with respect to their order and linearity	1	Un

SEMESTER III	
Core Skill Based Elective	Instrumentation Physics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the types in instruments (K1)	4	Re
CO-2	evaluate arithmetic mean, deviation from the mean, average deviation, standard deviation (K5)	6	Ev
CO-3	summarize the characteristics of resting potential (K2)	4	Un
CO-4	compare active and passive transducers (K4)	4	An
CO-5	discuss the working of bio medical equipments (K2)	4	Un
CO-6	classify the applications of Physics in various fields of medicine (K3)	4	Ap

SEMESTER III	
NME I	Applied Physics I

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	list the different types of capacitors (K1)	4	Re
CO -2	discuss the method of soldering (K2)	4	Un
CO -3	compare audio frequency range and radio frequency bands (K4)	4	An
CO -4	present the usage of transducers (K3)	4	Ap
CO -5	define the terms of film structure and film speed (K1)	4	Re
CO -6	select the types of filter used in photography (K5)	4	Ev

SEMESTER IV	
Core IV	Electronics and Communication

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall semiconductors (K1)	2	Re
CO -2	explain a universal divider bias (K2)	2	Un
CO -3	construct inverting and non inverting amplifier (K3)	2, 6	Ap
CO -4	summarize the types of networks (K2)	2	Un
CO -5	prove Thevenin's and Norton's theorem (K5)	2, 6	Ev
CO -6	outline the principle of amplitude modulation reception (K4)	2	An

SEMESTER-IV**Part III****Allied Mathematics-II**

CO.No.	Upon completion of this course, students will be able to	POs addressed	CL
CO-1	identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	classify various types of partial differential equations and form the partial differential equation	3	Un
CO-3	solve differential equations using Laplace transform	5	An
CO-4	set up the regions and integrate double integrals in rectangular and polar coordinates.	2	Ev
CO-5	use Green's theorem to evaluate line integrals along simple closed contours of the plane	3	Cr
CO-6	identify and understand the concept of Beta integrals and Gamma integrals	2	Ap

SEMESTER IV**Skill Based Elective Physics for Competitive Examinations**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	evaluate the problems in gravitation and escape velocity (K5)	4	Ev
CO -2	recall surface tension and viscosity (K1)	4	Re
CO -3	discuss the laws of thermodynamics (K2)	4	Un
CO -4	distinguish the interference from diffraction (K4)	4	An
CO -5	apply Kirchoff's laws to solve problems (K3)	4	Ap

SEMESTER IV	
NME II	Applied Physics II

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	construct solar cookers (K3)	3	Ap
CO -2	recall conventional and nonconventional energy source (K1)	3	Re
CO -3	discuss the different types renewable energy sources (K2)	3	Un
CO -4	understand the Physics behind EEG, ECG etc (K2)	3,4	Un
CO -5	Categorize the types of optical fibres (K4)	1	An

SEMESTER IV**Self Study Course****Electrical Wiring and Appliances**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the tools used at home (K1)	4	Re
CO-2	discuss the system of domestic wiring (K2)	4	Un
CO-3	explain the principle of AC (K2)	4	Un
CO-4	classify the types of street lighting (K3)	4	Ap
CO-5	experiment the working of an electric iron (K3)	4	Ap

SEMESTER V	
Core V (Common Core)	Material Science

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	identify the basic symmetry elements and operations of crystals, distinguish the types of crystals and enumerate the various crystal imperfections (K1)	2	Re
CO – 2	rank the properties of new materials like metallic glasses, shape memory alloys, high temperature materials, smart materials and biomaterials and apply them in various walks of life (K5)	2	Ev
CO – 3	justify the wave nature of the matter and its experimental study(K5)	2	Ev
CO – 4	distinguish magnetic materials based on susceptibility(K4)	2,1	An
CO – 5	summarise the uses of magnetic materials in various field (K2)	2,1	Un

SEMESTER V	
Core VI	Digital Electronics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall binary numbers (K1)	2,6	Re
CO -2	summariase the functions of encoder and decoder (K2)	2,6	Un
CO -3	construct logic gates (K3)	2, 6	Ap
CO -4	analyse the construction of counters and shift register (K4)	2,6	An
CO -5	distinguish A/D from D/A conversions (K4)	2, 6	An

SEMESTER -V	
Core VII	Computational Physics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	describe programs for solving various problems in physics (K1)	4	Re
CO -2	distinguish between one dimensional and two dimensional arrays (K4)	4	An
CO -3	summarizes the various types of constructors (K2)	4	Un
CO -4	design a simple c++ program for function (K1)	4	Re
CO -5	test the program to write two hexadecimal numbers using 8085 (K5)	4	Ev
CO -6	solve arithmetic operations using 8085 (K3)	4	Ap

SEMESTER V**Core Elective****Renewable Energy Sources**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	construct solar cooker (K3)	3	Ap
CO -2	analyse the working of windmills used for power Generation (K4)	3	An
CO -3	list the renewable energy sources available in surplus (K1)	3	Re
CO -4	explain different types of solar water heaters (K2)	3	Un
CO -5	sketch out the classifications of wave system (K3)	3	Ap

SEMESTER – V	
Core Elective	Mathematical Physics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall scalar and vector function (K1)	6	Re
CO-2	discuss curl and divergence of a vector function (K2)	6	Un
CO-3	apply the fundamental properties of determinants (K3)	6	Ap
CO-4	evaluate problems in Fourier series (K5)	6	Ev
CO-5	analyse problems in Fourier transform (K4)	6	An
CO-6	discuss the properties of Laplace transform (K2)	6	Un

SEMESTER V	
Self Study Course	Biophysics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall Newton's law and Stoke's law (K1)	4	Re
CO -2	distinguish transverse waves from longitudinal waves (K2)	4	Re
CO -3	diagrammatically represent retina and photo receptor (K4)	4	An
CO -4	discriminate the transport of O ₂ and CO ₂ in blood (K5)	4	Ev
CO -5	apply Poiseuille's formula to determine the coefficient of viscosity(K3)	4	Ap

SEMESTER VI	
Core VIII	Relativity and Quantum Mechanics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	describe Michelson –Morley experiment (K1)	2	Re
CO –2	summarise the postulates of special theory of relativity (K2)	2	Un
CO –3	outline the De Brogli’s hyposthesis for the dualistic nature of matter waves (K4)	2	An
CO –4	relate the uncertainty condition between displacement and momentum; energy and time (K3)	2	Ap
CO –5	prove Bohr’s quantization condition for angular momentum (K5)	2	Ev

SEMESTER VI**Core IX****Atomic and Nuclear Physics**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the structure of atoms (K1)	2	Re
CO -2	understand the structure of nucleus and nuclear models (K2)	2	Un
CO -3	distinguish the properties of α , β , γ rays and their decay (K4)	2	An
CO -4	analyze the key features of nuclear fusion and fission (K3)	2	Ap
CO -5	evaluate half life, mean life, amount of substance left after disintegration (K5)	2	Ev

SEMESTER VI	
Core X	Opto Electronics & Fibre Optic Communication

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the basic principles of semiconductors (K1)	2	Re
CO -2	explain the formation of energy bands of semiconductors (K2)	2	Un
CO -3	outline the optical characteristics of semiconductors (K4)	2	An
CO -4	classify optical detectors (K3)	2	Ap
CO -5	analyze and classify the structure of optical fibres, its types and various optical losses (K4)	2	An

SEMESTER VI	
Core XI	Advanced Physics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the fundamentals of laser (K1)	4	Re
CO -2	summarise the applications of laser drilling (K2)	4	Un
CO -3	classify the polymers(K3)	4	Ap
CO -4	outline the structure of polymers (K4)	4	An
CO -5	criticize BCS theory (K5)	4	Ev
CO -6	discuss the materials and their properties for nuclear and space applications (K2)	4	Un

SEMESTER VI	
Core XII	Microprocessor 8086 and Microcontroller

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	conclude the architecture of 8086 microprocessor (K5)	4	Ev
CO -2	categorize addressing modes of the 8086 microprocessor (K4)	4	An
CO -3	discuss the instruction set of the 8086 microprocessor (K2)	4	Un
CO -4	recall the basic introduction to 8051 microcontroller (K1)	4	Re
CO -5	compile the assembly level programs using instruction set (K3)	4	Ap
CO -6	compare timers and counters (K4)	4	An

SEMESTER VI
Core Project

CO. No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	design, build and assess the working of scientific models individually as well as in groups (K6)	6	Cr
CO –2	plan research works related to crystal growth (K6)	6	Cr
CO –3	synthesize nano materials and compile the characteristics (K6)	6	Cr
CO – 4	assess the output of electronic projects (K5)	6	Ev
CO – 5	interpret the physical phenomena in theoretical projects (K4)	6	An

SEMESTER- I**Part III****Core I General Chemistry - I**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	explain the periodic properties of the different groups of compounds focusing on production methods.	1	Un
CO 2	arrange the nomenclature of different class of organic compounds and identify polarization of a bond with electronegativity.	1,3	Re
CO 3	discuss the fundamental concept of quantum mechanics.	1	Un
CO 4	understand quantum numbers and to know the rules for filling up of orbitals and predict electronic arrangement in orbits.	4	Un
CO 5	explain the basis of fundamental particles, nuclear forces, nuclear stability, natural and artificial radioactivity thereby apply the theory of radioactivity and nuclear reactions in various fields.	1,5	Un
CO 6	apply the knowledge about interfering radicals, common ion effect and solubility product.	8	Ap

SEMESTER I**Skill Enhancement Course – I Professional English for Chemistry - I**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	discuss their capability in using the language English in Chemistry.	8	Un
CO 2	express the Language in a confident manner.	8	Un
CO 3	analyse the need of the English language and its role.	8	An
CO 4	demonstrate the importance of writing English.	8	Ap
CO 5	interpret the importance of listening and to develop knowledge and to improve competency..	8	Cr, Ev
CO 6	identify the professional skills and identify the language level by themselves.	8	Re

SEMESTER – I	
Part III Allied – I	Allied Mathematics – I

CO.No.	Upon completion of this course, students will be able to	* PSOs addressed	CL
CO-1	the equations from the given roots & approximate solutions of equations by applying Horner's method and Newton's method	2	Un
CO-2	develop and apply concepts of expressions and equations to investigate and describe relationships	4	An
CO-3	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	3	Ev
CO-4	calculate the radius of curvature, centre and circle of curvature.	1	Ev
CO-5	compute the gradient of a scalar valued function, curl and divergence of vector fields	1	Cr
CO-6	interpret basic definitions and classify the differential equations with respect to their order and linearity	2	Un

SEMESTER I**Part III Allied – I****Allied Biochemistry -I**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	express chemical composition and the elements of life.	1,2	Un
CO 2	evaluate the importance of bioenergetics.	1	Ev
CO 3	demonstrate about the various energy rich compounds such as adenosine triphosphate, guanosine triphosphate, uridine triphosphate, cytidine triphosphate and acyl phosphate.	6	Ap
CO 4	distinguish water soluble and fat-soluble vitamins and analyze their composition, functions and deficiency symptoms.	2	An
CO 5	generate the knowledge on hormones producing organs and their functions and to know about the plant as well as animal hormones.	5	Cr ,Re
CO 6	evaluate the antibiotics role in affecting cell wall synthesis, cytoplasmic membrane and enzyme systems.	2,7	Ev

SEMESTER- II		
Part III	Core II	General Chemistry-II

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	recall the methods of purification of ores	1	Re
CO 2	illustrate the concept behind the different types of furnaces	1	Un
CO 3	explain the general characteristics and digital relationship of alkali and alkaline earth metals and discuss the preparation and uses of some alkali and alkaline earth metal compounds	2, 3	Un
CO 4	interpret the elements of symmetry, chirality, Newman projection, Sawhorse & Fischer formulae and apply the Cahn Ingold Prelog rule for ascertaining the geometric configuration (cis or trans and/or E or Z)	1, 2	Un, Ap
CO 5	predict the mechanism of aromatic substitution reactions and effect of o, m & p directing group and compare terminal & non-terminal alkynes, the acidic nature of acetylenic hydrogen	3, 6	Ap, An
CO 6	apply the principle of colligative properties in day to day life like kidney dialysis, reverse osmosis and describe the experimental methods of determining the colligative properties	4,5	Re Ap

SEMESTER II**Skill Enhancement Course – II Professional English for Chemistry - II**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	express the Language without fear.	8	Un
CO 2	apply easily into the workplace environment.	8	Ap
CO 3	develop the real values of English and to identify the hidden potential of their own competence.	8	Cr
CO 4	evaluate with the comprehensional activities and exercises.	8	Ev
CO 5	identify themselves attend the interview with boldness and enthusiastically.	8	Re
CO 6	analyse the impact of English in education.	8	An

SEMESTER-II	
Part III Allied - I	Allied Mathematics-II

CO.No.	Upon completion of this course, students will be able to	POs addressed	CL
CO-1	identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	classify various types of partial differential equations and form the partial differential equation	3	Un
CO-3	solve differential equations using Laplace transform	5	An
CO-4	set up the regions and integrate double integrals in rectangular and polar coordinates.	2	Ev
CO-5	use Green's theorem to evaluate line integrals along simple closed contours of the plane	1	Cr
CO-6	identify and understand the concept of Beta integrals and Gamma integrals	3	Ap

SEMESTER II	
Part III Allied - I	Allied Biochemistry –II

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	discuss in detail about the nutritional values of milk, egg, meat, fish, vegetable foods, fruits, tea, coffee, cocoa and alcohol.	1	Un
CO 2	demonstrate the theories of biological oxidation decarboxylation, electron transport system and oxidative phosphorylation.	5	Ap
CO 3	describe the functions of blood and to discuss in brief about red blood cells, white blood cells, blood platelets, plasma and plasma protein.	6	Re
CO 4	evaluate how the minerals are important in our life interpret the various minerals and their recommended levels in food.	1	Ev
CO 5	analyse the relation between optical and electron microscope.	2	An
CO 6	develop the knowledge on instrumentation technique and to generate the real applications.	2	Cr

SEMESTER- III	
Core III	Physical Chemistry-I

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	identify the phenomenon of catalysis in industry and biological systems and learn the basic concepts of adsorption and its applications in various walks of life	1	Re
CO- 2	discuss kinetic theory of gases and its relation with temperature and velocity of a gas and understand the deviation of gases from ideal behaviour using Van der Waal's equation	1,3	Un
CO- 3	classify, compare and discuss the preparation method and properties of colloids and also know the importance of colloids in day to day life,	1,2,7	Ap
CO-4	outline the statement of Nernst distribution law, its deviations and applications	2,3,4	An
CO- 5	compare the vapour pressure of partially miscible liquids and mixture of immiscible liquids and understand the theory of fractional distillation and steam distillation and its applications.	2,3	An
CO-6	appraise the chemistry behind the reversible reactions and nature of chemical equilibrium and apply Lechatelier's principle in various aspects.	1,2,3,4,	An

SEMESTER I / III**Allied Physics – Paper I - I B.Sc., Mathematics / II B.Sc., Chemistry**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the fundamentals of elasticity, stress and (K1)	1	Re
CO-2	solve problems related to uniform and non-uniform bending of beams (K3)	1	Ap
CO-3	estimate the thermal conductivity of a bad conductor (K2)	1,6	Un
CO-4	calculate the specific heat capacity of a liquid (K3)	1,6	Ap
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1,6	Ev
CO-6	outline dispersive power and resolving power of a grating (K4)	1,6	An

SEMESTER- III	
Skill Based Elective	Agricultural Chemistry

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	identify the importance of soil constituents and have an overview of the macro and micronutrients to promote agriculture.	1, 7	Re
CO- 2	compare the preparation and importance of chemical fertilizers and biofertilisers in agriculture	1, 7	Un
CO-3	aware of eco friendly vermi compost and gobar gas	2, 3	An,Cr
CO- 4	realize the importance of pesticides and rationalise their environmental hazards	1, 7	Ap
CO-5	understand the water quality standards and water quality parameters and analyse the case studies of heavy metal pollution like Hg, As, and Cd.	1,2,7	Un
CO-6	understand the processes used for purification of municipal water and treat waste water by using different methods	4,7	Un, Cr

SEMESTER III**Part III Skill -based Elective Dairy Chemistry**

CO. No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	know the quality parameters of milk	1,5	Re
CO - 2	categorize the types of different types of milk processing techniques	1, 3	An
CO - 3	understand the theory behind non fermented milks	1, 2	Un
CO - 4	determine the different constituents in milk	2, 4	Ap
CO - 5	estimate fat and solids in milk	5	Ap
CO - 6	assess the properties of different milk products	1 , 7	Ev

SEMESTER-III	
NME I	Everyday Chemistry

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	interpret the biological importance of water and relate the ill effects of water borne diseases and prevention	1, 5	Un,Ap
CO –2	describe the ignition temperature and flash point of fuels.	1,4,5	Re
CO – 3	identify the characteristics of solid liquid and gaseous fuels.	1	Re
CO – 4	recall the fundamental knowledge about constituents of paints and varnishes and their functions and predict fluorescent paints (traffic signal) and fire retardant paints.	2, 5	Re,Ap
CO – 5	explain the recovery of alcohol from molasses and sequence the chemistry of manufacture of paper.	2, 4, 5	Un, Re
CO – 6	describe the preparation and uses of Candle, Tooth Powder, Liquid blue, Black board chalk, Moth balls soap, shampoo, lipstick	1, 4,5	Re

SEMESTER III**Part IV Self Study Chemistry For Competitive Examination**

CO No.	Upon completion of this course, students should be able to:	PSO Mapped	CL
CO 1	differentiate homogeneous and heterogeneous mixtures	1	An
CO 2	explain the separation principles used in metallurgy	1, 6	Un
CO 3	apply the principles governing the filling up of electrons in the orbitals	1	Ap
CO 4	compare s, p, d and f block elements	1, 2	Un
CO 5	analyze Ionic, Covalent and Coordinate bond	1, 2	An
CO 6	examine the desalination of water using Reverse Osmosis	5, 7	An

SEMESTER- IV	
Core IV	Organic Chemistry-I

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	compare alcohols, nitroalkanes and alkyl nitrites, differentiate 1°, 2° & 3° amines by reactions and criticize the effect of substituent on the basicity of aromatic amines.	1,3	An, Ev
CO - 2	compile and characterize acetoacetic ester and malonic ester and define Sachse Mohr theory – Newman projection, Sawhorse & Fischer formulae and describe about the conformational analysis.	1, 5,7	Ap, Re
CO –3	recall the synthetic importance of organometallic compounds, explain Frankland reagent and its significance.	1,6,7	Re, Un
CO - 4	describe the preparation and properties of Thioalcohols and Mustard gas.	1, 5	Re
CO- 5	classify carbohydrates and compare and contrast the reactions and structure of glucose and fructose. Illustrate the structure and reactions of carbohydrate and discuss epimerization and mutarotation.	5,6,1	Ap, An, Un
CO - 6	illustrate the theory of resonance and tautomerism and identify the product of rearrangement reactions such as pinacol-pinacolone, Benzil-Benzilic acid, Curtius, Lossen, Favorskii and Fries rearrangement.	1,3	Un, Re

SEMESTER- IV	
Skill Based Elective I	Medicinal Chemistry

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	have an understanding about the classification of drugs and their mode of action.	1,4	Un
CO- 2	know the causes of common insect borne, air borne and water borne diseases and get an idea about the treatment for common diseases.	4, 5,7	Re
CO- 3	estimate the sugar and cholesterol levels in blood.	4, 5, 7	Ev
CO-4	aware about first aid rules and first aid box.	4	Ap
CO-5	know the types of blood pressure, treatment methods and about the cardiovascular drugs.	1,2,4,5	Un
CO-6	know about diabetics, its treatment methods and get an idea about some anti-convulsant agents.	4, 5	Re

SEMESTER IV	
Core Skill Based	Forensic Chemistry

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the origin of forensic science.	4	Un
CO - 2	distinguish the forms of finger printing.	1	Un
CO - 3	demonstrate the methods used in the detection of finger prints.	5	Ap
CO - 4	describe the different types of blood stains	4, 7	Re
CO - 5	explain the investigations in arson sites.	3, 4	Un
CO - 6	demonstrate the explosive investigations in various sites	4	Ap

SEMESTER- IV	
NME II	Industrial Chemistry

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the composition of petroleum and refining of petroleum and explain the octane number and cetane number.	1	Re, UnUn
CO-2	outline the manufacture of rubber and Gutta-percha. recall the importance of reclaimed rubber and foam rubber.	1,5	UnAn
CO-3	analyze fats and oils.	5, 8	An
CO-4	interpret the knowledge about saponification value and RM value.	5	Un
CO-5	explain the characteristics of food colorants and categorize the artificial and natural food colorants.	6, 5, 8	Un,An
CO-6	summarize the knowledge of PFA, FPO, FDA, drug license and relate essential commodities act, consumer protection act, AGMARK.	2,5	Un Ap

SEMESTER IV		
Part IV	Self Study	Applied Chemistry

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	differentiate between hard and soft water in terms of origin and content	7	Ap
CO - 2	analyse samples of water to assess their suitability for drinking	7	An
CO - 3	describe the process of manufacture of soaps	1	Re
CO - 4	aware of comparison of soaps and detergents.	5	Ap
CO - 5	understand the constituents of paints and varnishes and their functions	7	Un
CO-6	identify the different types special milks	1	Ap

SEMESTER- V	
Core V (Common Core)	Material Science

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	identify the basic symmetry elements and operations of crystals, distinguish the types of crystal systems and enumerate the various crystal imperfections.	1	Re
CO – 2	rank the properties of new materials like metallic glasses, shape memory alloys, high temperature materials, smart materials and biomaterials and apply them in various walks of life	7	Ev
CO – 3	justify the wave nature of matter and its experimental study and apply Bragg’s law for x-ray study.	1,2,3	Ev
CO – 4	distinguish magnetic materials based on susceptibility.	2	An
CO – 5	summarise the uses of magnetic materials in various field.	2	Un
CO – 6	outline the synthesis methods of nano materials.	2	An

SEMESTER- V	
Core VI	Inorganic Chemistry-I

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	extend knowledge about non-aqueous solvents.	1	Un
CO - 2	find the positions of the zero, d- and f block elements in the periodic table.	1	Re
CO - 3	explain the general characteristics of non-aqueous solvents d- and f-block elements and the general horizontal and group trends in them.	1	Un
CO - 4	compare the relative stability of various oxidation states in terms of electrode potential values.	1, 5	An
CO - 5	analyze the reactions of compounds of halogens, d and f block elements.	1, 5	An
CO - 6	summarize the structures, the properties, applications of silicones and silicates.	1, 2	Un

SEMESTER- V	
Core VII	Organic Chemistry II

CONo.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	recall the alcohol series, illustrate the effect of substituent on the acidity of phenols and explain the mechanism of Claisen, Benzoin, Perkin, Knoevenagel reaction- Wittig reaction- iodoform reaction	1,2,3,6	Re, Un
CO - 2	rewrite the properties of carbonyl and carboxyl compounds and explain the factors influencing strength of acid -effect of substituent in benzene ring	1, 2, 6	Cr, Un
CO -3	identify the type of the photochemical and thermal reactions and interpret the important applications of photochemistry in organic compounds.	1,7	Re, Un
CO – 4	recall the importance of heterocyclic compounds, alkaloids and terpenes	1, 4	Re
CO-5	predict the nature of compounds in heterocyclic compounds compare quinoline and isoquinoline	5	Ap
CO - 6	recall the preparation of NBS and wilkinsons catalyst and produce reagents in organic synthesis like Lithium Aluminium hydride, Periodic acid and illustrate the mechanisms of Reformatsky reaction- Cope elimination- Bayer-villiger oxidation	1,3,4	Re Cr Un

SEMESTER- V	
Core VIII	Physical Chemistry-II

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	list various thermodynamic parameters and its applications in different physical states of the systems and have a study about the first law of thermodynamics.	1 ,2 , 3	Re
CO- 2	interpret the concept of entropy and Second law of thermodynamics.	1,3	Un
CO- 3	relate the significance and application of Claussius-Claypeyron equation.	1,2,5	Ap
CO-4	analyse the concept of fugacity, Nernst heat theorem and third law of thermodynamics.	1, 3,4	An
CO- 5	appraise the concept of EMF, electrochemical series and its significance, concentration cells and applications of e.m.f.	2,3	An
CO-6	outline the importance of electrochemistry and its industrial application.	1,3	An

SEMESTER III**Part IV Self Study Course Informative Chemistry**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	recognize role of chemistry in drug design	5	Re
CO - 2	know the software used for drug designing	1,7	Re
CO - 3	facilitate the structure and types of MOOCs and practice flip class rooms	5	Cr
CO - 4	apply the concepts of Reduce, Reuse and Recycle	7	Ap
CO - 5	know the methods of disposal of Chemical waste and recognize the impact of chemical reactions on our planet earth	7	Re
CO - 6	identify the Nobel laureates in Chemistry	4	Re

SEMESTER- VI	
Core IX	Inorganic Chemistry - II

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	develop methods to synthesize the coordination compounds and explain the definition of coordination compounds, naming them and decide isomerism.	1, 6	Cr
CO - 2	examine the formation and bonding in coordination compounds.	1, 2	An
CO - 3	Apply the knowledge of bonding and identify the structure and bonding in metal carbonyls of mono, bi nuclear and poly nuclear carbonyls.	1, 5	Ap
CO - 4	Outline the reaction mechanism of coordination compounds.	1	An
CO – 5	describe the formation of metal clusters.	1	Re
CO-6	make independent research ideas in the field of bioinorganic chemistry.	1	Cr

SEMESTER- VI	
Core X	Organic Chemistry-III

CONo.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	apply green chemistry in day-to-day life, dry cleaning, versatile bleaching agent and implement an awareness about green chemistry and the methods of microwave assisted synthesis.	4,7,8	Ap
CO - 2	demonstrate various Theories of colour and constitution, know the applications of dyes and classify the polynuclear hydrocarbons.	1, 6	Re, Ap
CO - 3	state synthons and synthetic equivalent- Protection and deprotection of different groups and explain retrosynthesis of 5-hexanoic acid and applications of crown ethers	1,3,6	Re, Un, Ap
CO-4	apply the methods of extraction of Alkaloids and Terpenoids	6	Ap
CO - 5	apply Woodward-Fieser rule for calculation of absorption maxima of dienes and α, β unsaturated ketones and enumerate the applications of UV spectroscopy in coordination complexes.	1, 6	Ap
CO - 6	Categorize the theoretical principle, selection rules and instrumentation, absorption frequencies and applications of IR spectroscopy	1, 4,6	An

SEMESTER- VI	
Core XI	Physical Chemistry-III

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	recall the terminologies used in phase diagram and interpret phase rule as applied to one component system and two component system	1,3,4	Re
CO - 2	apply reaction kinetics to determine the rate of chemical reactions; understand the factors that influence rates of reaction.	1,2, 3,5	Ap
CO-3	compute the kinetics of the reaction to determine the reaction mechanism	1,2,4	Ap
CO - 4	summarize the chemical reactions under light and sound	3	Un
CO - 5	apply the concept of group theory to various molecules and outline the different symmetry elements, symmetry operations and point groups	1	Ap
CO-6	understand the theory and applications of rotational spectroscopy, IR, UV and NMR	1,2	Un

SEMESTER VI	
Elective	Polymer Chemistry

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	express the terminologies used in polymers and interpret the degree of polymerization.	1,3,4	Un
CO - 2	apply mechanism for determining molecular weight.	1,2, 3,5	Ap
CO-3	recall the properties of different polymers.	1,2,4	Re
CO - 4	summarize the polymerization techniques.	3	Un
CO - 5	outline the principle of polymerization reactions.	3	An
CO - 6	apply the concept of inhibitors and retarders and have a thorough knowledge of kinetics of polymerization have a basic knowledge of synthetic polymers and relate the biomedical applications of polymers.	1,2,3	Ap, Un

SEMESTER- VI	
Elective	Essential Topics in Chemistry

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	interpret the theory behind fermented milks.	1, 2	Un
CO- 2	define the types of different types of purification techniques.	1,3	Re
CO- 3	apply chromatographic techniques for the recovery of Organic substances.	2, 3,6	Ap
CO- 4	investigate the types of corrosion.	1, 2,4,6	Cr
CO- 5	categorize the constituents of paint and its uses.	1 , 2,4	An
CO- 6	evaluate the properties of conductive polymers.	1 ,2 ,4,6,7,8	Ev

SEMESTER VI	
Part III	Instrumental methods of analysis

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	have a basic knowledge of purification techniques	1 , 2 , 3	Re
CO- 2	understand the principles of different types of organic separations	1, 2	Un
CO- 3	know the types of theory and instrumentation of colorimetry and spectrophotometry	1,3	Re
CO- 4	enumerate the applications of nephelometry and turbidimetry	2, 3,6	Ap
CO- 5	analyze the compounds using TGA, DTA and DSC.	1 , 2,4	An
CO-6	have a basic knowledge about voltametric techniques and apply the concept of amperometry	1 , 2 , 3	Un

Semester I	
Core – I	C Programming

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe algorithm, flowchart, various operators and library functions of C language	1	Un
CO-2	compare and contrast loops	4	An
CO-3	understand the concept of storage classes and input /output statements and functions	1	Un
CO-4	implement different operations on arrays	2,6	Ap
CO-5	develop programs using pointers , structures and union	2,6	Ap
CO-6	describe the file operations	1,2	Un

SEMESTER- I**Allied – I****Mathematics for Computer Science**

CO.No .	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	create an argument using logical notation and evaluate if it is valid or not.	1	Cr
CO-2	apply logical reasoning to solve a variety of problems.	4	Ap
CO-3	compute measures of central tendency	4	Ap
CO-4	calculate and compare dispersion , Skewness, kurtosis	4	An
CO-5	compute the shortest path	1	An
CO-6	model problems in computer science using graphs and solve problems using graphs	1	Ap

SEMESTER- I**Skill Enhancement Course-I Professional English for Computer Science –I**

CO.No	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	7	Un
CO-2	use language for speaking with confidence in an intelligible and acceptable manner.	3	An
CO-3	understand the importance of reading for life	3	Un
CO-4	write simple sentences without committing error of spelling or grammar	7	An
CO-5	develop critical thinking skills and get culturally aware of the target situation	4	Cr
CO-6	develop communicative skill for professional collaboration	7	Cr

SEMESTER- II	
Core II	C++ Programming

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	know about object-oriented features.	1	Un
CO-2	develop program using inline ,friend function , overloading constructor and destructor	4	Ap
CO-3	develop the array of objects and demonstrate operator overloading	2,6	Un
CO-4	categorize various inheritance methods	1	An
CO-5	understand pointer operations	1	Un
CO-6	understand virtual function and file operations	1	UN

SEMESTER II	
Allied II	Digital Electronics

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand various number systems and boolean functions.	1	Un
CO-2	apply various methods to simplify boolean function.	4	Ap
CO-3	construct digital circuits for boolean functions with logic gates.	4	Cr
CO-4	design combinational circuits with logic gates.	4	Cr
CO-5	define sequential logic circuits.	1	Re
CO-6	analyse the operation of various flip-flops.	1	An

SEMESTER- II	
Skill Enhancement Course-II	Professional English for Computer Science –II

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic objective of the course and obtain strong professional vocabulary for its application at different platforms	7	Un
CO-2	apply the knowledge for writing purposes such as Presentation, drafting and project report etc.	5	Ap
CO-3	evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication and presentation.	7	Ev
CO-4	apply techniques for developing inter-personal communication and to respond questions at a formal interview	5,7	Ap
CO-5	apply critical thinking skills to face everyday life situations.	4	Ap
CO-6	develop strategic competence that will help in efficient communication	3, 7	Ap

SEMESTER- III	
Core – III	Java Programming

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	knowledge of the structure and model of the Java programming language	1,2	Re
CO-2	develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.	2	An
CO-3	apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.	2	Un
CO-4	design event driven GUI .	6	Ap
CO-5	Develop web related applications	8	Ap
CO-6	Develop applications using JDBC	6,8	Ap

SEMESTER- III	
Allied III	Data Structures

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compare various search methods	4	An
CO-2	implement hashing methods	4	Ap
CO-3	discuss applications of stack	1	Un
CO-4	create an expression tree for an expression and evaluate it.	2	Cr
CO-5	implement heap concepts	4	Ap
CO-6	compare and contrast sorting methods	4	An

SEMESTER- III	
Skill Based Elective	Microprocessors

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain basic components and structure of Microprocessor and Microcomputers	1	Un
CO-2	describe 8085 Microprocessor and Memory Interfacing.	1	Un
CO-3	classify the various 8085 Microprocessor instruction set.	1	Un
CO-4	develop Assembly language Programs for various arithmetic operations	2	Ap
CO-5	develop Assembly language Programs for time delays	1	Ap
CO-6	. understand stack and subroutine operations in 8085	2	Un

SEMESTER- III	
Skill Based Elective 2	E- Commerce

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain what is E-Commerce	6	Un
CO-2	Compare different business models of E-commerce	6	An
CO-3	Differentiate E-marketing versus traditional marketing	4	Ap
CO-4	Facilitate online marketing	5	Ap
CO-5	Implement E-advertising	5,8	Cr
CO-6	Devise security for E-Commerce	3	Cr

SEMESTER –III**Part –IV Non Major Elective - Introduction to Computers**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	understand the various type of computers	1	Un
CO-2	practicing with the concept number system	1	Ap
CO-3	understand the input and output devices of computer and there uses	1	Un
CO-4	explain basic concepts of computer software and the various types of software	2	Un
CO-5	classify operating system software and their functions	1	Un
CO-6	outline the concepts of computer networking and the devices used in computer networking	6	Un

SEMESTER- III	
Self Study 1	Computer Architecture

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the organization of basic computer	1	Un
CO-2	explain various types of instructions.	1	Un
CO-3	explain general register organization and stack organization	1	Un
CO-4	explain algorithms for arithmetic operations of various integer number systems	1	Un
CO-5	explain algorithms for arithmetic operations of floating number systems	1,4	Un
CO-6	discuss memory hierarchy with different types of memories.	1,2	Un

SEMESTER- IV	
CORE IV	RDBMS with PHP and MySQL

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain the DBMS	1	Un
CO-2	describe Data models	2	Un
CO-3	explain the variable usage in PHP	1	Un
CO-4	creating forms with conditional statements	1	Cr
CO-5	describe about arrays, files, cookies and functions.	2	Un
CO-6	create an application using php and mysql	4	Cr

SEMESTER- IV	
Allied – IV	Big Data Analytics

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of Big Data	1	Un
CO-2	describe Big data Analytics	4	Un
CO-3	explain Big Data Analytics Process	4	Un
CO-4	understand Machine Learning	6	Un
CO-5	understand artificial Intelligence	6	Un
CO-6	explain the Applications of Big Data	5,8	Ap

SEMESTER- IV	
Skill Based Elective 2	Cyber Security

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify how security issues in cyberspace raise ethical concerns	3	Un
CO-2	adapting Artificial Intelligence Ethics	6,8	Cr
CO-3	acquire the knowledge of Cyber laws, regulations in information Society	3	Un
CO-4	identify and explore the different types of Cyber Crimes	8	Un
CO-5	appraise the Cyber offences	5	Ev
CO-6	assess Cyber Bullying and digital literacy for protecting children from bullying.	8	Ap

SEMESTER-IV	
Part IV Non Major Elective	Introduction To Internet

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	outline the History of Internet	1	Un
CO-2	understand about E-mail and how it works	6	Un
CO-3	compare different types of browser and its tools	6	Ev
CO-4	explain Blogging and it's functions	7	Ev
CO-5	describe Electronic Publishing and applications	6	Un
CO-6	explain Social Networking and awareness on Social Networking	8	Un

SEMESTER IV	
Self Study (optional)	Web Technology

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	understand Internet standard and Internet protocols	1	Un
CO-2	demonstrate JavaScript	6	Ap
CO-3	develop dynamic web pages using JavaScript (client side programming).	5	Ap
CO-4	design interactive web pages using DHTML	5	Ap
CO-5	discuss how XML DTDs differ from XML schemas	1	An
CO-6	design a simple website	6	Ap

Semester -V

Common Core VII Computer Oriented Numerical Methods

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	recognize and apply appropriate principles and concepts relevant to Numerical Analysis.	6	Ap
CO-2	discover the most appropriate estimate for the missing data.	4	Cr
CO-3	analyze the errors obtained in the numerical solutions of problems.	4	An
CO-4	demonstrate the method of interpolation and find the solution for the data.	6	Un
CO-5	analyze and visualize data	4	An
CO-6	create and control simple plot and user-interface graphics objects in MATLAB	2,8	Cr

SEMESTER- V	
Core – VIII	Operating Systems

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Operating System Structure and the various operations , process of operating system	1	Re
CO-2	analyze the Various Scheduling Algorithms of Process Management	4	An
CO-3	explain the concept of Deadlock.	4	Re
CO-4	implement the various allocation methods of Memory Management	5	Ap
CO-5	discuss about open source software	6	Un
CO-6	compare Linux with other operating systems	6	An

SEMESTER- V	
Core IX	Python Programming

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain what is python and how to execute python programs	2	Un
CO-2	distinguish various python objects	1	An
CO-3	apply decision and repetition structures in program design.	2	An
CO-4	demonstrate the use of Python lists and dictionaries	1	Ap
CO-5	demonstrate how to read and write files Programs in Python	2	Ap
CO-6	develop Python programs using files.	5	Ap

SEMESTER- V	
Core – Elective I	Data Mining

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	implement Apriori algorithm	2	Ap
CO-2	compare different classification methods	4	An
CO-3	implement cluster analysis	6	Ap
CO-4	demonstrate the usage of various search engines	3	An
CO-5	discuss about data warehousing	6	Re
CO-6	compare and contrast OLAP AND OLTP	8	An

SEMESTER- V	
Core – Elective I	Introduction to IoT

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand and recall the characteristics and enabling technologies of IoT	8	Re
CO-2	analyse the appropriate transport protocols, addressing and identification techniques suitable for IoT Domain	6	A n
CO-3	explore the apt cloud services and cloud service providers for IoT based Smart services	8	A p
CO-4	discuss about challenges and obstacles of IoT	8	A n
CO-5	compare and contrast fog and cloud computing	4	A n
CO-6	describe IoT based Application to Monitor Water Quality	3	U n

SEMESTER –V	
Self Study Course III	Mathematical Reasoning

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	simplify various expressions	4	Ev
CO-2	determine Averages of various calculations	6	Ap
CO-3	evaluate Partnership in enterprises	3	Ev
CO-4	analyse Percentage computation	6	An
CO-5	evaluate profit and loss.	6	Ev
CO-6	apply Simple interest and Compound interest Calculation	5	Ap

SEMESTER VI	
Core – X	.NET Programming

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand .NET framework	1	Re
CO-2	develop console applications with c#	2	Ap
CO-3	create web server applications using ASP.NET	6	Cr
CO-4	implement validation controls	2	Ap
CO-5	design applications with server controls	2	Cr
CO-6	develop databases using ADO.NET	2, 8	Ap

SEMESTER VI	
Core – XI	Software Engineering

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	describe Software development Process	1	Un
CO-2	discuss software Requirements and Architectural Design	1,3	Un
CO-3	explain Reliability and Safety Engineering	6	Un
CO-4	understand component models and architectural patterns for distributed and embedded systems.	1	Un
CO-5	explain engineering principles and techniques in software development.	2	Un
CO-6	discuss Software Quality Management System	1	Un

SEMESTER VI			
Core – XII		Computer Networks	
Course Code: 21UCSC63	Hrs / week :5	Hrs / Semester:75	Credits :4

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Network and the various types of Network	1	Re
CO-2	analyze the structure of Switch and the Protocols.	4	An
CO-3	discuss Connection devices by using Wired LANs	1	Ap
CO-4	describe the various routing algorithms in network layer	4	Un
CO-5	define Network Security and other aspects of Security	1	Re
CO-6	acquire the basic knowledge of layers of OSI model	1	Re

SEMESTER VI	
Core – Elective II	Cloud Computing

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	examine the characteristics of cloud	3	An
CO-2	identify the technical foundations of cloud system architecture	3	An
CO-3	characterize the distinction between infrastructure , platform, software and service	6	An
CO-4	illustrate the use of load balancing techniques	5	Ap
CO-5	compare and contrast the various web services	8	An
CO-6	demonstrate the usage of mail services	7	An

SEMESTER VI	
Core – Elective II	Mobile Computing

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	distinguish different mobile techniques	8	Re
CO-2	install Android SDK	6	Ap
CO-3	design User Interface	5	Cr
CO-4	modify app to include multimedia content	6	An
CO-5	create app with Google Maps	3	Cr
CO-6	design messaging app	5	Cr

Management & Economics

SEMESTER –I		
Part III	Core I	Financial Accounting I

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand book keeping and accounting concepts and conventions as per Accounting Standards of India.	1,2,5	Un
CO – 2	prepare financial statements of sole traders in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	understand and prepare bank reconciliation statement.	1,5	Ap
CO – 4	demonstrate and compare the various methods of providing depreciation.	2,4,5	Ev
CO – 5	apply appropriate judgment derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ev
CO – 6	effectively demonstrate skills relating to rectification of errors.	2,4,5	Ap

SEMESTER –I		
Part III	Core II	Business Organisation

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts and latest developments in the organisation of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organisation.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	Un
CO – 4	appraise about MSME, recent changes in MSME sector, development of VSI under the plans, KVIC and its objectives .	1,6	Ev
CO – 5	know about the dominance of MNC in globalisation and globalisation of Indian business.	1,3,6	Un
CO – 6	analyse the pros and cons of globalisation in the business world and create new business models	4,5	An

SEMESTER –I		
Part III	Allied I	Business Information System

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain thorough knowledge about the fundamentals of MS Word	2,4,5	Un
CO – 2	familiarise with the calculations made in excel sheets	1,2,4	Ap
CO – 3	exhibit skills in power point	1,3,5	Ap
CO – 4	design the documents with various formats and designs	1,3,4,5	Ap
CO – 5	analyse the importance of MS Office in business enterprises.	1,2,6	An
CO – 6	create the methods of forming MS Access	1,3,5	Cr

SEMESTER I**Part IV Professional English for Commerce and Management - I**

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	improve their competence in using the language.	1,5,8	Un
CO – 2	be proficient in reading.	1,5,8	Ap
CO – 3	develop content with Pictures/Hints	1,5,8	Ap
CO – 4	apply their writing skills in academic life	1,5,8	Ap
CO – 5	write without error of spelling or grammar	1,5,8	Ap
CO - 6	identify the difference between brainstorming and brainwriting	1,5,8	Un

SEMESTER –II		
Part III	Core III	Financial Accounting II

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,2,4	Ap
CO – 2	prepare accounts of non-trading concerns and professionals and royalties	1,5,8	Ap
CO – 3	understand the concept related to consignment and jointventure with normal and abnormal losses	1,5	Un
CO – 4	prepare consignment and joint venture account	1,2	Ap
CO – 5	prepare the self-balancing accounts and sectional balancing accounts and its various adjustments	1,3,6	An
CO - 6	evaluate the process of computing royalties with minimum rent,short workings and sub lease	2,4,5	Ev

SEMESTER – II		
Part III	Core-IV	Principles of Marketing

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the role of wholesalers and retailers.	1,2,3,5	Ev
CO – 4	evaluate the importance of sales promotion and qualities of successful salesmen.	2,3,4	Ev
CO – 5	understand about the product planning, development and product life cycle through modification.	1,4	Un
CO – 6	analyse the pros and cons of the various channels of distribution.	4,5	An

SEMESTER II		
Part III	Allied II	Business Management

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various concepts in business.	1,2,3	Ap
CO – 3	assess the principles of direction and its importance.	1,4	Ev
CO – 4	familiarise with the controlling and co-ordination techniques.	1,4	An
CO - 5	analyse the importance of decision making in business.	1.2.3	An
CO - 6	exhibit knowledge and skills relevant to principles of direction	2,4,5	Ap

SEMESTER II	
Part IV	Professional English for Commerce and Management - II

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the role of internet in business	1,5,8	Un
CO – 2	examine the different modes of online communication	1,5,8	An
CO – 3	draft letters pertaining to business activities	1,5,8	Ap
CO – 4	demonstrate in dignified self presentation	1,5,8	Ap
CO – 5	evaluate the difference between public speaking and talking	1,5,8	Ev
CO -6	use language for speaking with confidence in an intelligible and acceptable manner	1,5,8	Ev

SEMESTER –III**Part III Core V Advanced Financial Accounting**

CO. No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	prepare partnership accounts in case of admission.	1,2, 5	Ap
CO – 2	have practical knowledge regarding the maintenance of partnership accounts in case of retirement and death of a partner.	1,2,5	Ap
CO – 3	work on partnership accounts in case of dissolution of a firm.	1,2,5	Ap
CO - 4	know about the maintenance of accounts relating to branch accounts and departmental accounts.	1,2,5	Un
CO – 5	calculate profits involved in sending goods at invoice price.	1,5,8	Ap
CO – 6	have working knowledge on the accounts prepared under hire purchase system.	1,5,6	Ap

SEMESTER –III	
Part III Allied	Business Mathematics

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the theory of indices	6,8	Un
CO – 2	use formulae, logarithms and mathematical expressions problems in equations	2,4	Ap
CO – 3	evaluate the methods of interest account and their basic applications in practice	1,5	Ev
CO – 4	analyse the mathematical skills required in mathematically intensive areas of business	4,7	An
CO – 5	measure the matrix rule	2,3	Ev
CO – 6	appraise the acquired knowledge and skills with practical problems in business mathematics	3,5	An

SEMESTER –III		
Part III	Core SB	E – Accounting

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the basic principles and concepts of computerized accounting	1,2	Un
CO-3	assess on the use and application of Tally	1,2	Ev
CO-4	describe about the concept of vouchers	2,4	Un
CO-5	prepare inventory accounting and prepare final accounts	1,5,8	Ap
CO-6	make use of cost category and cost centers in voucher	1,5	Ap

SEMESTER –III**Part III Non Major Elective Principles of Accountancy**

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the journal	1,2	Ap
CO – 4	prepare the ledger	2,8	Ap
CO – 5	prepare the subsidiary books	2,8	Ap
CO – 6	prepare Trading, Profit and Loss account and Balance Sheet	2,5	Ap

SEMESTER III	
Self Study Course	Customer Relationship Management

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of customer relationship management	2,3	Un
CO-2	identify the emerging trends of CRM in marketing	2,4,6	Un
CO-3	analyze the issues and problems in customer relationship management issues and problems	2,3	An
CO-4	analyse the technology of integrating CRM with ERP	5,6	An
CO-5	assess integration of CRM with data warehouse	4.8	Ev
CO-6	learn the implementation of CRM	3,4	Ap

SEMESTER –IV		
Part III	Core VI	Corporate Accounting

CO.No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the procedures on issue of shares.	1,2	Un
CO – 2	have working knowledge on redemption of preference shares and debentures.	1,4, 5	Ap
CO – 3	calculate profit prior to incorporation.	2,5, 8	Ap
CO - 4	have practical knowledge on the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 5	analyse the various schemes for capital reduction.	2,5,8	An
CO – 6	apply the procedures for the preparation of liquidator's financial statements.	2,5,8	Ap

SEMESTER –IV		
Part III	Allied	Business Statistics

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts of statistics and statistical tools.	6,8	Un
CO – 2	know the measures of central tendency and assess statistical averages.	2,4	An
CO – 3	test the tools on measures of dispersion that are useful for estimating variations.	3,7	Ev
CO – 4	evaluate whether there is correlation between two variables or not and relate regression for values with period.	1,5	Ev
CO – 5	apply the statistical tools for doing the project work.	1,6	Ap
CO – 6	appraise acquired knowledge and skills with practical problems in business statistics	5,8	An

SEMESTER-IV		
Part III	Core Skill Based	Company Law

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	discuss the provisions related to the formation of different types of companies.	1,2	Un
CO-2	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO-3	analyse the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO-4	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO-5	know the various requisites for conducting a valid meeting under the Companies Act,2013.	2,5	Un
CO-6	analyze the statutory procedure for the winding up of the company	2,7	An

SEMESTER –IV		
Part III	Non Major Elective	E-Banking

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge about banking system	1,2,5	Un
CO – 2	fill the forms used in banks	1,2,3,8	Ap
CO – 3	gain fundamental idea about e-banking	1,2	Un
CO – 4	use ATM, PoS and CDM	2,8	Ap
CO – 5	understand about Internet Banking	2,8	Un
CO – 6	describe about Mobile Banking	2,5	Un

SEMESTER – IV	
Part IV Self Study Course	Goods and Services Tax

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand basic concepts and provisions of the GST Act 2017.	1,2,3	Un
CO – 2	discuss the various concepts of levy of tax on the supply of goods and services.	2,5	Un
CO – 3	understand the rules for place of supply.	2,5	Un
CO – 4	understand the rules for time and value of supply.	5,8	Un
CO – 5	prepare tax invoice debit and credit notes	5,8	Ap
CO – 6	evaluate the payment of tax, returns, offences and penalties.	2,5	Ev

Semester – V
Core -VII (Common Core) Human Resource Management

CO No.	Upon completion of this course. students will be able to:	PSO addressed	CL
CO - 1	gain knowledge on the basic concepts of planning human resource and help them to understand basic techniques of business.	1.2	Un
CO - 2	understand the basic selection process in HR.	1.2.3	Un
CO - 3	know the importance of training and development in HR.	2.3.4	Ap
CO -4	gain knowledge on compensation methods and transfer policies	3.4	An
CO -5	know about the significance and problems in performance appraisal.	3.4.5	Ap
CO - 6	know about the methods of performance appraisal	3.4.5	Ap

SEMESTER –V		
Part III	Core VIII	Income Tax Law & Practice I

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961, exempted incomes and calculate Residential status.	1,2,3	Un
CO – 2	compute Salary income	4,5	Ap
CO – 3	compute Income from House property.	2,5	Ap
CO – 4	compute Profits and Gains	5,8	Ap
CO – 5	compute Capital Gains	5,8	Ap
CO – 6	compute Income from other sources.	5,8	Ap

SEMESTER –III		
Part III	Core IX	Modern Banking

CO. No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO-1	discuss the constitution, management and functions of RBI and commercial banks.	1,2,3	Un
CO- 2	know about banker, customer relationship	1,2,3	Un
CO-3	assess the duties, responsibilities of and statutory protection to paying and collecting banker.	1,2,5	Ev
CO-4	demonstrate and explain the usage of technology in banking	1,2	Ev
CO-5	examine the uses of Automated Teller Machine, Point of Sale and Cash Deposit Machine.	1,8	Ap
CO-6	assess the mode of operation of mobile banking.	1,2,5	Ev

SEMESTER-V		
Part III	Core X	Special Accounts

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the format of final accounts of Banking Cost, Insurance Cost and Social Responsibility Accounting	4,5	Un
CO-2	prepare the accounts for investments	1,2,5	Ap
CO-3	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-4	prepare voyage accounts	2,5,8	Ap
CO-5	know the statutory provisions relating to banking companies accounts and Insurance company accounts.	1,3,8	Un
CO-6	understand and prepare accounts for Social Responsibility accounting	1,8	Ap

SEMESTER –V		
Part III	Core Elective	Cost Accounting

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting and prepare cost sheet	1,5	Un
CO – 2	determine the elements of cost and the techniques of material control.	4,5	Ap
CO – 3	know the concepts of labour cost computation and control	1,5,8	Ap
CO - 4	make overhead allocation, apportionment and absorption of overheads.	1,5	Ap
CO – 5	understand the techniques of Contract costing and prepare contract account.	5,8	Ap
CO - 6	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Ap

SEMESTER –V	
Self Study	Women Entrepreneurs

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	examine the scope for Women Entrepreneurship	2,4	Ap
CO-2	study and assess the status and types of Women Entrepreneur	3,4,5	Ev
CO-3	discuss the assistance given by the institutions for the development of entrepreneurship	1,4	Un
CO-4	study the evolution of Entrepreneurship	1,4,8	Ap
CO-5	understand the concept of Entrepreneurial Development Programmes	1,6	Un
CO-6	assess the institutional support provided to Entrepreneurs	2,6,8	Ev

SEMESTER –VI		
Part III	Core XI	Income Tax Law and Practice-II

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Ap
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Un
CO -5	compute advance tax and TDS	5,8	Ap
CO – 6	compute income of individuals and firms and prepare the returns	2,5	Ap

SEMESTER –VI		
Part III	Core XIII	Management Accounting

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	discuss the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	examine the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Ap
CO – 3	evaluate the performance of a firm using funds flow statement and cash flow statement.	5,8	Ev
CO – 4	use marginal costing techniques for optimising cost and profit.	2,3,5	Ap
CO – 5	prepare different types of budgets	1,5	Ap
CO – 6	use the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	Ap

SEMESTER –VI		
Part III	Core: XIV	Logistics in Shipping Industries

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	identify basic concepts in logistics with special emphasis on maritime shipping.	1,2	Un
CO - 2	classify the types of ships and identify the procedure for shipping of India.	1,2,5	Un
CO – 3	evaluate the role and functions of service providers in shipping industry.	4	Ev
CO – 4	assess the role of ICD and CFS towards containerization.	1,4	Ev
CO – 5	evaluate the role of intermediaries with their functions.	1	Ev
CO – 6	evaluate the import and export procedures.	6	Ev

SEMESTER –VI	
Part III Core XV	Investment Management

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the sources of investments.	1,3	Un
CO-2	appraise various level of risks.	2,4	An
CO-3	discuss with primary market procedures.	3,6	Un
CO-4	assess the various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	An
CO-6	apply the tools to understand the overall marketing.	5,7	Ap

SEMESTER- I	
Core - I	MICRO ECONOMICS – I

CO. No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	describe and illustrate basic concepts such as Nature, Scope and Subject matter of Economics, The basics of Micro Economics and Macro Economics.	2, 4	Un
CO 2	identify and apply the important concepts and terminologies such as Utility analysis, law of demand and consumer surplus.	1,6	Ap
CO 3	understand the application of indifference curves and describe consumer equilibrium with the help of law of equi- marginal utility.	4	Cr
CO 4	analyse the operation of the law of variable proportions and identify the three stages of production	6	Ap
CO 5	state the concept of total product, average product and marginal product; explain the nature and relationship of total, average and marginal product curves;	2, 1	Cr
CO 6	describe the basic economic analysis and laws of production and consumer behaviour	7	An

SEMESTER- I	
Core- II	INDIAN ECONOMY – I

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	understand the growth process in the Indian Economy since independence. various aspects of economic development. To comprehend the basic characteristics of economic development and economic growth.	1,2,7	Un
CO 2	develop ideas of the basic characteristics of Indian economy, its potential on natural resources.	1	Un
CO 3	provide an analytical discussion of various economic and social issues of the Indian economy. To realize the causes and measures of poverty inequalities and unemployment.	4	An
CO 4	analyse the demographic trends in India. The importance of controlling population.	2,8	Ev
CO 5	understand agriculture as the foundation of economic growth and development, analyse the progress and changing nature of agricultural sector and its contribution to the economy as a whole.	4,6	An
CO 6	understand the Economic Development of Indian Economy. Population and Human Development	6,7	Un

SEMESTER- I	
Allied - I	STATISTICS –I

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	describe and discuss the key terminology, concepts tools and techniques used in statistics. Discuss critically the uses and limitations of statistics.	1	Un
CO 2	gain knowledge on organize, manage and present data. Outline the distinct method of using raw data in the form of frequency distribution	1,2	Ev
CO 3	introduces students to the concepts and techniques of presentation and summarisation of data. It introduces students to basics of sampling and statistical inference	4	An
CO 4	analyse statistical data using measures of central tendency. Apply knowledge of statistical measures such as Mean, Median and Mode for analysis and interpretation of data.	2,4	Un
CO 5	analyse statistical data using measures of dispersion and location. Analyse the different measures of dispersion that are useful in the field of psychology and education	1,6	An
CO 6	develop skills and knowledge to apply different types of data through graphs for analysing different descriptive measures.	4, 5	Cr

SEMESTER- I
Skill Based Enhancements Course-I Professional English for Economics-I

CO No.	Upon completion of discourse, students will be able to	PSO's addressed	CL
CO 1	develop an enhancement of the four basic skills of language – reading, writing, speaking and listening	3,6	Un
CO 2	understand the issues of economy by reading passages about it. Develop knowledge about the agriculture sector of the economy.	2	Ev
CO 3	have increased potential to communicate with accurate grammar and appropriate vocabulary. Develop competency in fields where oral skill is a requisite.	2,6	An
CO 4	have competency in fields where writing skill is a requisite. To have proficiency in writing skills at diverse levels of economy.	5,7	An
CO 5	demonstrate the knowledge of basic concepts in Economics.	2,6	An
CO 6	demonstrate an understanding of the concept, principles and issues in the field of economics.	5,8	Un

SEMESTER- II	
Core- III	MICRO ECONOMICS –II

CO. No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	identify and appraise various models of how markets are organized, and the price and output decisions for maximizing profit. Understand the difference between the firm and the industry; explain and illustrate the differences between the demand curve for a perfectly competitive firm and that for a perfectly competitive industry	1, 2	Ap
CO 2	describe characteristics of monopolies and a monopolistically competitive industry. Calculate and graph a monopoly's and monopolistic firm's costs, revenues, profit and losses	2,4	Un
CO 3	design and develop an appropriate wage structure for a firm	1,6	An
CO 4	make the student understand different types of market and levels of competition prevailing in the market.	1,2	Un
CO 5	analyse the relationship between inputs used in production and the resulting outputs and costs	1,5	Ev
CO 6	have a better awareness regarding different Factor Pricing Rent, Wages, Interest, Profit.	6,8	Un

SEMESTER- II	
Core- IV	INDIAN ECONOMY – II

CO No.	Upon completion of this course, students will be able to	PSO Addressed	C L
CO 1	comprehend the significance, policies and growth of the industrial sector in India.	2,5	Re
CO 2	enable the students to understand the challenges faced by the Micro, Small and Medium Enterprises.	4,8	Un
CO 3	providing a solid introduction to transportation demand and various types or modes of transportation.	1,6	Ev
CO 4	facilitate an understanding of the Balance of Payments. Explain the Foreign Direct Investment and Foreign Portfolio Investment. Evaluate WTO	1,2	An
CO 5	students will be able to understand how planning can develop an economy. Evaluation of five -year plans.	4, 5,7	Un
CO 6	students will get knowledge about IT and ITES in India.	1, 2	Ap

SEMESTER- II	
Allied- II	STATISTICS - II

CO. No	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	explain concept of correlation, analyze and interpret covariance and correlation coefficient, illustrate ordinary least squares and use it to estimate regression coefficient. Find the inter-relation between two or more phenomena with the help of curve fitting and correlation-regression analysis.	4	Un
CO 2	introduce the fundamental concepts of statistical modelling, particularly linear regression models.	1,2	Ap
CO 3	describe the components of time series, apply time series analysis in business scenarios, illustrate the different types of index numbers, and calculate index numbers.	1	An, Ev
CO 4	apply the statistical tools in business, economic and commercial areas with the help of time series, index numbers, etc	1,5	An
CO 5	provide essential knowledge of the theory and key properties of probability and random variables, and the application of these concepts in practical situations.	2,4,5	Un, An
CO 6	made a bridge between the elementary statistical tools and probability theory	1,2	Re

SEMESTER- II
Skill Based Enhancements Course - II Professional English for Economics - II

CO No.	Upon completion of discourse, students will be able to	PSO's addressed	CL
CO 1	Demonstrate knowledge and comprehension of major economic issues	2,4	Un
CO 2	Read a variety of texts critically and proficiently to demonstrate in writing or speech the comprehension, analysis and interpretation of those texts.	2,3	Ev
CO 3	Critically analyze, understand and make an informed critique of economy and different business practices.	1,4	An
CO 4	Think critically and creatively and conceptualize real-world problems from different perspectives.	4,7	Un
CO 5	Recognize and discuss the different concepts in Economics.	1,7	An
CO 6	Provide an in-depth understanding of economy through writing and group discussions.	3,5	Un, Ap

SEMESTER- III	
Core – V	MACRO ECONOMICS – I

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	understand the concepts of Macro Economics and its interrelations with Microeconomics	2, 4	Un
CO 2	compares calculation methods of national income	1, 4,6	Ap
CO 3	describe the relationships among GDP, net domestic product, national income, personal income and disposable income	1, 2,4, 6	Ev
CO 4	categorizes unemployment by types	4,7	Un
CO 5	identify the strengths and weaknesses of the Keynesian and classical model.	2, 4, 5,6	Cr
CO 6	construct and graph the consumption function	4,6	Un

SEMESTER- III	
Allied -III	MATHEMATICAL METHODS- I

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	know and apply the skills of commercial arithmetic in business life.	1, 2,4, 5	Un
CO 2	apply the basic concepts of equations in economics.	1, 4,7	Ap
CO 3	acquire knowledge about the linkage between mathematical techniques and economics.	2, 6	Ap
CO 4	use knowledge of content and mathematical procedures to solve problems and make connections between the different areas of mathematics.	6, 7	Un
CO 5	demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships	2, 3, 5	Un
CO 6	Explain and apply basic concepts of sets	1, 4	U

SEMESTER- III	
Core Skill Based	TOURISM ECONOMICS- I

CO No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	understand the nature of tourism and explore the reasons for the rapid growth of tourism.	2, 4, 7	Un
CO 2	assert and apply the method to develop an ideal itinerary and function of tour managers.	6, 7	Ap
CO 3	plan, lead and organize the effective and efficient operations through tourism formalities	6, 8	Cr
CO 4	view how the travel motivators promote social tourism, apply the concept to explore the demand, factors influencing tourism	4, 6, 7	Ap
CO 5	better understanding of Travel and Tourism Industry	2	Un
CO 6	understand the place of tourism in the service industry.	2,6	Un

SEMESTER- III	
Non Major Elective	Economics for Competitive Examinations – I

CO No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	describe and illustrate basic economic concepts of scarcity and choice.	1, 2, 4	Ap
CO 2	understand the concepts used, methods to measure and difficulties encountered in the calculation of National Income	2, 4	Un
CO 3	understand the concept of economic growth and development	2, 7	Un
CO 4	illustrate how economics can be used to create or analyse alternative approaches to promote development.	4, 5, 7	Cr
CO 5	analyse both the proximate and deeper factors that trap people in poverty or assist them to escape poverty	4, 6, 7	Ap
CO 6	identify and differentiate between the different types of unemployment	1, 4,7	An

SEMESTER- III**Self-Study / MOOC / Internship (Compulsory) Salesmanship**

CO No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	define salesmanship and evaluate the individual qualities a salesperson must process to succeed in building long-term customer relationships	1, 2	Un
CO 2	understand and relate selling with the Principle of Contingency Benefits.	2, 4	Un
CO 3	identify specific techniques involved in selling, i.e. prospecting, planning and making a sales presentation, negotiating buyer resistance, closing a sale, organizing a territory and managing time.	1, 4, 6	Cr
CO 4	understand the importance of building partnering relationships with potential customers.	2, 4	Un
CO 5	examine the ethical and legal issues in selling.	4	Ev
CO 6	demonstrate the ability to identify, analyze, and evaluate the four objectives of an effective sales approach	2, 4, 5, 6	An

SEMESTER- IV	
Core – VI	MACRO ECONOMICS – II

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	know the multiplier and identify the leakages of multiplier	1, 2	Un
CO 2	understand the acceleration principles	2,4	Un
CO 3	analyze different phases of trade cycle, demonstrate various trade cycle theories, understand the impact of cyclical fluctuation on the growth of business, and lay policies to control trade cycle.	2, 4, 6	An
CO 4	describe the business cycle and its primary phases	2,4	Ev
CO 5	compare and contrast the circumstances under which it makes sense to apply the Keynesian and Neoclassical perspectives	4,6, 7	Cr
CO 6	describe the role of financial markets play in an economy.	4,5, 7	Ev

SEMESTER- IV	
Allied -IV	MATHEMATICAL METHODS- II

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	understand the foundations of mathematics	1, 4	Un
CO 2	use equations, formulae, and mathematical expressions and relationships in a variety of contexts.	1, 2,4,	Un
CO 3	analyse and demonstrate mathematical skills required in mathematically intensive areas in Economics and business.	4,5,6	An
CO 4	apply the knowledge in mathematics(Matrices, Calculus)in solving business problems.	4,7	Ap
CO 5	acquire an introduction to apply a range of mathematical techniques to economic problems.	1, 5,7	Ap
CO 6	acquire lifelong skills to understand current economics and to investigate economic models using mathematical techniques.	2, 4, 6, 7	Un, Ap

SEMESTER- IV	
Core Skill Based	TOURISM ECONOMICS- II

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO - 1	identify and evaluate the elements of the tourism system and its interaction with the environment.	2,4	Ev
CO - 2	recognize and raise awareness for moral issues and dilemmas in tourism.	4, 5	An
CO - 3	provide information about tour packages	4,5	Un
CO - 4	assert and apply the method to develop an ideal itinerary and function of tour managers.	1, 7	Ap
CO - 5	understand the importance of transport and communication in travel tourism and hospitality industry.	2,4,5	Un
CO - 6	create an awareness on the economic impact generated by tourism.	2,4	Cr

SEMESTER- IV	
Non Major Elective	Economics for Competitive Examinations – II

CO No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	explain the types of public debt and how debt is repaid	2,4, 6	Un
CO 2	describe the process of credit creation of a commercial bank, describe the balance sheet of a commercial bank, explain the functions of commercial bank	2,4	An
CO 3	explain the main objective of monetary policy in under developed countries	4,5, 6	An
CO 4	explain the functions and constituents of financial system, explain money market, capital market and stock market	1,4,5	An
CO 5	explain the different concepts of terms of trade	4,7	An
CO 6	explain the structure of BOP, disequilibrium in BOP, causes of disequilibrium	4, 5, 7	Ap

SEMESTER-IV	
Self-Study paper (Optional)	Economics of Advertising

CO No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO 1	understand what advertising is and its role in advertising and brand promotion and the economic effects of advertising.	1, 2, 4	Un
CO 2	create advertisement copy and appreciate the growth of modern advertising	4, 7	Cr
CO 3	be able to identify, analyze, and understand the advertising environment	1, 4	An
CO 4	prepare the advertising message and fully integrate the creative process.	6, 8	Cr
CO 5	understand the importance of placing the message in conventional and “new” media.	2, 4	Ev
CO 6	know the importance of budget and analyse the factors affecting budget.	4, 6, 8	An

Semester – V
Core -VII (Common Core) Human Resource Management

CO No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO 1	gain knowledge on the basic concepts of planning human resource and help them to understand basic techniques of business.	6	Un
CO 2	understand the basic selection process in HR.	8	Un
CO 3	know the importance of training and development in HR.	2	Ap
CO 4	know about the transfer policies and gain knowledge on compensation methods.	5	Un & Re
CO 5	know about the significance and problems in performance appraisal.	1	Ap
CO 6	understand the promotional policies in business and identify the methods of performance appraisal.	2, 8	Un, Re & Ev

Semester- V	
Core -VIII	Fiscal Economics -I

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO 1	differentiate between public finance and private finance	6	Ap
CO 2	explain tax and non- tax revenue, differentiate between direct and indirect tax. explain shifting of taxation and effects of taxation	2	An
CO 3	classify the public revenue and its various sources; revenue receipts and non- revenue receipts. understand the tax and non-tax revenue.	1	Ev
CO 4	describe how and in which manner government spends. the causes of increasing public expenditure in the modern economies. explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy.	4	Ev
CO 5	identify the measures to reduce public expenditure.	6	Ev
CO 6	explain the types of public debt and how debt is repaid and analyse the latest government budget allotment.	2, 7	An

Semester- V	
Core - IX	MONEY AND BANKING -I

CO. No	Upon completion of this course. students will be able to	PSO addressed	CL
CO - 1	able to analyze the theoretical basis and practical implementation of monetary and foreign exchange policy. the adequacy of the current state of the economy and finances of the country and the challenges of development of state and society;	6	Ap
CO - 2	able to assess the effectiveness of implemented monetary and exchange rate policies. Including international benchmarking. Methods of quantifying the money supply. the monetary base and other indicators characterizing the monetary system of the country;	1, 2, 6	An
CO - 3	navigate the legislative and normative acts regulating the circulation of money and the use of instruments in their work;	1.3	Ev
CO - 4	analyze the proposals of the experts. legislators. government and the central bank with respect to monetary policy and to predict the possible consequences of their implementation	2. 3	Ev
CO - 5	deepening the previously obtained knowledge in the field of economic sciences. knowledge and understanding of the functioning of the monetary system and the currency markets. and of theoretical basis of monetary and exchange rate policies;	3	Ev
CO - 6	provide knowledge and skills in the field of economic theory and practice of implementing monetary policy.	1, 2, 5	An

Semester- V	
Core - X	INTERNATIONAL ECONOMICS

CO. No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	describing the benefits of international trade and defects	1	Un
CO - 2	familiar with the main economic theories and models of international trade.	2	Un
CO - 3	get aware of the likely distributional consequences of trade and thus of conflicting interests within an economy regarding trade liberalization.	4	Un & Ev
CO - 4	understand economists' arguments concerning trade policy and its analysis.	7	Un & Ap
CO - 5	apply economics to issues of the day reasoning surrounding globalization	8	Ap
CO - 6	have an elementary understanding of open-economy macroeconomics and the determinants of exchange rates and the balance of payments.	5	Un

Semester- V	
Core Elective	ECONOMICS OF WASTE MANAGEMENT

CO. No.	Upon completion of this course. students will be able to	PSO addressed	CL
CO -1	describe the components of solid waste management and the laws governing it.	1	Un
CO -2	discuss the solid waste collection systems. route optimization techniques and processing of solid wastes.	3	Un
CO -3	outline the design, operation and maintenance of different methods of treatment.	5	Ap
CO -4	explain the operation. and maintenance of sanitary landfill	1	Un
CO -5	examine the operation. and maintenance of Incineration	3	Un
CO -6	conclude the recent trends in reuse of solid waste	1	Un

Semester- V	
Core Elective	ENERGY ECONOMICS

CO. No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	deliver the importance of nature & scope of energy Economics	2	Un
CO - 2	give sound information on ONGC. OPEC. OAPEC. IEA and World Bank.	4	Un
CO - 3	understand the basics of energy resources and understand the usage of energy supply and demand.	7	Un
CO - 4	understand the classification and importance of energy resources	6	Un
CO - 5	know about the consequences and remedial measures of environmental crisis	7	Un & Ev
CO - 6	know about the impact of energy consumption on production and environment.	1, 7	Ap

Semester - V	
Common Skill Based Core	Computer for Digital Era and Soft Skills

CO. No.	Upon completion of this course. students will be able to	PSO addressed	CL
CO - 1	identify different types of computer systems.	1	Un
CO - 2	classify various types of softwares being used.	3	Un
CO - 3	compare various digital payments and use them in day-to-day life.	5	Ap
CO - 4	recognise the innovative technologies IoT and integrate it in various fields.	1	Un
CO - 5	analyze various social networking platforms and use them efficiently.	3	Un
CO - 6	distinguish various cyber-attacks and apply preventive measures.	1	Un
CO - 7	understand the various soft skills needed to become successful.	4	Ap
CO - 8	analyze self and adapt oneself to work in a team.	1	Un

Semester- V
Self-Study or On-Line Course (Optional) Self-Employment

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	demonstrate an understanding of the qualities necessary for self-employment.	1	Un
CO - 2	discuss the necessary prerequisites for being self-employed and define essential skills for becoming self employed.	2, 3	An & Ev
CO - 3	describe the basic principles underpinning self -employment. to include business and financial planning, employment legislation. sourcing supports and personal characteristics	1, 8	An
CO - 4	compile a personal profile by exploring skills. personal qualities and characteristics. interests. employment preferences. goals and matching profile to possible self-employment options	3, 6	An
CO - 5	prepare a basic business plan to include the idea for a product or service. a profile of the market or industry in which it could be employed. sources of support. financial implications	5	An
CO - 6	examine the suitability of self-employment as a personal option	2	Ev

Semester- VI	
Core XI	FISCAL ECONOMICS -II

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	differentiate public finance and private finance and explain tax and non- tax revenue, differentiate between direct and indirect tax and explain shifting of taxation and effects of taxation	4	Un & An
CO - 2	classify the public revenue and its various sources; revenue receipts and non- revenue receipts. understand the tax and non-tax revenue.	6	Ev
CO - 3	describe how and in which manner government spends, explain the causes of increasing public expenditure in the modern economies. explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy.	4	Ev
CO - 4	identify the measures to reduce public expenditure and explain the methods to repay public debt.	5, 8	An & Ev
CO - 5	describe the government budget. explain different types of budgets such as balanced and unbalanced budget and know the budgetary procedure.	1, 6	Ev
CO - 6	analyse the latest government budget allotment	2, 5	An

Semester- VI	
Core - XII	MONEY AND BANKING –II

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	explain and discuss why people hold money and why it is used in the trading process.	2	Un & Re
CO - 2	provides students with theoretical building blocks that are needed for an understanding of the monetary theories and solve macro-economic models and assess the role and efficacy of monetary policy for various types of models in both classical and Keynesian set-ups.	4, 8	Ev & Ap
CO - 3	describe and explain the main channels of the monetary transmission mechanism. through which monetary policy can have real effects on the economy.	5	Ap
CO - 4	discuss the merits and disadvantages of different monetary policies used by Central Banks and discuss the present status of monetary policy.	2, 6	Un
CO - 5	understand and appreciate the relationship between money and inflation.	5	Un
CO - 6	develop understanding of the uncertainties policy-makers face and suggest remedies for policy makers to deal with these.	6	Un & Cr

Semester- VI	
Core -XIII	GROWTH AND DEVELOPMENT

CO. No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO -1	understand the concept of economic growth and development and understand India's stage of economic growth.	2	Un
CO -2	identify India's achievements and failures in Five Year plans and describe the nature and meaning of economic development or underdevelopment. both in general. and as applied to people in specific developing countries.	4	Un & An
CO - 3	illustrate how economics can be used to create or analyse alternative approaches to promote development.	6	Ap
CO - 4	explain the major development problems. choices and opportunities currently faced by developing countries.	7, 8	Un
CO -5	select. assess and justify specific policy choices that developing countries might make to achieve their economic and social objectives.	5	Ev
CO - 6	analyse, synthesise and evaluate information drawn from the available data and appropriate theoretical tools. and to express their ideas orally and in writing.	1, 2 & 6	An, Ev

SEMESTER- VI	
Core – XIV	SHIPPING MANAGEMENT

CO No.	Upon completion of this course. students will be able to	PSOs addressed	CL
CO - 1	understand the economic aspects of maritime trade and shipping market.	2	Un
CO - 2	analyse the relationship between shipping and the shape and development of the world economy.	4	Ap
CO - 3	attain historic knowledge about how economic growth.international trade. and geopolitics have impact on demand for shipping services.	6	Un
CO - 4	have knowledge on the different shipping markets and the fundamental factors that shape supply and demand in these markets.	2	Un
CO - 5	analyse the market structure geographic structure.development and profitability of the different parts of the maritime industry.	9	Ap
CO - 6	calculate break-even rates for ships and calculate tonnage demand for a specific project based on given assumptions.	7	Un

Semester- VI	
Core - XV	Industrial Economics with Internship

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	understand Industrial growth and pattern and the role of Industrialization in Economic Development.	2	Un
CO - 2	identify the determinants of Industrial location. Technical, economic, infrastructural and other factors.	4	Ap
CO - 3	have an in-depth knowledge about Industrial productivity. its measurement. Scope and significance.	6	Un
CO - 4	apply knowledge of actual markets and firms within the context of the relevant theories and policies	4	Ap
CO - 5	apply analytical models of firm behaviour and strategic interaction to evaluate various business practices, including tacit collusion, entry deterrence, product differentiation, price discrimination and vertical restraints	1, 2	Ap
CO - 6	analyse various aspects of strategic interaction between firms. Describe and explain the pricing behaviour by firms with market power and its welfare implications	6	Un & Ap

Semester- VI	
Core –XV	Group Project

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO 1	understand research design and critically assess contributions to the literature.	2	An
CO 2	attain the skills needed to formulate and analyse models used in the particular field of Economics.	3, 4	Ap
CO 3	prepare and present original research papers in the particular field.	6	Cr
CO 4	improve generic skills like oral communication and written communication.	6, 8	Ap
CO 5	perform the interpretation and analysis of data.	1	An
CO 6	originate clarification and present the research report.	2, 6	Ev & Cr

Semester I	
Core – I	Principles of Management

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic principles, nature and levels of management.	1,4	Un
CO-2	understand the scientific approaches of management	4	Un
CO-3	know the importance of planning, its procedures and limitations.	1	Cr
CO-4	analyze the organizational structure and span of control with power and authority.	2,3,5	An
CO-5	understand the steps in staffing and directing and controlling.	1,8	Un
CO-6	identify the difference between power and authority.	7	Re

Semester I	
Core II	Accounting for Managers

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	apply cost accounting methods, and gain knowledge in preparation of books of accounts.	2,6	Ap,Cr
CO-2	have an effective understanding of analysis of depreciation and to apply the knowledge to prepare the final accounts of sole trader	1, 9	Cr, Ap,An
CO-3	understand the knowledge of material and labour cost.	1	Un
CO-4	employ critical thinking and skills to analyze financial data.	9	Re
CO-5	prepare cash and fund flow statement of accounts.	1, 9	Ap, Ev
CO-6	find the method of sharing gains in productivity with workers by rewarding them financially	5	An, Re

Semester I	
Allied– I	Business Environment

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept and levels of business environment	1,3	Un
CO-2	gain knowledge on business economic system	1, 4	Un, An
CO-3	have an effective knowledge on socio and cultural environment	1,3,4	Un, An
CO-4	observe knowledge on legal business environment	3	An, Cr
CO-5	inculcate the information of privatizations and impart information on private & public sector	3,7	Un
CO-6	inculcate knowledge on globalization	3, 5	Un, An

SEMESTER I**Part IV Professional English for Management - I**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	recognize their own ability to improve their own competence in using the language.	1,4	Un
CO – 2	understand the importance of reading for life	3	Un
CO – 3	read independently unfamiliar texts and understand the importance of writing in academic life	1,2,4,5	Un
CO – 4	write simple sentences without committing error of spelling or grammar	1,8	Ap
CO - 5	demonstrate reading and writing skills and to develop critical thinking skills	2,4,8	Ap,Cr
CO - 6	know the difference between brainstorming and brainwriting	1,8	Un,Ap

Semester II	
Core III	Organisational Behaviour

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the importance of organisational behavior and its various approaches.	1	Un
CO -2	learn the role of each individual in job performance.	4	Un
CO-3	deliver the concepts and principles of perception and learning.	1,3,5	Ap
CO-4	elaborate various motivational theories and importance of group behaviour and team building.	1,4,5,7	Un,Ap
CO-5	identify the various leadership styles and skills required for working in groups and organisational climate and to study the conflicts and culture	1,7,5	An, Ap
CO-6	inculcate the knowledge on group behavior and team building	7	Ap

Semester II	
Core IV	Business Statistics

CO.No.	Upon completion of this course- students will be able to	PSO addressed	CL
CO-1	understand the meaning- nature and methods of statistics.	1	Un
CO-2	identify population- sample parameter and sampling frame.	6	An
CO-3	determine the sample as a voluntary response sample or a convenience sample.	1-6	An
CO-4	determine the approximate location of the median and quartiles.	6	An
CO-5	state the assumptions of inference about the regression model.	1	An-Cr
CO-6	measure the degree of economic changes overtime and combined fluctuations in a group related variables..	1,3	An,Ap, Cr

Semester II	
Allied II	Business Ethics and Corporate Social Responsibility

CO.No	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand and illustrate the theoretical foundation of business ethics	1	Un
CO-2	understand the knowledge of business and economic concepts from an ethical perspective.	3	Un
CO-3	know the importance of ethical conduct of business environment and community development.	1,3	Un
CO-4	expose the concepts of CSR and to analyse and resolve ethical issue in business.	1,3, 7	An
CO-5	know the role of government and application of procedures to perform the business and critically examine their own values.	1,3,5	CR
CO-6	confidently apply systematic ethical reasoning to business dilemmas and communicate effectively in oral and written forms.	4,6	CR

SEMESTER II	
Part IV	Professional English for Commerce & Management - II

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand the emailing concept in business	2	Un
CO – 2	know the different modes of online communication	1,2	Un
CO – 3	draft letters pertaining to business activities	4,6	Ap,Cr
CO – 4	demonstrate speaking skills and presentation skills	3,6,8	Ap,Cr
CO – 5	prepare power point presentations	1,8	Ap,Cr
CO - 6	use language for speaking with confidence in an intelligible and acceptable manner	1,2,8	Un ,Ap

SEMESTER III	
Core V	Business Economics

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of economics	1,3,5	Un
CO-2	learn about the concept of production and cost function	5	Un
CO-3	an awareness of market structure and competition	8	Ap
CO-4	evaluate the elements of money and inflation and national income	1,2,3	Ev
CO-5	exhibit ability to perfect competition	9	Un, Ap
CO-6	gain a knowledge of fundamentals of economics	1,5	Ap

SEMESTER III	
Allied III	Banking Practices

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	understand about the banker and customer	1, 3	Un
CO - 2	know about the types of deposits	4, 6	Un
CO - 3	identify loans and advances	1, 2 , 7	Re
CO - 4	understand the different approaches to technological change and to study the electronic banking.	2, 5	Un, Cr
CO - 5	understand the different modes of charging security and to study the benefits and constraints of banking.	2, 5	Un, Ap
CO - 6	understand the basic concepts of electronic banking.	1, 5	Un

SEMESTER III**CORE SB****Logistics Management**

CO.No.	Upon completion of this courses, students will be able to	PSO addressed	CL
CO - 1	understand the concept of logistics management and its evolution	1	Un
CO – 2	impart the knowledge on logistics transportation	7	Un
CO – 3	understand the importance of logistics to the economy	2	Re
CO – 4	gain knowledge on performance measurement and logistics audit	5	Un,Cr
CO – 5	provide knowledge on types of inventory among global logistics	3, 5, 7	Cr, Re
CO – 6	know about supply chain management	2,4	Cr

SEMESTER III	
NME I	Introduction to Management

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the meaning, nature and basic concepts of management.	1	Un
CO-2	understand the evolution of management	2	Un
CO-3	describe the diversity of management	4, 6	An
CO-4	understand the classical management theories of management and its functions	1,2, 4, 7	Un, Ap
CO-5	understand the behavioural and modern management theory and to study the qualities of managers	1,2, 4, 7	Un, An, Ap
CO-6	understand the functions performed by management	1,4,7	Ap

SEMESTER III	
Self-Study/Online course	Personality Development

CO.NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the importance of personality development	1	Un
CO-2	describe the emergence of goal setting in human life	1	An
CO-3	learn about self-monitoring	1	Un
CO-4	understand about perception and attitude and to analyze the importance of communication.	4, 3	Un, An, Cr
CO-5	know the knowledge on team building with leadership styles and quality	5	An
CO-6	learn the emergence of social graces.	8	Un, Ap

SEMESTER IV	
Core – VI	Quantitative Techniques for Managers

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the meaning, nature and methods of data collection.	1	Un
CO-2	determine the approximate location of transportations problems.	6	An
CO-3	determine the graphical solutions to maximize the problem	4, 6	Ap
CO-4	determine the models in operation research	1, 6	An
CO-5	determine the applications operation research	6	An
CO-6	know about the techniques in probability	4, 6	Ap

Semester IV	
Allied IV	International Business

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	communicate the nature theories and competitive advantages of international business.	3, 4	Un
CO-2	describing the modes of entering into international business-licensing, franchising, exporting and key projects.	4, 6	An
CO-3	elaborate the detailed study on MNC'S-growth, structure, merits and demerits.	5, 8	Ap
CO-4	impart the international marketing Intelligence-sources, characteristics and process of IMI'S	3, 6, 8	An
CO-5	identify the financing foreign Trade-functions of ECGC,EXIM.	1, 4, 8	An
CO-6	elaborate the procedure to be implemented for STC,AEPC,TTCI	3, 8	Ap

SEMESTER IV	
Core SB	Office Automation

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic nature, scope, duties and responsibilities of office management	1,4	Un
CO-2	understand scientific approach of office management	4	Un
CO-3	know the importance of Office system procedures and effective communication process	1	Cr
CO-4	analyze the office forms, design, management and control and to identify the difference between Electronic Records and Paper Analog	2,3,5, 7	Re, An
CO-5	understand office environment and building accommodation, layout and environment	1,5, 8	Un, Re, Ev
CO-6	evaluate modern tendencies in concept of office records management	5	Ev

SEMESTER IV	
NME II	Entrepreneurship

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	know the basic meaning of entrepreneur.	1	Un
CO-2	gain knowledge on classifications of entrepreneurs	1,3	Ap
CO-3	understand about starting a business	3,6	Un
CO-4	familiarize with project appraisal and to gain knowledge on project report	1,3, 6	Un, Ap
CO-5	understand about the functions of DIC and to study the importance and challenges of women entrepreneurship.	1, 3,4, 5	Un, An
CO-8	know the challenges faced by women entrepreneur	1,6	Un

SEMESTER IV**Self Study/Online course****Business Leadership Skills**

CO.No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the importance of management	1	Un
CO-2	describe the emergence of goal setting in leadership	1	An
CO-3	construct the knowledge strategy	2	Un, Cr
CO-4	understand perception and attitude and gain knowledge of strategic dimensions	5	Un, Cr
CO-5	investigate on leadership style and conflict management and to study the emergence of social graces	7, 8	An, Ap
CO-6	understand and analyse the importance of communication	3	An, Cr

Semester – V
Core VII (Common Core) Human Resource Management

CO No.	Upon completion of this course. students will be able to:	PSO addressed	CL
CO - 1	gain knowledge on the basic concepts of planning human resource and help them to understand basic techniques of business.	1.2	Un
CO - 2	understand the basic selection process in HR.	1.2.3	Un
CO - 3	know the importance of training and development in HR.	2.3.4	Ap
CO - 4	gain knowledge on compensation methods and transfer policies	3.4	An
CO - 5	know about the significance and problems in performance appraisal.	3.4.5	Ap
CO - 6	know about the methods of performance appraisal	3.4.5	Ap

SEMESTER V	
Core VIII	Research Methodology

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the objectives of research, types of research and criteria of good research.	1	Un
CO-2	know the research problem and research design.	2	Un, Re
CO-3	gain knowledge of sampling design and methods of data collection and to construct the questionnaires and interview schedule.	2,5	Un, Cr
CO-4	gain insights in the interpretation of data and report writing.	4	Re, Cr
CO-5	conduct pre-test for doing research.	1,4	Re
CO-6	understand and undertake pilot study and to write research report.	3,6	Cr, Re

SEMESTER V	
Core IX	Entrepreneurial Development

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the basic concept of entrepreneur & their roles.	1	Un
CO-2	understand the importance of entrepreneurship to the society	1,3	Un
CO-3	gain the information on women entrepreneurship and their barriers faced.	4	Re
CO-4	gain knowledge on product identification, agencies and its roles.	2,3, 8	Un, An, Ap
CO-5	understand the roles of small scale industries in economic development and to analyse tax concessions in rural areas.	1,2,4	An, Ev
CO-6	analyse tax concessions to small industries in rural and backward areas.	4	An

SEMESTER V	
Core X	Case Study Analysis

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the overall situations as well as to analyse the company's strategy.	8	Ev
CO-2	know the process key information needed for decision making.	5,7	An
CO-3	identify the company's strength and weakness.	6	An,Ev
CO-4	know the strategy and critical thinking all the disciplines of management.	1	Re
CO-5	analyse the criticism in organisation and manipulate the decision making techniques.	1,5,7	Un,An ,Ap
CO-6	identity the alternatives in research.	1	Ev

SEMESTER V	
Core Elective	IT Skills for Managers

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of information Technology	1	Un
CO-2	apply spell and grammar check in Ms Office and to Create word documents with formatting features	3,4,5	Ev,Cr
CO-3	know about Ms Excel in detail for calculations	5	An
CO-4	know about Ms Power Point for presenting company data	5	An
CO-5	gain knowledge in internet applications	6	Cr
CO-6	understand the history and basic concepts of computers	1	Un

SEMESTER V	
SELF STUDY PAPER	CONSUMER BEHAVIOUR

CO. No.	Upon completion of this courses, students will be able to	PSO addressed	CL
CO - 1	understand the concepts of consumer behaviour	1	Un
CO – 2	learn about different types of consumer decision	1	Un
CO – 3	investigate the environmental influence of consumer behaviour	4	Ap
CO – 4	know the right protection and role of consumer	3,6	An
CO – 5	understand the research process for consumer satisfaction	3	Un
CO – 6	learn the theories of post purchase evaluation	3	Un

SEMESTER VI	
Core XI	Digital Marketing

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept and different categories of digital marketing	1,3	Un
CO-2	gain knowledge on digital retail business model	1,4	Un, An
CO-3	effective knowledge on E-Payment system	1,3,4	Un, An
CO-4	know the difference between hacking and cracking	1,5	Ap
CO-5	understand the importance of mobile banking applications	1,5,8	Ap
CO-6	apply digital marketing plans to successful companies	6	Ap

SEMESTER VI	
Core – XII	Knowledge Management

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the value proposition used in knowledge management	2	Un, Re
CO-2	construct the knowledge strategy	2	Un, Cr
CO-3	gain knowledge of strategic dimensions	5	Un, Cr
CO-4	implementation of knowledge management system	4	Re, Cr
CO-5	describe the tools and techniques in knowledge management	1,4	Un
CO-6	evaluate the measures of knowledge management in global era	6	An, Re

SEMESTER VI**Core XIII Foreign Trade Import and Export Procedures**

CO.No.	Upon completion of this courses, students will be able to	PSO addressed	CL
CO - 1	understand the concepts of domestic and international trade and their difference	1	Un
CO – 2	explain about the general principles of tax	1	Un
CO – 3	determine the Sources of financing for foreign trade	1,3	Un
CO – 4	understand the documentation process for imports and exports	3,6	An
CO – 5	inculcate a basic knowledge about the intellectual property rights	3	An
CO - 6	practice the customs clearance import and export procedures	4	Ap

SEMESTER VI	
Core XIV	Management Information System

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about different types of components in information system.	2	An
CO-2	understand and apply executive support system.	2	Ap
CO-3	know about decision support system and internet technologies..	2,4,8	Un, Cr
CO -4	understand the basic technologies used in business.	1	Ap
CO – 5	identify virtual organisations.	4	Ap
CO - 6	understand and apply technology in establishing a business.	8	Ap

SEMESTER VI	
Core XV	Contemporary Issues in Management

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of management issues	1	Un
CO-2	evaluate the recent trends in management	4	Ev
CO-3	know about challenges faced by management and financial innovations	5	An
CO-4	create problem solving skill	3,5	Cr
CO-5	know about human resource issues in workplace	1,5	Un
CO-6	understand the psychological problems of workers	1	Un