

M.G.R.COLLEGE, HOSUR

Department wise UG-Outcomes

S.No.	UG Departments
1	B.A. ENGLISH
2	BBA
3	B.COM
4	B.COM CA
5	B.Sc., PHYSICS
6	B.Sc., CHEMISTRY
7	B.Sc., MATHEMATICS
8	B.Sc., COMPUTER SCIENCE
9	BCA
10	B.Sc., BIOCHEMISTRY
11	B.Sc., BIOTECHNOLOGY
12	B.Sc., MICROBIOLOGY
13	B.Sc., HMCS

1. DEPARTMENT OF ENGLISH

B.A ENGLISH

OBJECTIVES AND OUTCOMES

Programme Educational Objectives:

PEO1: To educate students both in the artistry and utility of the English language through the study of literature and other contemporary forms of culture

PEO2: To make students aware of the different communicative skills, and to develop among them an ability to effectively communicate in English, both in written and spoken modes

PEO3: To provide students with the critical faculties necessary in an academic environment, on the job, and in an increasingly complex, interdependent world.

PEO4: Above all, to help students explore what is to be human

PEO5: To understand people, culture, societies and events of the entire globe

Programme Specific Outcomes:

PSO1: The study of literature cultivates wisdom and a worldview

PSO2: It makes students appreciate their own cultural heritage and others also

PSO3: It helps students develop emotional intelligence and creativity

PSO4: It helps to consider multiple perspectives and understand the complexity of human nature

PSO5: Literature mirrors the society and its mannerisms

Programme Outcome:

On completion of the programme, students will be able to

PO1: Produce focused, organized, well-developed writings and demonstrate competence in English

PO2: Demonstrate critical thinking skills through analysis, synthesis, and evaluation of important ideas using their proficiency in LSRW

PO3: effectively evaluate and fluidly integrate relevant sources, using appropriate research tools and strategies.

PO4: Recognize and comprehend different varieties of English

I – BA ENGLISH (2021) SEMESTER -I

CORE PAPER – POETRY

OUTCOME:

- Broaden their vocabularies and to develop an appreciation of language
- Develop their critical thinking skills
- Develop a deeper appreciation of cultural diversity
- Develop creativity and enhance their writing skills

CORE PAPER II - PROSE

OUTCOME:

- Develop understanding the passage and grasp its meaning
- Enhance the reading with correct pronunciation, stress, intonation, pause and articulation of voice

ALLIED -I -SOCIAL HISTORY OF ENGLAND

OUTCOME:

- The study forms the basis for understanding the British literature and also it is a vital subject for those who opt to study English Literature at UG level.
- It helps to learn to think historically and to consider oneself as responsible, democratic citizen

PROFESSIONAL ENGLISH FOR ARTS AND SOCIAL SCIENCES-I

LEARNING OUTCOMES:

- Recognise their own ability to improve their own competence in using the language • Use language for speaking with confidence in an intelligible and acceptable manner. Understand the importance of reading for life • Read independently unfamiliar texts with comprehension
- Understand the importance of writing in academic life. Write simple sentences without committing error of spelling or grammar (Outcomes based on guidelines in UGC LOCF – Generic Elective) NB: All four skills are taught based on texts/passages

SEMESTER -II

CORE III- DRAMA

OUTCOME:

- Students would interpret the plays critically
- Students would be able to analyse the characters, style and dramatic devices employed by the Playwright.

CORE IV- INDIAN WRITING IN ENGLISH

OUTCOME:

- Study of Indian writers' writing in English gives knowledge of Indian sensibility, Indian subjects and Indian themes
- The study reflects Indian ethos and milieu

ALLIED – II - HISTORY OF ENGLISH LITERATURE**OUTCOME:**

- Studying the history of English literature helps the learners to get familiarity with the writers and their works of ancient England till modern England
- Students can learn about the traditions which inform English literature

Professional English for Arts and Science – II**Outcome of the Course:**

- **At the end of the course, learners will be able to, • Attend interviews with boldness and confidence. Adapt easily into the workplace context, having become communicatively competent. • Apply to the Research & Development organisations/ sections in companies and offices with winning proposals.**

SEMESTER – III**CORE - V – FICTION****OUTCOME:**

- Study of fiction exposes the learners to variety of characters in the society
- Fiction is a gym, where one can exercise psychologically and it is a way to measure emotional maturity
- Fiction is a tool to generate various kinds of feelings which are valuable in everyone's life

ALLIED – III LITERARY FORMS AND TERMS**OUTCOME:**

- Develops the learners' creative writing based on forms, structures and purposes □
- Learners understand how the English linguistic system is used for communication □
- Learners become more critical and analytical

SKILL BASED ELECTIVE COURSE – I**OUTCOME:**

- The study inspires and improves the learners' creativity □
- Broaden learners' thought processes, and logical skills

SKILL BASED ELECTIVE COURSE – II FILM STUDIES

OUTCOME:

- Learners critically interpret films□
- Gain a wide range of knowledge about cinematic visual styles, genres and theories

NMEC – I**SOFT SKILLS FOR CAREER COMMUNICATION****OUTCOME:**

- Learn to excel in careers

SEMESTER – IV**CORE- VI****AMERICAN LITERATURE****OUTCOME:**

- The study of American literature provides the learners the most available knowledge about its people, belief, perceptions and philosophy.
- Readers could explore their culture, religion and history.
- In general, it enhances the vocabulary and understanding of the language of that country.

ALLIED – IV – HISTORY OF ENGLISH LANGUAGE**OUTCOME:**

- Learners acquire knowledge of the origin and evolution of English Language□
- Learners would be able to recognize the root word and the words derived from it□
- Students would be familiar with the contributions of great writers□

SKILL BASED ELECTIVE PAPER - III**PERSONALITY TRAITS****OUTCOME:**

- Learners could examine characters and their growth
- Learners could also trace their personality progress

SKILL BASED ELECTIVE COURSE –IVCAREER**SKILLS AND E-LEARNING****OUTCOME:**

- Learners move towards hi-tech world
- Learners also become tech savvy in their careers

NMEC – II**COMMUNICATION FOR PLACEMENT**

OUTCOME:

- | |
|---|
| <ul style="list-style-type: none">• Develop learners' performance in workplaces |
|---|

Add-on Course

Internship Programme

OUTCOME:

The internship programme makes the students to
--

- | |
|---|
| <ul style="list-style-type: none">• Apply theory to real life. |
| <ul style="list-style-type: none">• Get a feel for the work environment. |
| <ul style="list-style-type: none">• Boost their confidence in bringing out their potential and increase their motivation□ |
| <ul style="list-style-type: none">• Build networks. |
| <ul style="list-style-type: none">• Enrich CV |
| <ul style="list-style-type: none">• Getting a job directly |
| <ul style="list-style-type: none">• Getting a reference or letter of recommendation |

SEMESTER-V

CORE VII – SHAKESPEARE

OUTCOME:

- | |
|---|
| <ul style="list-style-type: none">• By studying Shakespeare, one can gain knowledge about his powerful portrayal of words and famous quotes, which are still in vogue |
| <ul style="list-style-type: none">• Shakespeare's themes are timeless and continue to be relevant even after his death |
| <ul style="list-style-type: none">• Shakespeare's plays are not of an age, but for all time |

CORE – VIII

LINGUISTICS AND PHONETICS

OUTCOME:

- | |
|---|
| <ul style="list-style-type: none">• Learners get to know various analysis of language using phonetics |
|---|

CORE - IX-FEMINIST WRITING

OUTCOME:

- | |
|--|
| <ul style="list-style-type: none">• Study supports the feminist goals of defining, establishing and defending equal civil, economic and social rights for women. |
| <ul style="list-style-type: none">• It teaches how the concepts of gender, influence social and interpersonal behaviour. |
| <ul style="list-style-type: none">• Learners acquire the impact of gender identity on human relations historically and cross-culturally |

CORE – X-LITERARY CRITICISM

OUTCOME:

- Learners could describe a sense of the writer’s overall purpose and intent.
- The study makes the learners to assess and analyse the structure and language of the text.
- Learners would gain interpretative knowledge

ELECTIVE – I- ENGLISH FOR EMPLOYABILITY

OUTCOME:

- Learners would get a knowledge to face the challenges of communication in the job market

SEMESTER – VI

CORE – XI- COMMONWEALTH LITERATURE

OUTCOME:

- Learners could explore the literary elements of such literature
- It develops the analytical skills of the learners to take up further studies in such literature

CORE – XII- ENGLISH LANGUAGE TEACHING

OUTCOME:

- It enhances learners’ linguistic skills, besides vocabulary and grammar.
- It inspires the learners to go in search of world literature, which is available only in English

CORE – XIII – TRANSLATION STUDIES

Outcome:

- **Students would understand and respect other cultures portrayed in the literary texts.**
- **Students would become acquainted with few of the world classics available through translation**

ELECTIVE – II

ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS

OUTCOME:

- It enhances opportunities for employment as English teachers

ELECTIVE-III

COMMUNICATION SKILLS – PRACTICAL

OUTCOME:

- | |
|--|
| <ul style="list-style-type: none">• Develops the language skills of the learners |
| <ul style="list-style-type: none">• Provides plenty of job opportunities |

PROGRAMME OBJECTIVES AND OUTCOMES

➤ Programme Educational Objectives (PEOs)

PEO1: Graduates are prepared to be employed in IT industries by providing expected domain Knowledge.

PEO2: Graduates are provided with practical training, hands-on and project experience to meet the industrial needs.

PEO3: Graduates are motivated in career and entrepreneurial skill development to become global leaders.

PEO4: Graduates are trained to demonstrate creativity, to develop innovative ideas and to work in teams to accomplish a common goal.

PEO5: Graduates are trained to address social issues and guided to approach problems with solutions.

➤ MAPPING WITH PROGRAMME OUTCOMES (PSOs)

After completion of the programme the graduates will be able

PSO1: To understand the fundamental concepts of computer system, including hardware and networking.

PSO2: To Design, and analyze precise specifications of algorithms, procedures, and interaction behavior.

PSO3: To communicate effectively in both verbal and written form in industry and society.

PSO4: To apply the technologies in various fields of Computer Science, including Mobile applications, Web site development and management, databases, and computer networks.

➤ Programme Outcomes(POs)

After completion of the programme, the graduates will be able

PO1: To understand the fundamental concepts of computer system.

PO2: To Design and analyze precise specifications of algorithms and interaction behavior.

PO3: To apply the technologies in various fields of Computer Applications.

PO4: To communicate effectively in both verbal and written form in industry and society.

2. DEPARTMENT OF BUSINESS ADMINISTRATION(BBA)

COURSE OUTCOME			
Name of the Programme: Bachelor of Business Administration (BBA) For Candidates admitted in the Colleges affiliated to Periyar University from 2019-2020 onwards			
SEMESTER	STUDY COMPONENTS	COURSES	COURSE OUTCOME
I	Core - I	Principles of Management	<ol style="list-style-type: none"> 1. Understand various functions of Management 2. Know various principles of functions of management. 3. Recognize various styles of leadership
	Core - II	Business Communication	<ol style="list-style-type: none"> 1. Read quite widely to acquire business writing. 2. Get into the habit of writing regularly 3. It helps to understand the modern communications
	Allied - I	Business Mathematics and Statistics-I	<ol style="list-style-type: none"> 1. Identifies the relationship between variables 2. knows the statisticals tools widely 3. implement the forecasting techniques
		Professional English for Management-I	<ol style="list-style-type: none"> 1. develops students writing, speaking & listening skills in a professional way 2. it helps to improve management vocabulary. 3.it helps to apply the managerial terms in the respected area.
II	Core - III	Organizational Behavior	<ol style="list-style-type: none"> 1. They learn how to behave in an organization. 2. It helps to judge a person's behaviour and skills. 3.to understand key drives on job satisfaction, group formation, teamwork, culture,job performance & organizational commitments.
	Core-IV	Financial Accounting	<ol style="list-style-type: none"> 1. It explains the overall role and importance of finance in organization. 2. It helps to apply the knowledge of managerial accounting theories in business organization. 3. learn the basic finance management knowledge & their application in the enterprises.
	Allied - II	Business Mathematics and Statistics-II	<ol style="list-style-type: none"> 1. learn how to deal numerical and quantitative issues in business. 2.It covers the concept of index number, which is useful for decision making. 3. Learn to implement graphical, statistical & algebric techniques.

		Professional English for Management-II	<ol style="list-style-type: none"> 1. It helps us to evaluate the correct and error free-writing 2. It develops practical and oral presentation skills. 3. It develops interpersonal skills and positive attitudes in professional areas
III	Core - V	Marketing Management	<ol style="list-style-type: none"> 1. Develop marketing techniques that takes place in selling process. 2. to assess new product development, advertising, sales promotions etc 3. ability to apply the conceptual knowledge and analytical tools to encounter marketing issues
	Core - VI	Financial Management	<ol style="list-style-type: none"> 1. It helps to forecast the planning methods and rules of money of capital 2. It helps to determine the monetary reference needed by a business to functions all activities 3.It helps to know the value of money and its uses. <p>Learn how to use the financial resource effectively and efficiently</p>
	Core - VII	Human Resource Management	<ol style="list-style-type: none"> 1. they came to learn how to manage human resource in an organizational they learn how to get work from the employe such as motivation, benefits offering etc 3. Learn how to recruit the right candidates and place him in right designation <p>Knows the advanced appraisal techniques. learn on key areas on promotion, retirement, VRS etc</p>
	Core - VIII	Production and Material Management	<ol style="list-style-type: none"> 1. To understand the quality control in operation 2. Students get an opportunities to analyze and make decisions in managing materials. 3.The course provides a managerial framework used in the management of production functions including materials management, plant layout etc..
	Allied - III	Managerial Economics	<ol style="list-style-type: none"> 1. It teaches them to apply economic tools in management decision. 2. They learn that how the economic condition influence the business cycle 3. Economic is a vital aspect in business because it takes place in the demand forecasting supply schedule, pricing etc in all business functions

	SBEC-I	Fundamentals of Insurance	<ol style="list-style-type: none"> 1. It teaches us why insurance is needed and its benefits and types. 2. They came to know the working of insurance company and the details in the policy document. 3. Earlier, students know only general insurance, after studying, they came to know the different types of insurance and its benefits, shipment cargo etc.
	NMEC - I	Entrepreneurial Development	<ol style="list-style-type: none"> 1. Getting to learn things 2. learns about business competitive world 3. developing the economy
IV	Core - IX	Management Information System	<ol style="list-style-type: none"> 1. learn to support the operation, management, analysis and decision making system 2. an integrated user machine system 3. learns about accurate information
	Core - X	Cost Accounting	<ol style="list-style-type: none"> 1. able to prepare cash sheet 2. knows how to file record for auditors. 3. knows the fixation of pricing strategies 4. direct labours, direct material, direct expenses are learned
	Core - XI	Business Law	<ol style="list-style-type: none"> 1. awareness on business dealing in accordance with legal amendments. 2. It help to learn various law in all aspects of business ownership and management. 3. Examine how businesses can be held liable in tort for the actions of their employees. 4. Explore basic rules related to assignment of rights, delegation of duties, and exceptions under a contract 5. Explore basic rules of contracts.
	Core - XII	Taxation	<ol style="list-style-type: none"> 1. learns about government policies 2. To get knowledge about taxation law enforcement activities 3. widens the knowledge on various taxes for multiple purposes.
	Allied - IV	Money Banking and Trade	<ol style="list-style-type: none"> 1. get an idea an exchange rate between two currencies. 2. get an idea monetary plays roles in business 3. knows global business
IV	SBEC - II	In plant Training -(Viva -Voce)	<ol style="list-style-type: none"> 1. develops skill levels 2. knows wide scopes of programming languages 3. practical exposure

	NMEC - II	Human Resource Management	<ol style="list-style-type: none"> 1. studies the functions of HR in detail 2. study how to recruitment employee and selection procedure 3. study on various training methods to train employee, motivate employee. 4. determines Manpower planning techniques.
V	Core - XIII	International Business Environment	<ol style="list-style-type: none"> 1. gains knowledge on business culture 2. social responsibilities toward various business sectors 3. key areas on managerial skills , creating jobs and providing better services
	Core - XIV	Operations Research	<ol style="list-style-type: none"> 1. try to solve various statistical model problems. 2. develops to gain knowledge on calculation of demographic areas 3. Understanding of the practical applications of the subject. 4. Development of analytical thought process to help develop modeling
	Core - XV	Company Law	<ol style="list-style-type: none"> 1. assess the incorporation of the company 2. learns the legal process and procedures to wind-up of the company. 3. study the basic clauses to start up and run a business
	Core - XVI	Management Accounting	<ol style="list-style-type: none"> 1. helps to manage the resources better. 2. identifies trades in business 3. compare accounts with original budget or forecast
	Core - XVII	Fundamentals of Research Methodology	<ol style="list-style-type: none"> 1. helps to learn new facts 2. it develops new scientific tools concepts and theories to solve and understandable scientific and non-scientific problems 3. learns about data collection 4. how to write materials report writing
	Elective - I	Consumer Behaviour	<ol style="list-style-type: none"> 1. Students will gain the knowledge about consumer behaviour and its applications 2. Students will understand the psychological behaviour of consumer behaviour
	SBEC - III	Advertising Management	<ol style="list-style-type: none"> 1. brings the ads in more creative, innovative and attractive . 2. knows various promotional tools and measures. 3. How to manage distribution channels.
	VI	Core - XVIII	strategic management

Core - XIX	Financial Markets and Services	<ol style="list-style-type: none"> 1. learns how the financial sectors allocates funds to the companies 2. knows the banking functions widely in related to indian finance systems 3. key areas on money lenders, borrowers, tressure bills, commmercial papers, underwriters etc.
Core - XX	Entrepreneurial Development	<ol style="list-style-type: none"> 1. creates new and young entrepreneur in the society 2. learns on various business language, communicative skills
Core - XXI	Service marketing	<ol style="list-style-type: none"> 1. learns on marketing activities 2. gets knowledge on middlemen, transportations, warehouse, advertisement etc 3. Learns on service gap models, marketing mix.
Core - XXII	Project Work-Viva-voce	<ol style="list-style-type: none"> 1. get an idea that how to prepare annexure 2. well-verse in prepare reporting 3. gather broad knowledge on company 4. able to analyse how the data are collected, do surveys, etc 5. able to predict their findings and suggestions for problems individually 6. implement various statistical tools and techniques.
Elective - II	Retail Marketing Management	Creating and developing services and products that meet the specific needs of customers offering these products at competitive, reasonable prices
SBEC - IV	Campus to Corporate - (Viva-Voce)	<ol style="list-style-type: none"> 1. gains practical exposures. 2. learns corporate disciplines. 3. how to prepare business articles 4. this project helps to develop speaking skills, Effective public speaking, etc 5. how to manage the work in timely manner 6. studies on how to handle an events in an organization

Industrial Relations	<ol style="list-style-type: none"> 1. To understand the functions of Industrial Relations 2. The function of industrial relation has been studied. 3. To know about trade union 4. To create an awareness about collective bargaining
----------------------	---

Training and Development	<ol style="list-style-type: none"> 1. Students can understand the need & analysis for a training program 2. Understand the role of training department in an organization 3. Know various methods and techniques of training and development.
Investment Management	<ol style="list-style-type: none"> 1. The knowledge about investment management has been studied 2. The students have known about investment, risk return policies
Portfolio Management	<ol style="list-style-type: none"> 1. The basic information about portfolio management has been studied 2. The portfolio analysis helped the students in business like Portfolio investment timing and performance evaluation
Enterprise Resource Planning	<ol style="list-style-type: none"> 1. Design and develop ERP applications using features of ERP tools 2. role of enterprise systems in the procurement process 3. ERP for all types of industry
E- Business	<ol style="list-style-type: none"> 1. to understand Basic Internet Fundamentals 2. Data entry and graphs in MS-office along with its Formulas & functions
Total Quality Management	<ol style="list-style-type: none"> 1. The students will be given an opportunity in the field of quality control 2. The knowledge about the quality management has been studied
Merchandising Management	<ol style="list-style-type: none"> 1. Learners understand the concepts, trade theories and importance of merchandising management 2. Students acquire the required skills to be an effective merchandising management professional 3. Learners understand, analyze and take decisions as merchandising manager

3. DEPARTMENT OF COMMERCE

DEPARTMENT OF COMMERCE PROGRAMME OBJECTIVES AND OUTCOMES

➤ Programme Educational Objectives (PEOs)

PEO1: Graduates are prepared to be employed in banking sector, reputed companies by providing expected domain Knowledge

PEO2: Aluminums holders are provided with practical training, hands-on to meet the industrial needs.

PEO3: Graduates are motivated in career and entrepreneurial skill development to become global leaders

PEO4: Bachelor holder are trained to demonstrate creativity, develop innovative ideas and. to work inteams to accomplish a common goal

PEO5: Graduates are trained to address social issues and guided to approach problems with solutions.

➤ MAPPING WITH PROGRAMME OUTCOMESs (PSOs)

After completion of the programme the graduates will be able

PSO1: Apply domain knowledge and fundamentals of Commerce, Accounting and Finance to solve real time problems.

PSO2: Apply accounting concepts & theories to enter the work environment with confidence & strength.

PSO3: Prioritize & work in solving dynamic challenges of the business environment in the field of Commerce.

PSO4: To apply the Students venture into managerial positions, accounting areas, Banking sector, Auditing and Teaching etc.

➤ Programme Outcomes (POs)

After completion of the programme, the graduates will be able

PO1: Accounting knowledge: Apply the knowledge of mathematics, Social science, accounting fundamentals, and accounting specialization to the solution of complex accounting & management problems.

PO2: Problem analysis: Identify, formulate, research literature, and analyze socio – economic problems to arrive at substantiated conclusions using first principles of statistics, natural and social

sciences.

PO3: Design/development of solutions: Design solutions for economic problems and design case

study, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research – based knowledge including design of tools, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

PO5: The accountant and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional accounting practice.

PO6: Communications: Communicate effectively with the accounting professional community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.

PO7: Project management and finance: Demonstrate knowledge and understanding of management principles and apply these to one’s own work, as a member and leader in a team. Manage project in multidisciplinary environments.

PO8: Life – long learning: Recognize the need for and have the preparation and ability to engage in independent and life – long learning in the broadest context of technological change.

PO9: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the accounting practices.

➤ **Programme Specific Outcomes (PSOs):**

PSO1: The students should possess the knowledge, skills and attitudes during the end of the B.com degree course

PSO2: By virtue of the training they can become an Manager, Accountant , Management Accountant, cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government jobs etc.,

CORE I – PRINCIPLES OF ACCOUNTANCY**Program Outcome:**

- To enable the students to acquire basic knowledge of accounting principles, concepts and conventions.
- To make the students to acquire the skill to prepare the trial balance and final accounts.

Course Outcome:

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

CO Number	CO Statement	Knowledge Level
CO1	Provide a basic knowledge about Basic Concepts Fundamentals of Book Keeping accounting concepts	K1
CO2	Understand use the Final accounts of a sole trading concern.	K2
CO3	Understanding the Final accounts of Non- trading concerns	K3
CO4	To have knowledge on preparation Bank Reconciliation statement and Royalties.	K4
CO5	To have knowledge on preparing Depreciation Accounts	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	M	M	M	S	S
CO3	S	M	M	S	S
CO4	S	S	M	S	M
CO5	S	M	S	S	M

S- Strong, M- Medium, L – Low

CORE COURSE II – BUSINESS COMMUNICATION**Program Outcomes:**

- To develop better written and oral business communication skills among the students and enable them to know the effective media of communication.
- To enhance their writing skills in various forms of business letters and reports.
- To train them to draft personal letters relating to recruitment for various companies.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the essentials of effective business letters.	K1
CO2	Draft an application for employment.	K2
CO3	Gain Practical knowledge to face an Interview.	K3

CO4	Developing writing skills towards secretarial correspondence	K4
CO5	Exploring a practical knowledge for bank & Insurance Correspondence.	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	M	S	M	S	S
CO3	S	M	S	S	M
CO4	S	S	M	S	M
CO5	S	M	M	S	S

S- Strong, M- Medium, L – Low

ALLIED I – BUSINESS ECONOMICS

Program Outcomes:

- At the end of the course students shall be able to understand the fundamental concept of economics and will be able to correlate these concepts to real life situation to markets in particular and the economy in general.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic economics and business economics	K1
CO2	Understand about various methods of demand forecasting. Basic idea of demand and the concept 'elasticity of demand'.	K2
CO3	understand the concept of production	K3
CO4	Get the idea on Break Even Point in profit planning of a firm	K4
CO5	Get the knowledge over various types of market structure and their features	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	M	M	M	S	S
CO3	S	M	L	M	M
CO4	S	S	M	S	M
CO5	S	M	S	S	S

S- Strong , M- Medium , L – Low

CORE III – FINANCIAL ACCOUNTING

Program Outcomes:

- To enable the students to learn the basic concepts of Partnership Accounting and allied aspects of accounting.
- At the end of the course students shall understand partnership accounts, branch and departmental accounts and apply the same in the real business world.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Have a knowledge on preparing Branch and Departmental Accounts	K1
CO2	Have skill in the procedure for preparing of accounts from incomplete Records.	K2
CO3	Learn about the partnership Accounting.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	M
CO2	S	M	M	S	S

CO3	S	S	M	M	M
------------	---	---	---	---	---

S- Strong , M- Medium , L – Low

CORE COURSE IV - BUSINESS MANAGEMENT

Program Outcomes:

- To make the students to get acquainted with the basic Principles of Management.
- The course also attempts to enable students to understand the role, challenges, and opportunities of management in contributing to the successful operations and performance of organizations.
- On successful completion of this course, the students will get an opportunity to examine and apply appropriate theories / concepts about managing the business effectively.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand basic concepts and importance of management, including the principles, functions of management and contributions of management experts	K1
CO2	Gain knowledge on the conventional theoretical aspects and emerging trends and developments in management	K2
CO3	Familiarize themselves on internal and external environment and its impact on the growth and survival of organizations.	K3
CO4	Critically analyze role of planning, organizational structures, directing and controlling techniques in the achievement of organizational goals.	K4

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	M	M	S	S
CO3	M	L	S	M	M
CO4	M	S	M	S	M

S- Strong , M- Medium , L – Low

Program Outcomes:

- To enable the students to have an understanding of the present economic situation of India.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.	K1
CO2	Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.	K2
CO3	Understand agriculture as the foundation of economic growth and development.	K3
CO4	Understand the concept of industrialization	K4
CO5	understand the importance of planning undertaken by the government of India	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO 4	PO5
CO1	S	M	S	L	M
CO2	S	M	M	S	S
CO3	S	S	L	M	M
CO4	M	S	M	S	M
CO5	S	L	S	M	S

S- Strong , M- Medium , L – Low

COREV – BUSINESS LAW**Program Outcomes:**

- To cultivate understanding of the various Trade Laws of Land - with an expert knowledge of Indian Contract Act, Sale of Goods Act.
- To provide comprehensive understanding of rights, duties and responsibilities of the parties entering into business dealings

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding the legal Environment of business.	K1
CO2	Understand the Basic Knowledge of the business Transactions	K2
CO3	Elucidating Communication effectively by using standard business and legal Terminology.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	-	M
CO2	S	M	M	L	S
CO3	S	L	L	M	M

S- Strong , M- Medium , L – Low

CORE VI – CORPORATE ACCOUNTING – I

Program Outcomes:

- To enlighten the students on the accounting procedures followed by the company.
- To enable the students to be aware on the Corporate Accounting in conformity with the provisions of the Companies Act.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding the concept of Equity Shares Issue at Par, at Premium and at Discount & Forfeiture and Re-issue.	K1
CO2	Learning about the provisions relating to redemption of Preference shares.	K2
CO3	Various Methods of Redemption, Writing off Discount on Redemption of debentures.	K3
CO4	Ability to Valuation of Goodwill and shares & Learning about methods of Valuation of shares.	K4
CO5	To learn the Pre -incorporation, Post - incorporation & Preparation of Final accounts of companies	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	-	M
CO2	S	M	M	S	S
CO3	M	L	L	M	M
CO4	M	S	M	S	M
CO5	S	S	S	S	S

S- Strong, M- Medium, L – Low

CORE VII – BANKING THEORY LAW & PRACTICE**Program Outcomes:**

- To provide knowledge relating to the procedure for opening bank accounts, features of cheque and lending principles of bank.
- To provide exposure to the students with the latest development in the banking field such as ECS, EFT, CBS, SWIFT, KYC etc.,

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Have better understanding about banks and its relationship with customers	K1
CO2	Know complete knowledge on cheques, material alteration, crossing and endorsements.	K2
CO3	Have understanding of rights, duties of payment and collecting Bankers	K3
CO4	Understand general principles of lending, Types of advances in business.	K4
CO5	Have knowledge on the concept, evolution of banking	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	M
CO2	S	M	M	S	S
CO3	M	M	L	M	M
CO4	M	S	M	S	M
CO5	S	L	M	S	S

S- Strong , M- Medium , L – Low

COREVIII – COMPANY LAW**Program Outcomes:**

- To enlighten the students, the provisions of Companies Act.
- After the successful completion of the course the students gain knowledge on Formation of company and Documents required.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Know the concept of joint stock companies and their classification.	K1
CO2	Understand the procedure for the incorporation of companies.	K2
CO3	Know about important documents of companies such as memorandum, articles, prospectus.	K3
CO4	Know the management of companies, appointment, rights, duties of directors and MD	K4
CO5	Understand the nature and matters discussed in different types of meetings	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	M
CO2	M	S	M	S	S
CO3	M	S	L	M	M
CO4	M	S	M	S	M
CO5	S	M	L	S	S

S- Strong , M- Medium , L – Low

CORE IX – CORPORATE ACCOUNTING - II

Program Outcomes:

- To equip the students with accounting methods formatted from inception to liquidation and to have knowledge about Amalgamation, Absorption and Reconstruction.
- To lay down a foundation for drafting accounts for special corporate bodies such as banking companies and holding companies.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Know about the companies all accounts.	K1
CO2	Get the knowledge of banking / insurance company	K2
CO3	Get the knowledge of Holding Company	K3
CO4	Get the knowledge of Amalgamation, Absorption and Reconstruction	K4

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	M	M	S	S
CO3	S	S	L	M	M
CO4	M	S	M	S	M
CO5	S	L	S	S	S

S- Strong , M- Medium , L – Low

CORE X – PRINCIPLES OF MARKETING

Program Outcomes:

- To highlight the various marketing functions and to impart necessary skills which help the students to choose a career in the field of marketing.

- To provide basic knowledge about the latest trends in marketing.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding and knowledge of Introduction of Marketing.	K1
CO2	To have knowledge on Marketing Function	K2
CO3	Understanding the Standardisation, Grading, MIS	K3
CO4	To have knowledge on Product Planning and Development and Product life cycle.	K4
CO5	To have knowledge on Global Marketing- E-Marketing- Tele Marketing- Green Marketing- Online Marketing- Neuro Marketing	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	L	M
CO2	S	M	M	S	S
CO3	S	M	L	M	M
CO4	M	S	M	S	S
CO5	S	L	M	L	M

S- Strong , M- Medium , L – Low

CORE XI – COST ACCOUNTING

Program Outcomes:

- To provide an in-depth knowledge on cost ascertainment.
- To enable the students to appreciate the utility of costing in industries.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Explain Cost accounting systems	K1
CO2	Explain main manufacturing cost elements	K2
CO3	Makes Material Issue	K3
CO4	Makes Cost allocation	K4
CO5	Calculates production cost accounting to the process costing	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PSO5
CO1	S	S	S	-	M
CO2	S	M	M	S	S
CO3	S	L	L	M	M
CO4	M	S	M	S	S
CO5	S	L	S	S	M

S- Strong , M- Medium , L – Low

CORE COURSE XII – PRINCIPLES AND PRACTICE OF AUDITING**Program Outcomes:**

- This subject aims at imparting knowledge about the principles and methods of auditing and their applications.
- To gain a fair working knowledge of the importance of vouching and internal checks in practice in various organizations.
- To create interest in the minds of students towards auditing profession.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic principles and their application of auditing.	K1
CO2	Gain Practical knowledge on Internal Check as regards cash payments of various items.	K2
CO3	Draft an Audit Report on behalf of a Public Limited Company	K3
CO4	Draft an Audit Program	K4
CO5	Record the verification procedure with respect to any one Fixed Asset.	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PSO5
CO1	S	M	M	S	M
CO2	M	S	L	S	S
CO3	S	M	L	M	M
CO4	S	M	M	S	S
CO5	S	M	L	L	M

S- Strong, M- Medium, L – Low

CORE XIII – INCOME TAX LAW AND PRACTICE - I**Program Outcomes:**

- To equip the students with Laws relating to Income Tax and Procedures in India.
- To lay down a foundation for computing Taxable Income And Rebate

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Examine the basic concepts of schedules of rates of tax, tax liability, and penalties and prosecution.	K1
CO2	Explain the total taxable income of an Assessee	K2
CO3	Apply and practice the computation of total income.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PSO5
CO1	S	M	M	S	M
CO2	M	M	L	S	S
CO3	M	M	L	M	M

S- Strong, M- Medium, L – Low

CORE XV – MANAGEMENT ACCOUNTING

Program Outcomes:

- To develop an understanding of the conceptual frame work of management accounting.
- To acquaint the students, the Management Accounting Techniques that facilitates managerial decision making.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Provide a basic knowledge about management accounting concepts	K1
CO2	Understand use the different types of ratios	K2
CO3	Describe the method of preparing the cash flow statement as per AS-7 and fund flow statement	K3
CO4	Understand the basic concept of budget and its type	K4
CO5	Understand the basic concept of marginal cost	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS0 1	PS02	PS03	PS04	PS05
CO1	S	M	M	S	M
CO2	M	S	M	S	S
CO3	M	S	M	M	M
CO4	S	M	S	S	S
CO5	S	S	M	S	M

S- Strong, M- Medium, L – Low

COREXVI - ENTREPRENEURIAL DEVELOPMENT

Program Outcomes:

- To enable the students to learn the concept of Entrepreneurship.
- To realise the importance of entrepreneurship qualities required for small business management.
- To instill ideas on identification, selection and preparation of projects and to have awareness on the institutions promoting entrepreneurship.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding and knowledge of Introduction of an Entrepreneur Characteristics of entrepreneur ,classification of entrepreneur.	K1
CO2	To have knowledge on Problems of Entrepreneurs – Women entrepreneurs	K2
CO3	Understanding the Business idea generation – identification of business opportunities.	K3
CO4	To have knowledge on MSME- Meaning- Features- Role- Problems- Rural entrepreneurship	K4
CO5	To have knowledge on Financial assistance and service	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	M	S	S	M
CO3	M	S	M	S	S
CO4	S	S	M	S	M
CO5	S	M	S	M	S

S- Strong, M- Medium, L – Low

CORE XVII – INCOME TAX LAW AND PRACTICE - II

Program Outcomes:

- To create knowledge in Income Tax Act 1961 with new amendments.
- To know idea about E-Filing, Deductions & Computation of Total Income.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Familiarize the concept of capital gain	K1
CO2	Enlighten the concept of income from other source	K2
CO3	Discuss the concept of Tax liability of individual and firms.	K3
CO4	To know the concept of clubbing and set off and carry forward of losses	K4
CO5	Enlighten the concept of income tax authroities, appeals and revisions	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	S	L	S	M
CO3	S	S	L	S	S
CO4	S	M	M	S	L
CO5	S	M	L	S	M

S- Strong, M- Medium, L – Low

CORE XVIII - COMMERCE PRACTICALS**Program Outcomes:**

- To provide practical knowledge to fill forms like insurance, bank, loan application, membership form, income tax return forms etc.
- To train them in secretarial, banking, insurance, co-operative organisation, costing and taxation aspects relating to processing of prescribed official forms.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding and knowledge of Preparation of of invoice, receipts, vouchers .	K1
CO2	To have knowledge on Drawing, endorsing and crossing of cheques	K2
CO3	To have knowledge on Filling up of application forms admission in co-operative societies deposit challan and Jewel loan application	K3
CO4	To have knowledge on Preparation of agenda and minutes of meetings	K4
CO5	To have knowledge on Filling up of an application form for LIC policy, filling upof the premium form	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	S	M	S	M

CO3	M	M	S	S	S
CO4	M	S	M	S	L
CO5	S	M	S	S	M

S- Strong, M- Medium, L – Low

ELECTIVE I - PAPER I-PROJECT WORK

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	To know about Identifying the title of the project.	K1
CO2	Gain Knowledge above how collection of data	K2
CO3	Ability to interpret the collection of data	K3
CO4	To develop give suggestions to company	K4
CO5	How prepare Questionnaire	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	S	M	S	M
CO3	M	M	S	S	S
CO4	M	S	M	S	L
CO5	S	M	S	S	M

S- Strong, M- Medium, L – Low

FUNDAMENTALS OF INSURANCE

Program Outcomes:

To impart theoretical base on fundamental principles of insurance business

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding and knowledge of Introduction to Insurance	K1
CO2	Know complete information about life insurance policies and its various kinds and Nomination.	K2
CO3	To have knowledge on Fire and Marine Insurance.	K3
CO4	To have knowledge on Miscellaneous Insurance.	K4
CO5	Know basic information on LIC of India Procedure for becoming an Agent.	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	S	M	S	M
CO3	M	M	S	S	S
CO4	M	S	M	S	L
CO5	S	M	S	S	M

S- Strong, M- Medium, L – Low

B.COM ELECTIVE II – PAPER I OFFICE ORGANISATION**Program Outcome:**

- To enable the students to learn the office organization, types, office furniture and machines.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	To understand the concepts related to business	K1
CO2	Demonstrate the roles, skills and functions of management	K2
CO3	Analysis effective application of PPM knowledge to diagnose and solve organizational problem and develop optimal managerial decisions.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05	
CO1	S	M	M	--	S	
CO2	M	S	M	S	M	
CO3	M	M	S	S	S	
CO4	M	S	M	S	L	
CO5	S	M	S	S	M	

S- Strong, M- Medium, L – Low

1. .

B.COM ELECTIVE II – PAPER II SECRETARIAL PRACTICE

Program Outcomes:

- To enlighten the students the duties of company secretary.
- On successful completion of this course the students shall learn the secretarial work.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	To provide the Students an insight about Company Secretarial Practices	K1
CO2	To make the learns understand the role of company secretary towards Company's statutory provisions, rules and regulations	K2
CO3	The students will be able to familiarize the duties of company secretary relating to meeting, minutes and resolution.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05
CO1	S	M	M	--	S
CO2	M	S	M	S	M
CO3	M	M	S	S	S

S- Strong, M- Medium, L – Low

PAPER I: INDUSTRIAL LAW – I

Program Outcomes:

- To enlighten the students the Provisions of Factories Act, Workmen's Compensation Act and Provident Fund Act.
- After the successful completion of the course the student gains knowledge in Industrial Law.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic principles and their application of labour legislations.	K1
CO2	Student becomes familiar about factories Act and workmen related issues and benefits	K2

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05
CO1	S	M	M	S	S
CO2	M	S	M	S	M
CO3	M	M	S	S	S

S- Strong, M- Medium, L – Low

PAPER I: INDUSTRIAL LAW – II**Program Outcomes:**

- To enlighten the students the Provisions of Wages Act, Bonus Act, Gratuity Act and Industrial Disputes act.
- After the successful completion of the course the student gains knowledge in Industrial Law

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic concepts on wages, bonus and gratuity of employees working in companies.	K1
CO2	Student becomes familiar about workmen related issues and benefits.	K2
CO3	Girls' student aware about the provisions relating to maternity leaves and benefits.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05
CO1	S	M	M	S	S
CO2	M	S	M	S	M
CO3	M	M	S	S	M

S- Strong, M- Medium, L – Low

ELECTIVE IV – PAPER I CAMPUS TO CORPORATE

Program Outcome:

- To enable the students understand the corporate policies.
- To make the students knowledge about various types of business correspondences and practical applications.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	To enable the students understand the corporate demand, competition and employment opportunities	K1
CO2	Employee happiness, lower labour turn-over, employee performance and loyal to company.	K2
CO3	To empower the students in oral and written communication in the modern business world.	K3
CO4	To make the students understand the term of business communication importance and effectiveness of Business correspondences.	K4

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05
CO1	S	M	M	L	S
CO2	M	S	M	S	M
CO3	M	M	S	S	M
CO4	M	S	M	S	S

S- Strong, M- Medium, L – Low

IV - PAPER II

CUSTOMER RELATIONSHIP MANAGEMENT

Program Outcomes:

- To provide a thorough understanding of customer – retailer relationship and the ways to manage it.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	The students will be able to understand the concepts of CRM	K1
CO2	To examine the principles CRM	K2
CO3	To study current trends and role of CRM in Banking.	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04	PS05
CO1	S	M	M	S	S
CO2	M	S	M	S	M
CO3	M	M	S	S	S

S- Strong, M- Medium, L – Low

SKILL BASED ELECTIVE PAPER – I
FINANCIAL MARKET

Program Outcomes:

- To enlighten the students the role of capital markets in India.
- To create awareness about the stock market among the students.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Know the functions and importance of Financial Market.	K1
CO2	To Understand the level of Investor's and guidelines issued by SEBI.	K2
CO3	To learn the functions of Credit rating agencies.	K3
CO4	To Understand the trade practices followed in the Indian Financial market.	K4
CO5	To realise the Stock Price movement and Indian economy system.	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	M	M	S	S
CO3	M	L	L	M	S
CO4	M	S	M	S	S
CO5	S	L	M	S	S

S- Strong , M- Medium , L – Low

SKILL BASED ELECTIVE PAPER – IIMS OFFICE PRACTICAL – I

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Provide working Knowledge on Word Processing.	K1
CO2	Provide exposure to various utilities of spreadsheet and Excel	K2
CO3	Provide knowledge on the creation of power point presentation	K3

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	M	M	S	S
CO3	M	L	L	M	M

S- Strong , M- Medium , L – Low

SKILL BASED ELECTIVE PAPER – III

PROJECT METHODOLOGY

Objectives:

- To provide basic knowledge about the project methodology.
- The student know how to carry out the project work.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
-----------	--------------	-----------------

CO1	After the successful completion of the course the students come to know to carry out the project work.	K1
CO2	Identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirement in consultation with stake holders.	K2

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	L	L
CO2	S	M	M	S	S

**SKILL BASED ELECTIVE PAPER – IV TALLY
– PRACTICAL II**

Program Outcome:

On completion of the course the students shall have knowledge on

- Tally Package and its concepts
- Enable to use package for wide range of Business Applications
- Students to possess required skill and can also be employed as Tally data entry operator.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Create a company using tally and functions keys and short cut keys.	K1
CO2	Enter ledger accounts and various vouchers.	K2
CO3	Work with inventory records	K3
CO4	Create cost centre and cost category	K4

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	L	S
CO2	S	M	M	S	M
CO3	M	S	L	M	L
CO4	M	S	M	S	M

MAJOR ELECTIVE COURSE - IMARKETING

Objectives:

- To acquire basic knowledge about the marketing principles, trends in marketing and to impart necessary skills in the field of sales promotion.

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	Understanding and knowledge of Introduction of Marketing.	K1
CO2	To have knowledge on Marketing Function.	K2
CO3	Understanding the Standardisation, Grading, MIS.	K3
CO4	To have knowledge on Product Planning and Development.	K4
CO5	To have knowledge on Product Life Cycle – Product Diversification	K5

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	M	M	S	S
CO3	M	S	L	M	M
CO4	M	S	M	S	S
CO5	S	L	M	S	S

**NON MAJOR ELECTIVE COURSE - I HUMAN
RESOURCE MANAGEMENT**

Course Outcomes:

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

CO Number	CO Statement	Knowledge Level
CO1	To develop the understanding of the concept of human resource management and to understand its relevance in organizations.	K1
CO2	To develop necessary skill set for application of various HR issues	K2
CO3	To analyse the strategic issues and strategies required to select and develop manpower resources	K3
CO4	To integrate the knowledge of HR concepts to take correct business decisions	K4

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	L	S
CO2	S	M	M	S	M
CO3	M	L	S	M	S
CO4	M	S	L	S	L

4. DEPARTMENT OF COMMERCE (CA)

PROGRAMME OBJECTIVES AND OUTCOMES

➤ Programme Educational Objectives (PEOs)

PEO1: Graduates are prepared to be employed in banking sector, reputed companies by providing expected domain Knowledge

PEO2: Aluminus holder are provided with practical training, hands-on to meet the industrial needs.

PEO3: Graduates are motivated in career and entrepreneurial skill development to become global leaders

PEO4: Bachelor holder are trained to demonstrate creativity, develop innovative ideas and. to work in teams to accomplish a common goal

PEO5: Graduates are trained to address social issues and guided to approach problems with solutions.

➤ MAPPING WITH PROGRAMME OUTCOMESs(PSOs)

After completion of the programme the graduates will be able

PSO1: Apply domain knowledge and fundamentals of commerce (CA) , Accounting and Finance to solve real time problems.

PSO2: Apply accounting concepts & theories to enter the work environment with confidence & strength.

PSO3: Prioritize & work in solving dynamic challenges of the business environment in the field of Commerce in computer Applications.

PSO4: To apply the learners venture into managerial positions, accounting areas, Banking sector, Auditing, Teaching etc.

➤ Programme Outcomes(POs)

After completion of the programme, the graduates will be able

PO1: Enables learners to get theoretical and practical exposure in the commerce sector which includes Accounts, Commerce, Marketing, Management, Economics, Environment etc.

PO2: Develops communication skills and build confidence to face the challenges of the corporate world.

PO3: Enhances the capability of decision making at personal and professional levels.

PO4: Makes students industry ready and develop various managerial and accounting skills for better professional opportunities.

SEMESTER I

PRINCIPLES OF ACCOUNTANCY(21UCC01)COURSE

OUTCOME:

CO Number	CO Statement
CO1	Acquire the knowledge in accounting, system of maintenance of accounts, journal, ledger, bill of exchange, account current, average due date and bank reconciliation statement.
CO2	Familiarize and understand the basic accounting concepts and conventions, preparation of subsidiary books and final accounts, account of Consignment, Joint venture and non-trading concerns.
CO3	Develop the application skills to create adjusting journal entries in rectifying errors, preparation of entries in bill of exchange, consignment and joint venture, receipts and payments account, income and expenditure account of non-profit organization.
CO4	Develop the analytical skills in accounting equation, preparation of trial balance and suspense account, normal loss in consignment. Analyzing the reasons for differences between pass book and cash book transactions in the Bank Reconciliation Statement.
CO5	Evaluate declare commission, normal and abnormal loss, value of unsold stock in consignment account and familiarize the financial position of sole proprietor through final accounts

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	M	M	M	S
CO3	S	M	L	-
CO4	S	S	M	S
CO5	S	M	S	S

S- Strong , M- Medium , L – Low

**SEMESTER I-PROFESSIONAL ENGLISH FOR
COMMERCE - I (21UPEC01)**

COURSE OUTCOME:

CO Number	CO Statement
CO1	Students will be enabled to understand the basic objective of the course by being acquainted with specific dimensions of communication skills i.e. Reading, Writing, Listening, Thinking and Speaking
CO2	Students would be able to create substantial base by the formation of strong professional vocabulary for its application at different platforms and through numerous modes as Comprehension, reading, writing and speaking etc.
CO3	Students will apply it at their work place for writing purposes such as Presentation/official drafting/administrative communication and use it for document/project/report/research paper writing.
CO4	Students will be made to evaluate the correct & error-free writing by being well-versed in rules of English grammar & cultivate relevant technical style of communication & presentation at their work place & also for academic uses.
CO5	Students will apply it for practical and oral presentation purposes by being honed up in presentation skills and voice-dynamics. They will apply techniques for developing inter-personal communication skills and positive attitude leading to their professional competence.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	S	S	M	S
CO3	S	M	S	-
CO4	S	S	M	S
CO5	S	M	S	S

S- Strong , M- Medium , L – Low

SEMESTER I BUSINESS COMMUNICATION(21UCC02)

COURSE OUTCOME:

1. To be familiar with the complete course outline/Course Objectives/Learning Outcomes/ Evaluation Pattern & Assignments
2. To participate in an online learning environment successfully by developing the implication-based understanding of Paraphrasing, deciphering instructions, interpreting guidelines, discussion boards & Referencing Styles.
3. To demonstrate his/her ability to write error free while making an optimum use of correct Business Vocabulary & Grammar.
4. To distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	M	S	M	S
CO3	S	M	S	-
CO4	S	S	M	S

S- Strong , M- Medium , L – Low

SEMESTER-II
FINANCIAL ACCOUNTING (21UCC03)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Acquire the basic knowledge of the terms such as, single entry system, statement of affairs, departmental accounts, inter departmental transfer, branch accounting, stock and debtors system, depreciation, hire purchase and installment purchase, down payment.
CO2	Understand the features of single entry system, difference between single entry and double entry system, need for departmental accounts, basis for allocation of expenses, difference between wholesale profit and retail profit, different methods of depreciation, features of hire purchase and installments system and difference between hire purchase and installment system.
CO3	Familiarizing the methods of preparation of single entry system of accounts, inter-department transfer at cost or selling price, preparation of branch accounts, preparation of accounts using various methods of depreciation and calculation of interest under hire purchase and installment system of accounting.
CO4	Develop analytical skills in single entry system of accounts, department trading and profit and loss account and balance sheets, stocks and debtors system and final accounts system and hire purchase trading account.
CO5	Evaluate the cost of departmental purchase, consolidated final accounts and default and repossession of goods under hire purchase system.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	---
CO2	S	M	-	S
CO3	S	S	L	M
CO4	M	S	S	-
CO5	S	M	-	S

S- Strong , M- Medium , L – Low

**SEMESTER II-PROFESSIONAL ENGLISH FOR
MANAGEMENT - II (21UPEC02)**

COURSE OUTCOME:

CO Number	CO Statement
CO1	Students will be enabled to understand the basic objective of the course by being acquainted with specific dimensions of communication skills i.e. Reading, Writing, Listening, Thinking and Speaking
CO2	Students would be able to create substantial base by the formation of strong professional vocabulary for its application at different platforms and through numerous modes as Comprehension, reading, writing and speaking etc.
CO3	Students will apply it at their work place for writing purposes such as Presentation/official drafting/administrative communication and use it for document/project/report/research paper writing.
CO4	Students will be made to evaluate the correct & error-free writing by being well-versed in rules of English grammar & cultivate relevant technical style of communication & presentation at their work place & also for academic uses.
CO5	Students will apply it for practical and oral presentation purposes by being honed up in presentation skills and voice-dynamics. They will apply techniques for developing inter-personal communication skills and positive attitude leading to their professional competence.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	S	S	M	S
CO3	S	S	S	-
CO4	S	S	S	S
CO5	S	M	S	L

S- Strong , M- Medium , L – Low

**SEMESTER-III
BUSINESS LAW (21UCC04)**

COURSE OUTCOME:

CO Number	CO Statement
CO1	Students would learn the basics of Laws governing commercial contracts and nuances of competency to contract, rules of Consideration and Objects of Contracts with case laws and illustrations.
CO2	Students would learn the concept of Consent & Free Consent, different types of Agreements and Contracts, different Modes of discharge of Contracts, Breach of contracts and remedies for the aggrieved parties.
CO3	Students would learn the rules regarding the Contract of Indemnity & Guarantee, Contract of Bailment, Contract of Pledge and Contract of Agency and types of Agents.
CO4	Students would learn the rules regarding the Contract of Sale, Distinction between Sale & Agreement to sell, Condition & Warranty, Doctrine of Caveat Emptor, Rights of Unpaid Seller and Remedies for Breach of Contract of Sale.
CO5	Students would learn various provisions related to The Negotiable Instrument Act, 1881 with Amendment Act, 2015. Rules related to Bills of Exchange, Promissory Note and Cheque. Legal process on Dishonour of Cheque and Penalties.

MAPPING WITH PROGRAMME OUTCOMES:

CO SNumber	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	L
CO3	S	L	L	M
CO4	M	S	M	M
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

SEMESTER-III
CORPORATE ACCOUNTING - I (21UCC05)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Acquire the knowledge in company accounts such as meaning of a company, characteristics of a company, definition of shares, debentures, underwriting and goodwill, types of shares, bonus share, right share and underwriting, liquidation.
CO2	Understand the accounting treatment in issue of shares at par premium and discount, issues of debenture, managerial remuneration, calculation of goodwill and shares and liquidator's statement of affairs.
CO3	Develop the application skills to computation of pro-rate allotment, redemption of preference shares, profit and loss account and preparation of balance sheet of companies (new format).
CO4	Familiarize the analytical skills in corporate accounting, calculation of underwriting commission, redemption of debentures in sinking fund method, valuation of shares and liquidators final statement.
CO5	Evaluate the techniques for redemption of preference share, valuation of goodwill and shares, deficiency account in liquidation.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO 1	PO 2	PO 3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	M	L	L	M
CO4	M	S	M	S
CO5	S	S	S	S

S- Strong , M- Medium , L – Low

SEMESTER-III
FINANCIAL MARKET(21UCCS01)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Apply concepts relevant to financial markets and financial institutions, such as the flow of funds, levels of interest rates and interest rate differentials, to current events or topical issues.
CO2	Determine and analyze the appropriate measures of risk and return for various financial instruments. Understand the mechanics and regulation of financial securities exchanges and determine how the value of stocks, bonds, and securities are calculated.
CO3	Identify and evaluate the role symmetric versus asymmetric information plays in the structure and operation of the financial system information.
CO4	Evaluate empirical evidence of market performance, and contrast it with theories of market performance.
CO5	Research and analyze specific problems or issues related to financial markets and institutions.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	M	L	L	M
CO4	M	S	M	S
CO5	S	L	M	S

S- Strong , M- Medium , L – Low

SEMESTER IV

CORPORATE ACCOUNTING - II (21UCC07)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Acquire the knowledge in company accounts such as meaning of a company, amalgamation of a company. Further to acquire knowledge in banking and insurance company accounts and electricity company accounts.
CO2	Understand the accounting treatment in amalgamation, liquidator's final statement of accounts, preparation of revenue account, calculation of purchase consideration and preparation of electricity company.
CO3	Develop the application skills to calculate profit and loss account, consolidated balance sheet of holding companies, preparation of balance sheet of banking and insurance companies.
CO4	Familiarize the analytical skills in corporate accounting, calculation of managerial remuneration, minority interest, classification of bank advances and to identify the difference between amalgamation and absorption, general insurance and life insurance.
CO5	Evaluate the techniques of valuation of consolidated balance sheet of holding company, bank accounts, insurance company accounts and electricity company accounts.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	S	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

SEMESTER IV
PROJECT METHODOLOGY (21UCCS04)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Understand the current state of the project management profession .
CO2	Apply project management tools and techniques
CO3	Understand project management terminology with a focus on the PMI PMBok
CO4	Explore the appropriate methods to initiate, plan, execute, control and close projects
CO5	Understand the PMBoK philosophy and core processes.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	S	S
CO3	M	S	L	M
CO4	M	S	M	S
CO5	S	M	-	-

S- Strong , M- Medium , L – Low

SEMESTER IV
HUMAN RESOURCE MANAGEMENT (21UCCS03)

COURSE OUTCOME:

1. Understand and apply Human Resource Management Perspective
2. Ability to recruit Select and interview job candidates
3. Ability to implement the practices related to employee integration
4. Ability to Draft HR planning

PROGRAMME SPECIFIC OUT COME:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	---
CO2	S	M	-	S
CO3	S	M	L	M
CO4	S	S	M	-

S- Strong , M- Medium , L- Low

SEMESTER V

COST ACCOUNTING (19UCC09)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Understand various costing systems and management systems
CO2	Analyze and provide recommendations to improve the operations of organizations through the application of Cost and Management accounting techniques
CO3	Evaluate the costs and benefits of different conventional and contemporary costing systems
CO4	Differentiate methods of schedule costs as per unit of production
CO5	Differentiate methods of calculating stock consumption

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

SEMESTER V - AUDITING (19UCC10)
COURSE OUTCOME:

CO Number	CO Statement
CO1	Acquire the basic knowledge of auditing, objectives of auditing, audit program, audit note book, working paper, voucher, vouching, verification, valuation, reserves & provisions, audit report & investigation
CO2	Understand the importance and limitations of the auditing, internal control, internal check, various modes of appointment of an auditor, qualities of an auditors, qualification and disqualification of an auditor, significance of vouching, causes & reasons for depreciation, reserves & provisions, objectives of investigation.
CO3	Develop the application skills related to vouching of cash book, trading and impersonal ledger accounts, verification & valuation of assets and liabilities, responsibilities of an auditor while verification and valuation of assets & liabilities, reasons & usage of creating various reserves.
CO4	Develop the analytical skills in conducting share capital and share transfer audit, Vouching Vs Verification Vs Valuation, provisions of companies act regarding investigation, contents and types of audit report, discussions of various case laws.
CO5	Evaluate the methods of depreciation, Rights, duties & liabilities of an auditor, various types of auditing.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	S	L	S
CO3	S	M	L	M
CO4	S	M	M	S
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

**SEMESTER V- INCOME TAX LAW & PRACTICE - I
(19UCC11)**

COURSE OUTCOME:

On successful completion of the course, the students will

1. Acquire the knowledge about the basic principles and concepts of Income tax.
2. Understand the rules and provisions of income tax under five heads of income namely, Income from Salaries, Income from House Property, Profits and Gains of Business or Profession, Capital Gains and Income from other sources.
3. Familiarize with the computation of income tax for an individual.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	M	L	S
CO3	M	M	L	M

S- Strong , M- Medium , L – Low

SEMESTER VI

MANAGEMENT ACCOUNTING(19UCC13)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Acquire the knowledge in management accounting in the aspects of scope, objectives, characteristics, functions, significance, limitations, ratio analysis, classification, need, importance of adequate working capital, disadvantages of excess or inadequate working capital, fund flow and cash flow statements, working capital, marginal costing, break even analysis, budget, budgeting and budgetary control.
CO2	Familiarize and understand the difference between financial and cost accounting versus management accounting, significance and limitations of financial statements, components of balance sheet and profit and loss account, fund flow versus cash flow statement, significance and limitations in the preparation of fund flow and cash flow statement.
CO3	Develop the application skills to estimation of working capital, computation of contribution, P/V ratio, break even sales and margin of safety in the process of decision-making.
CO4	Analyzing the financial statement using short-term, long-term, profitability ratios, factors determining working capital requirements, fund flow and cash flow statements and break even analysis.
CO5	Preparation of cash flow and fund flow statement to evaluate cash and fund flow of the company, managerial applications of marginal costing.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	M	L	S
CO3	M	S	L	M
CO4	S	M	S	S
CO5	S	S	L	S

S- Strong , M- Medium , L – Low

**SEMESTER VI
ENTREPRENEUR DEVELOPMENT
PROGRAMME(19UCC14)**

COURSE OUTCOME:

On successful completion of the course, the students will

1. Acquire the fundamental knowledge of entrepreneurs, entrepreneurship, micro, medium and small enterprises, project, finance and industries.
2. Understand the concept of Intrapreneurs, women entrepreneurs, and objectives of Entrepreneurship Development Programme, industrial estate, incentives, subsidies and growth strategies.
3. Familiarize about Entrepreneurship Development Programme, steps involved in starting small industry, District Industries Centers (DIC), Export Credit Guarantee Corporation (ECGC), Small Industries Development Bank of India (SIDBI) and other financial institutions.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	M	L	S
CO3	M	S	L	S

S- Strong , M- Medium , L – Low

SEMESTER VI

INCOME TAX LAW & PRACTICE - II

(19UCC15)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Assess the income of an individual and the tax payable.
CO2	Familiarize with the computation of income tax for an individual.
CO3	Acquire the knowledge about the basic principles and concepts of Income tax.
CO4	Analyse and apply the permissible exemptions and deductions from income under Income tax Act.
CO5	Gain practical knowledge in computing tax liability of an individual and the filing of Income tax returns.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	S	L	S
CO3	S	S	L	S
CO4	S	M	M	S
CO5	S	M	L	S

S- Strong , M- Medium , L – Low

SEMESTER VI
PRACTICAL I : COMMERCE PRACTICAL (19UCCP03)

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in commerce
2. Provide competencies in basic commerce discipline
3. Combine multiple features to learn relevant accounting standards.

MAPPING WITH PROGRAMME OUTCOMES:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	S	L	S
CO3	S	S	L	S

S- Strong , M- Medium , L – Low

4. DEPARTMENT OF PHYSICS

PROGRAMME: BACHELOR OF SCIENCE IN PHYSICS	
PROGRAMME OUTCOME	
PO1	Acquire academic excellence with an aptitude for higher studies and research.
PO2	Apply appropriate scientific methods and modern technology to solve complex problems related to society
PO3	To understand and apply the principle of physics by doing related experiments in Physics
PO4	To develop appropriate skills in the students so as to make them competent and provide themselves self-employment
PO5	To apply basic Physics principles in everyday life.
PO6	Understand and develop social consciousness, solve the issues through interaction, become mediator/moderator between government and people, and become true citizen of our Nation.
PO7	To promote analytical thinking and experimental skills in Physics
PO8	To recognize and solve scientific problems in an ethical manner
PO9	To face global challenges with unique proficiency in Physics.
PO10	To build the department as a centre of excellence for imparting high quality scientific education at the undergraduate level
PO11	To stimulate in students an interest in research and initiate them into research methodologies
PO12	To train the students in communication skills effectively
PO13	Adhere to values in day to day life, practice yoga and other physical exercises, hence, develop self - respect and self- esteem, have strong integrity.
PROGRAM SPECIFIC OUTCOME (PSO) - PHYSICS	
	On Completion of the Programme, the students will be able
PSO1	Obtain knowledge of fundamentals and applications of Physics concepts.
PSO2	Gain the knowledge of physics laws and equations.
PSO3	Creativity in design, setup, carryout the experiment and compare with Theoretical Prediction
PSO4	Acquire knowledge of synthesis, Characterization and

	Properties of Materials.
PSO5	Utilize the knowledge about energy sources to solve the present day energy Crisis
PSO6	Create proficiency in the analysis of complex Physical problems and the Use of mathematical or appropriate technique to solve them.
PSO7	Get knowledge and aware of handled the instruments in Physics Laboratories
PSO8	Function on multidisciplinary teams by working co-operatively creatively and responsibility as a member of a team.

PROGRAMME AND COURSE OUTCOME (PO & CO) FOR UNDERGRADUATION IN BIOTECHNOLOGY

SEMESTER I

Course Title	CORE I - PROPERTIES OF MATTER AND ACOUSTICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO To impart the basic concepts of properties of matter to make the students realize the concepts in day-to-day life.	K1
2	CO To study the basics of viscosity and its importance.	K2
3	CO To learn and comprehend the concepts of surface tension.	K3
4	CO To enable the students to understand waves and oscillations to make them appreciate the flavour of physics in sound.	K4
5	CO To enable the students to understand the Acoustic aspects of halls and auditoria and Ultrasonic.	K5

On Completion of the Course, the students will be able		
PO1	To understand the behaviour and properties of solids and fluids.	K1
PO2	To able to acquire knowledge about viscosity and lubrication.	K2
PO3	To gain a strong knowledge of surface tension.	K3
PO4	Students will get an overview of the fundamental principles of waves and oscillations.	K4
PO5	To study and apply the knowledge of Acoustics aspects of halls and auditorium and understand Ultrasonic and its application in various field.	K5

MAPPING WITH PO - PROPERTIES OF MATTER AND ACOUSTICS-21UPH01					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	S
CO2	M	M	M	S	M
CO3	S	M	M	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	M
S- Strong, M- Medium, L – Low					

SEMESTER II		
Course Title	CORE II - MECHANICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO Acquire the knowledge on the concepts of mechanics for the application of physics in real life physical problems	K1
2	CO To discuss the Centre of Gravity and Friction	K2
3	CO To discuss the SHM and Rigid body dynamics	K3
4	CO To gain knowledge Laminar, Concurrent forces and Bernoulli's theorem	K4
5	CO To provide the basis of the classical approach of Lagrangian Mechanics	K5

On Completion of the Course, the students will be able		
PO1	Learn to solve the problems in projectile motion.	K1
PO2	To gain the knowledge of Centre of Buoyancy and Laws of friction	K2
PO3	Understand the concepts of rigid body dynamics in terms of the moment of inertia	K3
PO4	To discuss the Torricelli's theorem and centre of pressure.	K4
PO5	Acquire knowledge of Lagrangian formulation in classical mechanics	K5

MAPPING WITH PO - MECHANICS-21UPH02

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	M	S	M	S	M
CO2	M	M	M	S	M
CO3	S	M	M	S	M
CO4	M	S	S	M	S
CO5	S	S	M	S	M
S- Strong, M- Medium, L – Low					

SEMESTER III

Course Title	CORE III - THERMAL AND STATISTICAL PHYSICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO To get the ideas of Thermometer, low temperature physics	K1
2	CO Understand the Thermodynamical laws, potential and functions	K2
3	CO understand the concepts of thermodynamic potentials, thermodynamical behavior	K3
4	CO To over view of conduction & Radiation	K4
5	CO Understand the statistical physics	K5

On Completion of the Course, the students will be able

PO1	To gain the knowledge of Specific heat capacity, Helium I & II	K1
PO2	To gain the knowledge thermodynamic laws and its applications	K2
PO3	To Understand the Maxwell's relations, Phase transition.	K3
PO4	To gain the ideas of Thermal conductivity, solar constant	K4
PO5	To compare the Maxwell's , Bose-Einstein Distribution	K5

MAPPING WITH PO - THERMAL AND STATISTICAL PHYSICS-21UPH03

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	M	S

CO2	S	S	M	S	M
CO3	M	S	S	M	S
CO4	S	S	M	M	S
CO5	M	M	S	S	M
S- Strong, M- Medium, L – Low					

SEMESTER IV		
Course Title	CORE IV - OPTICS AND SPECTROSCOPY	Knowledge level
On Completion of the Course, the students will be able		
1	CO1 Understand the Geometry of lenses & Phenomena of optics	K1
2	CO2 Attain adequate basic of Coherence, Fresnel's biprism.	K2
3	CO3 Basic ideas of Fresnel, Fraunhofer N slits, Resolving.	K3
4	CO4 Gain knowledge of polarization	K4
5	CO5 know the basic concepts in different spectroscopic methods and laser	K5

On Completion of the Course, the students will be able		
PO1	To gain the knowledge of Dispersive power of prism, Achromatic lens	K1
PO2	Understand the concepts of Airy disk, Newton's rings in Interference	K2
PO3	To Gain the knowledge of zone plate Rayleigh's in Diffraction.	K3
PO4	To understand the ideas of Double refraction, Nicol prism.	K4
PO5	To gain the ideas of EMR, IR UV SPECTROSCOPY	K5

MAPPING WITH PO - OPTICS AND SPECTROSCOPY-21UPH04					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	M	M	M	S	M
CO3	S	S	M	S	M
CO4	S	S	S	M	M
CO5	S	S	M	S	S
S- Strong, M- Medium, L – Low					

SEMESTER V

Course Title	CORE V - ELECTRICITY AND MAGNETISM	Knowledge level
On Completion of the Course, the students will be able		
1	CO To acquire in-depth knowledge of measuring instruments involving electric and magnetic fields.	K1
2	CO To give an ideas of Thermoelectricity and Measurement.	K2
3	CO To study various magnetic properties of materials and their applications	K3
4	CO To give an idea of the fundamentals of electromagnetic induction	K4
5	CO To give an idea of the fundamentals of alternating currents	K5

On Completion of the Course, the students will be able		
PO1	To gain the knowledge of Capacitors, Quadraht electrometer	K1
PO2	To understand the Peltier and Thomson effect .	K2
PO3	To understand the Permeability Hystersis and Susceptibility	K3
PO4	To demonstrate the Ampere's, Faraday law and Mutual inductance.	K4
PO5	to gain the knowlede of RMS , LCR ,Choke coil.	K5

MAPPING WITH PO - ELECTRICITY AND MAGNETISM-21UPH05

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	S
CO2	M	S	S	S	M
CO3	S	M	M	S	S
CO4	S	S	M	M	M
CO5	M		M	S	S

S- Strong, M- Medium, L – Low

SEMESTER V

Course Title	CORE VI - SOLID STATE PHYSICS	Knowledge level
On Completion of the Course, the students will be able		
CO	To learn crystal structures	K1

1		
2	CO	To study diffraction of X-rays by crystal and defects in crystals
3	CO	To know the basics of magnetism and superconductivity
4	CO	To understand the electric and dielectric properties of non-metals
5	CO	To gain the knowledge of thermal and electrical properties of solids

On Completion of the Course, the students will be able		
PO1	To Know the ideas of Miller indices SC, BCC, FCC Structure.	K1
PO2	To know the method and Defects in crystals.	K2
PO3	Classification of Material in magnetism and Meissner effect.	K3
PO4	classify the properties of semiconductors, dielectrics, optical, magnetic	K4
PO5	Apply the theories to explain the properties of solids.	K5

MAPPING WITH PO - SOLID STATE PHYSICS-21UPH06					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	M	M	S	S	S
CO3	S	M	M	M	S
CO4	M	S	S	S	M
CO5	M	M	S	M	S
S- Strong, M- Medium, L – Low					

SEMESTER V		
Course Title	CORE VII - ANALOG AND DIGITAL ELECTRONICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO	Providing an overview of the principles, operation and applications of special diodes
2	CO	Introducing transistor and transistor biasing
	CO	Providing an overview of the principles,

3		operation and applications of special devices	
4	CO	Providing an overview of amplifiers, oscillators and their applications in different electronic fields	K4
5	CO	To make students acquire knowledge about Boolean algebra, logic circuits, designing counters and the basic concepts of memory and programmable logic device	K5

On Completion of the Course, the students will be able		
PO1	Understand the implications of characteristics of special diodes	K1
PO2	Understand the implications of characteristics of Transistors	K2
PO3	Gain knowledge on FET, MOSFET, UJT and SCR.	K3
PO4	Know the operating characteristics of a transistor amplifier	K4
PO5	Gain an understanding of multivibrators, operational amplifiers and their applications	K5

MAPPING WITH PO - ANALOG AND DIGITAL ELECTRONICS-21UPH07					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	S	S	M	S	S
CO3	M	S	M	S	M
CO4	S	M	S	M	S
CO5	S	M	S	S	M
S- Strong, M- Medium, L – Low					

SEMESTER VI		
Course Title	CORE VIII - ATOMIC PHYSICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO To provide a coherent and concise coverage of the important atomic concept of physics	K1
2	CO To provide the knowledge of positive rays and the photoelectric effect	K2
	CO To gain the knowledge of Alpha scattering	K3

3		
4	CO	To provide the basic concepts of the Quantum Vector atom model and Spectral lines analysis
5	CO	Analyses the atomic spectra

On Completion of the Course, the students will be able		
PO1	Acquire knowledge of the fundamentals of atomic physics	K1
PO2	To learn the concept of Millikan's experiment and Einstein's light quantum.	K2
PO3	To gain the ideas of Bahr's thoery and sommerfield's atom model.	K3
PO4	To knowledge of Couple schemes and stern-Gerlach experiment	K4
PO5	Acquire knowledge of the Zeeman , Stark effect and x-ray spectra	K5

MAPPING WITH PO - ATOMIC PHYSICS-21UPH08					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	S
CO2	M	S	S	M	M
CO3	S	M	M	S	S
CO4	S	M	S	M	M
CO5	M	S	M	S	S
S- Strong, M- Medium, L – Low					

SEMESTER VI		
Course Title	CORE IX - NUCLEAR PHYSICS	Knowledge level
On Completion of the Course, the students will be able		
1	CO	To understand the fundamentals of the formation of a nucleus, composition of a nucleus with their energy
2	CO	Describe the functions and characteristics of detectors and accelerators
3	CO	To enable the students to acquire knowledge of Alpha,Beta and gamma rays
4	CO	Acquire knowledge of nuclear energy, fission and fusion with a particle accelerator

5	CO Categorize the elementary particles and their symmetries	K5
---	--	----

On Completion of the Course, the students will be able		
PO1	To explain the Nuclear Model, Binding energy and Meson theory	K1
PO2	To gain the knowledge of GM counter and Betatron	K2
PO3	Understand the Fermi's theory of beta rays and Artificial radioactivity	K3
PO4	Students can analyse the energy released by the nucleus during the fission and fusion process	K4
PO5	Understand the Cosmic rays and Fundamental interactions	K5

MAPPING WITH PO - NUCLEAR PHYSICS-21UPH09					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	S
CO2	M	S	M	S	M
CO3	S	M	S	M	S
CO4	M	S	S	M	S
CO5	S	M	M	S	M
S- Strong, M- Medium, L – Low					

SEMESTER VI		
Course Title	CORE X - QUANTUM MECHANICS AND RELATIVITY	Knowledge level
On Completion of the Course, the students will be able		
1	CO Discuss and establish the dual nature of matter	K1
2	CO Basic ideas of Wave Mechanics	K2
3	CO Apply the Schrodinger theory to study various one-dimensional quantum systems	K3
4	CO Apply the separation of variables technique to solve Hydrogen atom problem	K4
5	CO Acquire conceptual knowledge of space-time, frames of references	K5

On Completion of the Course, the students will be able		
PO1	Understand the basics concepts of Group	K1

	,Phase velocity	
PO2	To gain the ideas of Gamma-ray microscope, Operator.	K2
PO3	To knowlwdge of Normalized wave function, Tunneling effect	K3
PO4	To gain the ideas of Separation of variables and Eigen functions	K4
PO5	To knowlwdge of Minkowski's space , Addition velocities	K5

MAPPING WITH PO - QUANTUM MECHANICS AND RELATIVITY-21UPH10

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	M
CO2	M	S	S	M	S
CO3	S	M	M	M	S
CO4	M	S	S	M	S
CO5	M	M	S	S	M

S- Strong, M- Medium, L – Low

5. DEPARTMENT OF CHEMISTRY

PROGRAMME EDUCATIONAL OBJECTIVES AND OUTCOMES

Programme Educational Objectives	
PEO1	To impart knowledge in fundamental aspects of all branches of Chemistry.
PEO2	To acquire basic knowledge in the specialized areas like Polymer Chemistry, Environmental Chemistry, Dye Chemistry, Pharmaceutical Chemistry, Industrial Chemistry.
PEO3	To create manpower in Chemical industries and help their growth
PEO4	To prepare candidates for a career in Chemical industries

Programme Specific Outcomes(PSOs) After completion of this programme the candidate will	
PSO1	Have enormous job opportunities at all levels of chemical, pharmaceutical and foodproduct industries.
PSO2	Get specific placements in R & D and synthetic division of polymer industries & Allieddivisions.
PSO3	Appear in competitive exams conducted by service commission
PSO4	Gain complete knowledge about all fundamental aspects of chemistry
PSO5	Learn about the emerging field of green chemistry, nanochemistry and polymerchemistry
PSO6	Carry out experiments in the area of organic analysis, estimation, inorganic semi-microanalysis, conductometric & potentiometric equipment.

Programme Outcomes(POs) On successful completion of this programme, students will have the ability to	
PO1	Think critically and analyze chemical problems.
PO2	Present scientific and technical information resulting from laboratory experimentation in both written and oral formats.
PO3	Work effectively and safely in a laboratory environment.
PO4	Use technologies and instrumentation together to explore new areas of research
PO5	Work as a member of interdisciplinary problem solving team.
PO6	Apply their scientific skill to innovative studies.

SEMESTER I

Subject Title	GENERAL CHEMISTRY I	Semester	I
Subject Code	21UCH01	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Exploring the elements in periodic table
CO2	Analyze the bonding nature of inorganic molecules
CO3	Geometrical study of organic compounds using hybridization
CO4	Study of IUPAC nomenclature of organic compounds
CO5	Obtaining the behavior of gases

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

SEMESTER II

Subject Title	GENERAL CHEMISTRY II	Semester	II
Subject Code	21UCH02	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Explaining nitrogen and oxygen family
CO2	Analyzing Aromaticity of organic compounds
CO3	Compare Substitution and elimination reactions
CO4	Uses of liquid state, liquid crystal and colloids
CO5	Design structure of crystals using solid state

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	VOLUMETRIC ESTIMATION AND ORGANIC PREPARATION	Semester	II
---------------	---	----------	----

Subject Code	21UCHP01	Specialization	NA
---------------------	-----------------	-----------------------	-----------

Type	Core: Practical		
-------------	------------------------	--	--

Course Outcomes:

1. Volumetric estimation of Acidimetric -Alkalimetric.
2. Permanganometric Estimation and Dichrometry Estimation.
3. Complexometric titration.
4. One step preparation of organic compounds.

SEMESTER III

Subject Title	GENERAL CHEMISTRY III	Semester	III
Subject Code	21UCH03	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Basic principle in qualitative analysis and nuclear chemistry
CO2	Outline study of halogen family and rare gases
CO3	Various mechanisms involving carbonyl compounds
CO4	Terminologies of Thermodynamics
CO5	Application of Carnot Theorem and significance of entropy

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

SEMESTER IV

Subject Title	GENERAL CHEMISTRY IV	Semester	IV
----------------------	-----------------------------	-----------------	-----------

Subject Code	21UCH04	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Discuss the properties of transition elements and principles of metallurgy
CO2	Explain the basic principles of gravimetric analysis
CO3	Preparation and uses of saturated and unsaturated acids
CO4	Design various reaction mechanisms
CO5	Interpreting second and third law of thermodynamics

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	INORGANIC QUALITATIVE ANALYSIS AND INORGANIC PREPARATIONS	Semester	IV
Subject Code	21UCHP02	Specialization	NA
Type	Core: Practical	L:T:P:C	30:0:2:2

Course Outcomes:

1. Analysis of a mixture containing two cations and two anions.
2. Anions to be studied : Carbonate, sulphate, nitrate, fluoride.
3. Cations to be studied : Lead, Bismuth, Copper, Cadmium.
4. Inorganic preparations.

SEMESTER V

Subject Title	21UCH05	Semester	V
Subject Code	INORGANIC CHEMISTRY	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Nomenclature and theories of Coordination chemistry
CO2	CFT and VBT applications and uses
CO3	Reactions Mechanisms and Applications of Complexes
CO4	Chemistry of f-block elements
CO5	Concepts of acids, bases and non aqueous solvent

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	ORGANIC CHEMISTRY	Semester	V
Subject Code	21UCH06	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Stereoisomerism and elements of symmetry
CO2	Geometrical isomerism and conformational analysis
CO3	Phenols and its properties

CO4	Various molecular rearrangements
-----	----------------------------------

CO5	Alkaloids and Terpenoids
-----	--------------------------

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	PHYSICAL CHEMISTRY	Semester	IV
Subject Code	21UCH07	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Chemical Equilibrium and Absorption
CO2	Chemical kinetics and rate of reactions
CO3	Collision Theory, Lindemann theory and ARRT
CO4	Metallic and electrolytic conductance, Variation of conductance
CO5	Theory of strong electrolytes

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	ANALYTICAL CHEMISTRY	Semester	V
Subject Code	21UCHE01	Specialization	NA
Type	Elective: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Column Chromatography, TLC and Paper Chromatography
CO2	TGA, DTA and Thermometric Titrations
CO3	Polarography and Amperometric Titrations
CO4	UV-Visible & IR spectroscopy
CO5	NMR & Mass spectroscopy

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	AGRICULTURAL CHEMISTRY	Semester	V
Subject Code	21UCHS03	Specialization	NA
Type	SBEC: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Fertilizers, Phosphate and Potassium Fertilizers
CO2	Manures and Handling and storage practices
CO3	Pesticides And Insecticides
CO4	Fungicides And Herbicide

CO5	Soil and Soil Analysis
-----	------------------------

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	DYE CHEMISTRY	Semester	V
Subject Code	21UCHS04	Specialization	NA
Type	SBEC: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Colour and constitutions, Classification, Anthroquinone and Mordant Dyes
CO2	Diphenylmethane Dye, Triphenylmethane Dyes, Indigo Dye
CO3	Phthalein Dyes, Xanthein Dyes, Acridine dyes and Reactive dyes
CO4	Requirements of organic pigment, Applications of dyes in other areas
CO5	Textile Effluent, Effluent treatment plants

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

SEMESTER VI Subject Title	INORGANIC CHEMISTRY	Semester	VI
Subject Code	21UCH08	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Synthesis and Preparation of Organometallic compounds
CO2	Organometallic compound and Metal Carbonyls
CO3	Essential of Bioinorganic Chemistry
CO4	Some Special compounds of silicones and Boron nitrides
CO5	Magnetic properties of Transition metal complexes

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	ORGANIC CHEMISTRY	Semester	VI
Subject Code	21UCH09	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Classification of carbohydrates
CO2	Amino acids and proteins
CO3	Principles of photochemistry and Photochemistry of carbonyl compound

CO4	Steroids, Hormones and Vitamins
CO5	Heterocyclic compounds and aromaticity

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	PHYSICAL CHEMISTRY	Semester	VI
Subject Code	21UCH10	Specialization	NA
Type	Core: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Solutions of gases in liquid, Nernst Distribution law.
CO2	Phase Rule and its applications
CO3	Basics of electrochemistry
CO4	Concentration cells with and without transference and Storagecells
CO5	Photochemistry and its applications

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	NANO AND GREEN CHEMISTRY	Semester	VI
Subject Code	21UCHE02	Specialization	NA
Type	ELECTIVE: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Introduction To Nanoscience And Nanotechnology
CO2	Nanomaterial Synthesis And Characterisation Techniques
CO3	Properties And Applications Of Nanostructures
CO4	Principles Of Green Chemistry
CO5	Designing A Green Chemical Synthesis

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	PHARMACEUTICAL CHEMISTRY	Semester	VI
Subject Code	21UCHS05	Specialization	NA
Type	SBEC: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Important terminology of pharmaceutical chemistry
CO2	Sulphonamides and Antibiotics
CO3	Analgesics and Antipyretic analgesics
CO4	Anaesthetics and Antianaemic drugs
CO5	Diabetics, AIDS and Cardiovascular drugs

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	INDUSTRIAL CHEMISTRY	Semester	VI
Subject Code	21UCHE03	Specialization	NA
Type	ELECTIVE: Theory		

Course Outcomes:

CO Number	CO Statement
CO1	Industrial fuels and its classifications
CO2	Water treatment and its uses
CO3	Sugar Industry, Match industries and Explosives
CO4	Renewable and non renewable sources of energy
CO5	Industrial Wastes treatment

Mapping with Programme Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	M	S	M	M	S
CO5	S	S	S	S	S	M

Strong – S; Medium – M; Low - L

Subject Title	PHYSICAL CHEMISTRY PRACTICAL	Semester	VI
Subject Code	21UCHP03	Specialization	NA
Type	Core: Practical		

Course Outcomes:

1. Determination of rate constant.
2. Molecular weight determination – Rastmethod.
3. Heterogenous Equilibrium
4. Phase rule : Simple Eutectic system – Naphthalene –Biphenyl
5. Potentiometry – Potentiometric titration

Subject Title	GRAVIMETRIC ESTIMATIONS AND ORGANIC PRACTICALS	Semester	VI
Subject Code	21UCHP04	Specialization	NA
Type	Core: Practical		

Course Outcomes:

1. Gravimetric Estimation.
2. Organic Qualitative Analysis.

7. DEPARTMENT OF MATHEMATICS

PROGRAMME OUTCOME

PO1	Good foundation in fundamentals of Mathematics subjects will be acquired.
PO2	Knowledge and skills to undertake further studies in Mathematics and its allied areas will be ensured
PO3	Scientific temper, analytical thinking, imagination, creativity and critical thinking will be developed.
PO4	Knowledge and confidence to face various competitive examinations will be gained.

B.Sc., MATHEMATICS

SEMESTER I

CORE I - CLASSICAL ALGEBRA

Paper Code: 21UMA01 / 21UMACA01

Max. Marks: 75

COURSE OUTCOME

On completion of the course, students should be able to

CO 1	Gain knowledge about binomial, exponential and logarithmic series
CO 2	Examine the consistency of linear equations and application of Cayley-Hamilton theorem
CO 3	Know the application of relations between the roots and coefficients of an equation
CO 4	Analyse the method of solving reciprocal equations and diminishing the roots of an equation
CO 5	Examine the existence of roots of an equation and determine the roots by using Newton's and Horner's methods

SEMESTER I
CORE II – CALCULUS

Paper Code: 21UMA02 / 21UMACA02

Max. Marks: 75

COURSE OUTCOME

- Gain knowledge about curvature and envelopes.
- Gain knowledge about integration and its applications.

SEMESTER II

CORE III - ANALYTICAL GEOMETRY OF 2D & 3D

Paper Code: 21UMA03 / 21UMACA03

Max. Marks: 75

COURSE OUTCOME

CO1	To gain knowledge about Conic 2D
CO2	Understand the concepts of coplanar lines and skew lines and find the shortest distance between them
CO3	To gain the knowledge about sphere and identify the characteristics of sphere
CO4	Enhance the fundamental concepts of cone and cylinder
CO5	To develop the concepts of coincoides.

SEMESTER II
Core IV – TRIGONOMETRY & VECTOR ANALYSIS

Paper Code: 21UMA04 / 21UMACA04

Max. Marks: 75

COURSE OUTCOME

On completion of the course, students should be able to

CO 1	Recall the basic concepts and understand the expansions of Trigonometric functions
CO 2	Acquire knowledge on Hyperbolic functions and Logarithm of complex numbers
CO 3	Gain knowledge on the concept of divergence, curl and integration of vector point functions
CO 4	Analyse and work with the problems related to line integrals, surface and volume integrals
CO 5	Solve the problems related to Gauss Stoke's and Green's theorems

**SEMESTER III
CORE V: NUMBER THEORY**

Paper Code: 21UMA05 / 21UMACA05

Max. Marks: 75

COURSE OUTCOME

After completing the course the students will be able to

- To understand the basic properties of integers.
- Formally understand and prove various theorems.
- Applying theoretical results acquired to solve different problems.

**SEMESTER III
Core -VI DIFFERENTIAL EQUATIONS**

Paper Code: 21UMA06 / 21UMACA06

Max. Marks: 75

COURSE OUTCOME

- Students will be able to classify the differential equations with respect to order and linearity.
- Students will be able to solve the second order differential equations, linear equations, linear differential equations with constant coefficients.
- Students will be able to understand the basic properties of standard PDE's and solve the problem in Clairaut's form.

**SEMESTER III
CORE V: NUMBER THEORY**

Paper Code: 21UMA05 / 21UMACA05

Max. Marks: 75

**SEMESTER III
SBEC I – FINANCIAL MATHEMATICS**

Paper Code: 21UMAS01 / 21UMACAS01

Max. Marks: 75

COURSE OUTCOME

After completing the course the students will be able to

- To understand the basic concepts of Financial Mathematics.
- To understand and prove theorems.
- To understand the method to solve the problems by applying principles and concepts of Financial Mathematics

**SEMESTER III
CORE V: NUMBER THEORY**

Paper Code: 21UMA05 / 21UMACA05

Max. Marks: 75

COURSE OUTCOME

After completion of these chapters the student are expected to

- a. Have a sound knowledge of Laplace Transform and its properties.
- b. Have sufficient exposure to get the solution of certain linear differential equation using Laplace Transform and inverse Laplace Transform.
- c. Have an idea of periodic function and come to know how to expand the given functions as a series of sines and cosines which are simple periodic functions.
- d. Have an idea of Fourier Transform and its properties which can be applied in future for solving Partial Differential equations by reducing the number of independent variable by one.

**SEMESTER III
CORE V: NUMBER THEORY**

Paper Code: 21UMA05 / 21UMACA05

Max. Marks: 75

**SEMESTER IV
CORE VIII: NUMERICAL METHODS**

Paper Code: 21UMA08 / 21UMACA08

Max. Marks: 75

COURSE OUTCOME

Students who successfully complete the course will provide the following outcomes:

- Use numerical methods to solve the algebraic and transcendental equations by using Bisection, Newton's method and some iterative methods.
- Have a sufficient exposure in constructing difference tables and to use Newton's forward and backward formula for interpolation in equal intervals.
- Have learnt to construct divided difference table and to use Stirling's, Bessel's and Lagrange's interpolation formula for unequal intervals.
- Have understood the numerical differentiation and numerical differentiation and numerical integration by using Newton's methods and Trapezoidal, Simpson's rule.
- Have learnt the methods like matrix inversion, Gaussian, Gauss seidel methods etc., for solving linear system of algebraic equations.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

COURSE OUTCOME

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

- CO 1** Make different Alignments in a document and an Application for a job.
- CO 2** Generate Bio-Data, and Table Structures.
- CO 3** Create Mathematical Statements using LaTeX.
- CO 4** Prepare Articles and Inserting Pictures.
- CO 5** Prepare Question paper and PowerPoint presentation in LaTeX format.

SEMESTER V
CORE IX: MODERN ALGEBRA

Paper Code: 21UMA09 / 21UMACA09

Max. Marks: 75

COURSE OUTCOME

On completion of the course, students should be able to

CO 1	Understand the concepts of various Subgroups and its applications
CO 2	Acquire Knowledge about the concepts of homomorphisms, isomorphisms and automorphisms
CO 3	Gain knowledge about the concepts of Rings and Quotient Rings
CO 4	Analyse the concept of Field and Euclidean Ring
CO 5	Analyse and demonstrate the properties of Polynomial Rings

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

SEMESTER V
CORE X: REAL ANALYSIS - I

Paper Code: 21UMA10 / 21UMACA10

Max. Marks: 75

COURSE OUTCOME

After completing the course, the students are expected to know

- Understand basic concepts of sequence and series.
- Understand and prove various theorems.
- Understand the method to solve simple problems by applying concepts of Analysis.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

COURSE OUTCOME

On successful completion of this course students will be able to

- Formulate simple reasoning and learning optimization problems.
- Analyze a problem and can select a suitable strategy.
- Apply an appropriate method to obtain the solution to a problem.
- Manipulate the basic mathematical structures underlying these methods.
- Evaluate analytically the limitations of these methods.

SEMESTER V
CORE XII - MECHANICS

Paper Code: 21UMA12 / 21UMACA12

Max. Marks: 75

COURSE OUTCOME

CO1	To recollect the basic concept of forces and understand the Varignon's theorem.
CO2	To understand the laws of friction and equilibrium of a particle on a rough inclined plane under a force
CO3	To understand the path of a projectile is a parabola and to apply the concept of projectile.
CO4	To understand the impulse and impulsive force and to gain knowledge about collision of elastic bodies.
CO5	To understand the geometrical representation of simple harmonic motion and solve the problems on the seconds pendulum.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

COURSE OUTCOME

On successful completion of this course students will be able to

- Understand the structure of C program, its keywords, declaration of variables and defining symbolic commands.
- Use arithmetic operators, logical operators, relational operators, increment and decrement operators and conditional operators while writing a C program.
- Know the decision making using IF statement, IF ELSE statement, and to have jumps in loops using GOTO, WHILE, DO, FOR and SWITCH statement.
- Define one dimensional array, two dimensional arrays, and to declare string variables.
- Understands the need for user defined functions, return values and their types, calling function, and category of functions.

SEMESTER VI
CORE XIII: LINEAR ALGEBRA

Paper Code: 21UMA13 / 21UMACA13

Max. Marks: 75

COURSE OUTCOME

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

CO 1	Find the linear dependence and independence, dimension of spaces.
CO 2	Know the concepts of null spaces, range and Matrix representation of a linear transformation.
CO 3	Solve System of Linear equations by using Rank.
CO 4	Understand about Inner Product Spaces.
CO 5	Compute the orthogonal projection of a vector.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

SEMESTER VI
CORE XIV: REAL ANALYSIS – II

Paper Code: 21UMA14 / 21UMACA14

Max. Marks: 75

COURSE OUTCOME

After completing the course the students will be able to

- Understand concepts of connectedness, completeness and compactness of metric spaces.
- Understand basic concepts of Riemann Integration and solving simple problems.
- Solving problems by using theorems on derivatives.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

COURSE OUTCOME

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

CO 1	Know the concepts of Limits, Continuity and Analytic functions.
CO 2	Solve Complex Integrals.
CO 3	Discuss Convergence of Sequences and Series, Taylors series and Laurents series.
CO 4	Find different Singularities and Residues
CO 5	Understand various Linear Transformations and Conformal Mappings

SEMESTER VI
CORE XVI: GRAPH THEORY

Paper Code: 21UMA16 / 21UMACA16

Max. Marks: 75

COURSE OUTCOME

After completing the course, Students will be able to

- Formally understand and prove theorems and lemmas.
- Apply theoretical knowledge acquired to solve realistic problems in real life.
- Apply principles and concepts of graph theory in practical situations and to improve the proof writing skills.

SEMESTER IV
SBEC II: LATEX – PRACTICAL

Paper Code: 21UMASP02

Max. Marks: 75

SEMESTER VI
SBEC IV: OFFICE AUTOMATION (PRACTICAL)

Paper Code: 21UMASP04

Max. Marks: 75

COURSE OUTCOME

Acquire practical knowledge about MS-Word, MS-Excel, MS-PowerPoint and Ms-Access.

ELECTIVE COURSE – I

GROUP A

ELECTIVE – DISCRETE MATHEMATICS

Paper Code: 21UMAE01

Max. Marks: 75

COURSE OUTCOME

On completion of the course, students should be able to

CO 1	Recall the various concepts of Mathematical Logic
CO 2	Understand the concepts of different types of normal forms
CO 3	Classify the various types of functions and make them to use in practical applications related to computer science
CO 4	Gain knowledge about the Algebraic systems
CO 5	Understand the concepts of Boolean Algebra and its applications

GROUP A
ELECTIVE – ASTRONOMY

Paper Code: 21UMAE02

Max. Marks: 75

COURSE OUTCOME

- Gain knowledge about solar system.
- Gain knowledge about double & multiple stars.

GROUP A
ELECTIVE – JAVA PROGRAMMING
Paper Code: 21UMAE03 **Max. Marks: 75**

COURSE OUTCOME

- Understand fundamentals of programming such as Variables, Conditional and iterative execution, methods etc.
- Understand fundamentals of object – oriented Programming in JAVA, including defining classes, invoking methods, using class libraries, utilities in applets etc.
- Be aware of the important topics and principles of software development.
- Have the ability to write a computer program to solve specified problems.
- Be able to use the JAVA SDK environment to create, debug and run simple JAVA programs.

ELECTIVE COURSE – II
GROUP B
ELECTIVE – FUZZY SETS AND FUZZY LOGIC
Paper Code: 21UMAE04 **Max. Marks: 75**

COURSE OUTCOME

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

CO Number	CO Statement
CO1	Calculate support, height, normal alpha cuts and strong alpha cuts from the Membership Functions
CO2	Manipulate standard fuzzy operations such as complements, t – norms and t – conorms
CO3	Analyze the concepts of fuzzy numbers and linguistic variables
CO4	Compute fuzzy relations for equivalence and compatibility
CO5	Apply the concepts of fuzzy logic, fuzzy propositions and quantified propositions to mathematical modeling in uncertain situation

GROUP B
ELECTIVE – Formal Languages and Automata Theory

Paper Code: 21UMAE05

Max. Marks: 75

COURSE OUTCOME

- Gain knowledge about the Grammars, Languages and Automata Theory.
- Understanding the features of Turing Machine and Computability Theory

GROUP B
ELECTIVE – C++ PROGRAMMING

Paper Code: 21UMAE06 **Max. Mark: 75**

COURSE OUTCOME

- Understand the Basic concepts of object oriented programme, Expressions, control structures, Classes and objects.
- Understand dynamic memory management techniques using constructors, destructors, etc.
- Understand the concept of function overloading, operator overloading, virtual functions and polymorphism.
- Demonstrate the use of various OOPs concepts with the help of programs.

ALLIED MATHEMATICS

(For B.Sc. PHYSICS / B.SC COMPUTER SCIENCE / B.SC. CHEMISTRY)

SEMESTER - I / III

ALLIED MATHEMATICS – I

ALGEBRA AND CALCULUS

Paper Code: 21UMAA01

Max. Marks: 75

COURSE OUTCOME

On completion of the course, students should be able to

CO 1	Know the application of relations between the roots and coefficients of an equation and diminishing the roots of an equation
CO 2	Ability to solve the consistency of linear equations and application of Cayley-Hamilton theorem
CO 3	Understanding the concepts of Cartesian co-ordinates, parametric co-ordinates and polar co-ordinates.
CO 4	Understand the basic properties of PDE.
CO 5	Gain the skill to solve problems.

COURSE OUTCOME**On completion of the course, students should be able to**

CO 1	Understanding the concepts of Maxima and Minima.
CO 2	Developing the knowledge in Numerical Methods problem solving.
CO 3	Understanding the second order differential equations with constant coefficients.
CO 4	Understand the basic properties of Laplace Transforms.
CO 5	Solving the simple problems in inverse Laplace and its applications.

SEMESTER - II / IV**ALLIED MATHEMATICS - III – PRACTICALS****Paper Code: 21UMAAP01****Max. Marks: 75**

COURSE OUTCOME

- Gain the skill to solve the problems in Matrices.
- Gain knowledge to solve the problems in partial differentiation.
- Gain knowledge on the concept of divergence, curl and integration of vector point functions

COURSE OUTCOME

After completion of this course, Students will be able to

2. Make sense of problems, develop strategies to find solutions and persevere in solving them.
3. Use appropriate technology in a given context.
4. Critique and evaluate quantitative arguments that utilize mathematics, statistical and quantitative information.
5. Solve problems in numbers, decimal fractions, square root and cube roots.

SEMESTER IV
NON MAJOR ELECTIVE COURSE – II

QUANTITATIVE APTITUDE – II

Paper Code: 21UMAN02

Max. Marks: 75

COURSE OUTCOME

After completion of this course, Students will be able to,

- Make sense of problems, develop strategies to find solutions and persevere in solving them.
- Use appropriate technology in a given context.
- Solving the problem on time and work, time and distance, boat and stream.
- Solving the problem on logarithms, volume and surface area, height and distance, odd man out.

8. DEPARTMENT OF COMPUTER SCIENCE

PROGRAMME : B.Sc., COMPUTER SCIENCE

PROGRAMME OBJECTIVES AND OUTCOMES

Programme Educational Objectives (PEOs)	
PEO1	Graduates are prepared to be employed in IT industries by providing expected domain Knowledge
PEO2	Graduates are provided with practical training, hands-on to meet the industrial needs.
PEO3	Graduates are motivated in career and entrepreneurial skill development to become global leaders
PEO4	Graduates are trained to demonstrate creativity, develop innovative ideas and. to work in teams to accomplish a common goal
PEO5	Graduates are trained to address social issues and guided to approach problems with solutions.

Programme Specific Outcomes(PSOs)	
PSO1	Apply domain knowledge and problem solving skills to solve real time problems.
PSO2	Acquire good employability skills which will ensure exceptional career opportunities in IT companies.
PSO3	Get a strong foundation to pursue higher education in the field of Computer Science/Applications

Programme Outcomes(POs)	
PO1	To understand the fundamental concepts of computer system, including hardware and software.

PO2	To Design, and analyze precise specifications of algorithms, procedures, and interaction behavior.
PO3	To apply the appropriate technologies, skills and tools in various fields of Computer Science.
PO4	To analyze impacts of computing on individuals, organization and society.

SEMESTER I

Subject Title	PROBLEM SOLVING THROUGH C	Semester	I
Subject Code	21UCS01	Specialization	NA
Type	Core: Theory	L:T:P:C	86:6:0:5

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Recognize the Basic Terminologies of C Programming	K1
CO2	Understanding the statement structure and apply simple problems	K2,K3
CO3	Understand and apply the pre-defined functions and user defined functions and then apply in simple problems	K3
CO4	Demonstrate the operation of Structures and unions.	K3,K4
CO5	Recognize the operation of Files	K3,K4

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
------------------	------------	------------	------------	------------

CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	PRACTICAL I : C-PROGRAMMING	Semester	I
Subject Code	21UCSP01	Specialization	NA
Type	Core: Practical	L:T:P:C	45:0:3:2

Course Outcomes:

1. Study all the Basic Statements in C Programming.
2. Practice the usage of branching and looping statements.
3. Apply string functions and arrays usage.
4. Analysis the use of pointers and files.

Subject Title	DATA STRUCTURES AND ALGORITHMS	Semester	II
Subject Code	21UCS02	Specialization	NA
Type	Core: Theory	L:T:P:C	45:3:0:5

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the concept of algorithms.	K1
CO2	Understanding the stack and queues.	K2

CO3	Apply linked list for other data structures.	K2, K3
CO4	Evaluate the trees and sorting methods.	K3,K4
CO5	Analyze the sorting and file organizations.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	DATA STRUCTURES USING C	Semester	II
Subject Code	21UCSP02	Specialization	NA
Type	Core: Practical	L:T:P:C	45:0:3:2

Course Outcomes:

1. Study all the Basic operation of matrices and stack.
2. Practice the usage of branching and looping statements in hash table.
3. Apply arrays for stack and queue.
4. Analysis the use of pointers for linked list, doubly linked list and tree traverse.

Subject Title	COMPUTER ORGANIZATION AND ARCHITECTURE	Semester	II
Subject Code	21UCS03	Specialization	NA
Type	Core: Theory	L:T:P:C	56:4:0:5

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Recognize the Basic Number system and logic gates.	K1
CO2	Understanding the flip flops and Karnaugh maps.	K2,K3
CO3	Understand and apply micro operation and data transfer.	K3
CO4	Demonstrate the computer arithmetic and addressing modes.	K3,K4
CO5	Analyze the memory and I/O organizations.	K3,K4

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	RELATIONAL MANAGEMENT SYSTEMS	DATABASE	Semester	III
Subject Code	21UCS04		Specialization	NA
Type	Core: Theory		L:T:P:C	41:3:0:5

<u>Course Outcomes:</u> CO Number	CO Statement	Knowledge Level
CO1	Remember the concept of database.	K1
CO2	Understanding the data models and ER Diagram.	K2
CO3	Apply SQL commands.	K2, K3
CO4	Evaluate the DBMS in SQL.	K3,K4
CO5	Analyze the Transaction management.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	PRACTICAL III – SQL and PL/SQL	Semester	III
Subject Code	21UCSP03	Specialization	NA
Type	Core: Practical	L:T:P:C	30:0:2:2

Course Outcomes:

1. Study all the Basic DDL and DML Commands.
2. Practice the usage of SQL Statements.
3. Apply PL/SQL code usage.
4. Analysis the use of PL/SQL for complex problems.

Subject Title	COMPUTER NETWORKS	Semester	III
Subject Code	21UCS05	Specialization	NA

Type	Core: Theory	L:T:P:C	41:3:0:4
------	--------------	---------	----------

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the concept of networks and its types.	K1
CO2	Understanding the wireless communications.	K2
CO3	Understand and Apply data link protocols.	K3
CO4	Evaluate the network design issues.	K3,K4
CO5	Analyze the connection issues.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	SBEC I - OFFICE AUTOMATION LAB	Semester	III
Subject Code	21UCSSP01	Specialization	NA
Type	SBEC: Practical	L:T:P:C	30:0:2:3

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the concept of word processing.	K1
CO2	Understanding the tools in Micro soft word.	K2
CO3	Understand and Apply Excel Features.	K3
CO4	Evaluate the EXCEL functions.	K3,K4
CO5	Analyze the different designs of MS Presentations.	K5

Subject Title	PROGRAMMING IN JAVA	Semester	IV
Subject Code	21UCS06	Specialization	NA
Type	Core: Theory	L:T:P:C	60:4:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the concepts of OOPS.	K1
CO2	Understand the basic Terminologies of languages and statements.	K2
CO3	Demonstrate the use classes and objects.	K2,K3
CO4	Evaluate the packages and exception handling methods.	K3,K4
CO5	Analyze the I/O Streams and graphics classes.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	M	S	L	M
CO4	M	S	M	S
CO5	S	S	-	-

S- Strong , M- Medium , L – Low

Subject Title	PRACTICAL IV- JAVA PROGRAMMING	Semester	IV
Subject Code	21UCSP04	Specialization	NA
Type	Core: Practical	L:T:P:C	45:0:3:2

Course Outcomes:

1. Study all the Basic Statements in java Programming.
2. Practice the usage of branching and looping statements.
3. Apply Packages and Interfaces.
4. Analysis the use of graphics tools in JAVA.

Subject Title	SBEC II : IMAGE EDITING TOOL	Semester	IV
Subject Code	21UCSSP02	Specialization	NA
Type	SBEC: Practical	L:T:P:C	45:0:3:3

Course Outcomes:

1. Study all the Basic tools in Photo Shop.
2. Practice the usage of web page creation and useable objects.
3. Apply various effects on image.
4. Analysis the use of coloring on images.

B.Sc.(Computer Science) / BCA / B.Sc.(Information Science)

Semester IV: Add-on Course

Internship Programme

Outcome:

At the end of this internship programme the students will be able to

- apply theory to real life
- work as a part of team
- learn from the company experts
- learn latest trending technologies
- come out with a high morale
- enrich CV

Subject Title	OPERATING SYSTEM	Semester	V
Subject Code	21UCS07	Specialization	NA
Type	Core: Theory	L:T:P:C	71:5:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Understand the structure and functions of Operating System	K1
CO2	Compare the performance of Scheduling Algorithms	K2
CO3	Understand and organize the memory	K1,K3
CO4	Evaluate the deadlock measures	K3,K4

CO5	Analyze the I/O hardware and software	K5
-----	---------------------------------------	----

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	WEB TECHNOLOGY	Semester	V
Subject Code	21UCS08	Specialization	NA
Type	Core: Theory	L:T:P:C	71:5:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Understand the structure of the documents in Web.	K1
CO2	Remember and understand the table handling tags.	K2
CO3	Understand and organize CSS.	K1,k3
CO4	Implement scripts in web page.	K3,K4
CO5	Evaluate script objects.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	PRACTICAL V : WEB TECHNOLOGY LAB	Semester	V
Subject Code	21UCSP05	Specialization	NA
Type	Core: Practical	L:T:P:C	45:0:3:2

Course Outcomes:

1. Study all the Basic tools.
2. Practice the usage of web page creation and useable objects.
3. Apply various effects on webpage.
4. Analysis the use of java script and html code.

Subject Title	LINUX AND SHELL PROGRAMMING	Semester	V
Subject Code	21UCS09	Specialization	NA
Type	Core: Theory	L:T:P:C	71:5:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
-----------	--------------	-----------------

CO1	Understand the structure and functions of Linux Operating System.	K1
CO2	Understand the basic commands of Shell.	K2
CO3	Implement text processing and arrays.	K3
CO4	Evaluate shell scripting.	K4
CO5	Analyze decision making and scripting in Linux.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	---
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	PRACTICAL IV : SHELL PROGRAMMING	Semester	V
Subject Code	21UCSP06	Specialization	NA
Type	Core: Practical	L:T:P:C	60:0:4:2

Course Outcomes:

1. Study all the Basic commands.
2. Practice the usage of shell script for system configuration.
3. Apply various effects piping and redirection process.
4. Analysis the use of shell script for simple process.

Subject Title	SBEC III : MOBILE APPLICATION DEVELOPMENT LAB	Semester	V
Subject Code	21UCSSP03	Specialization	NA
Type	SBEC: Practical	L:T:P:C	45:0:3:3

Course Outcomes:

1. Study all the Basic Tools.
2. Practice the usage of control panel objects.
3. Apply various commands for layouts and animations.
4. Analysis the use of SQLite I.

Subject Title	PROGRAMMING IN PYTHON	Semester	VI
Subject Code	21UCS10	Specialization	NA
Type	Core: Theory	L:T:P:C	86:6:0:5

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Understand the Basic Programming Logic.	K1
CO2	Understand the basic Statements.	K2
CO3	Implement Files and SQL.	K3
CO4	Evaluate Graphics in python.	K4
CO5	Analyze Version control system.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	M	---

CO2	M	M	M	S
CO3	S	M	L	M
CO4	M	S	M	S
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

Subject Title	PYTHON PROGRAMMING	Semester	VI
Subject Code	21UCSP07	Specialization	NA
Type	Core: Practical	L:T:P:C	60:0:4:3

Course Outcomes:

1. Study all the Basic commands.
2. Practice the usage of control flow statements.
3. Apply various commands in files and directories.
4. Analysis the use of MYSQL to connect database.

Subject Title	QUANTITATIVE APTITUDE	Semester	VI
Subject Code	21UCSS01	Specialization	NA
Type	Theory	L:T:P:C	41:3:0:3

<u>Course Outcomes:</u> CO Number	CO Statement	Knowledge Level
CO1	Remember the basic mathematical functions.	K1
CO2	Understand the problems of ages , profits and loss.	K2
CO3	Demonstrate the relationship of time with work and distance.	K3
CO4	Implement permutation and combinations problem.	K4
CO5	Analyze data representation methods.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	M	---

CO2	M	M	M	S
CO3	S	M	L	M
CO4	M	S	M	S
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

PRACTICAL – VIII MINI PROJECT

III YEAR / VI SEM

CO Number	CO Statement	Knowledge Level
CO1	Understand mini project.	K1
CO2	Understand the basic concepts	K2
CO3	Create own project in own way	K3
CO4	Evaluate project.	K4
CO5	Understand the Real time implementation .	K5

ELECTIVE I

Subject Title	SEMESTER – V PAPER - I DATA MINING AND WAREHOUSING	Semester	V
Subject Code	21UCSE01	Specialization	NA
Type	Elective : Theory	L:T:P:C	71:5:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of data mining and data preprocessing.	K1
CO2	Understanding the data mining primitives.	K2
CO3	Apply mining association rule.	K3
CO4	Evaluate classification and Prediction.	K4
CO5	Implement cluster analysis.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	M	-
CO2	S	L	M	S
CO3	S	M	L	M
CO4	M	S	-	S
CO5	S	L	M	S

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – V PAPER – II SOFTWARE PROJECT MANAGEMENT	Semester	V
Subject Code	21UCSE02	Specialization	NA
Type	Elective : Theory	L:T:P:C	71:5:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of software project management.	K1
CO2	Understanding domain processes in project management.	K1,K2
CO3	Apply task and activities.	K3
CO4	Evaluate issues in resource management.	K3,K4
CO5	Implement quality requirements.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	L	L
CO2	S	M	L	L
CO3	S	M	L	M
CO4	M	S	L	S
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – V PAPER - III SOFTWARE ENGINEERING	Semester	V
Subject Code	21UCSE03	Specialization	NA

Type	Elective : Theory	L:T:P:C	71:5:0:4
------	-------------------	---------	----------

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of software Engineering.	K1
CO2	Understanding requirement analysis.	K1,K2
CO3	Apply software design.	K3
CO4	Evaluate with UML.	K4
CO5	Implement coding and testing.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	L
CO2	S	M	L	L
CO3	S	M	M	L
CO4	M	S	L	L
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

ELECTIVE II

Subject Title	SEMESTER – VI PAPER – I MOBILE COMPUTING	Semester	VI
Subject Code	21UCSE04	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of mobile computing.	K1

CO2	Understanding mobile IP.	K1,K2
CO3	Apply Mobile Telecommunication system.	K3
CO4	Evaluate mobile ad hoc system.	K4
CO5	Implement mobile operating system.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	M	L
CO2	S	M	M	L
CO3	S	M	M	L
CO4	M	S	M	L
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – VI PAPER – II WIRELESS NETWORK	Semester	VI
Subject Code	21UCSE05	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of WLAN technologies.	K1
CO2	Understanding mobile IP.	K2
CO3	Apply TCP enhancements.	K3
CO4	Evaluate UTMS.	K4
CO5	Implement 4G.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	S	L
CO2	S	S	M	L
CO3	S	M	L	L
CO4	M	S	L	L
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – VI PAPER – III COMPUTER GRAPHICS	Semester	VI
Subject Code	21UCSE06	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of Graphics system.	K1
CO2	Understanding scans system and I/O Devices.	K2
CO3	Apply 2D Transformations.	K3

CO4	Evaluate 3D Transformations.	K4
CO5	Implement visual surface techniques.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	M	L
CO2	S	M	M	M
CO3	S	M	L	L
CO4	M	S	L	M
CO5	S	S	M	L

S- Strong , M- Medium , L – Low

ELECTIVE III

Subject Title	SEMESTER – VI PAPER – I SOFTWARE TESTING	Semester	VI
Subject Code	21UCSE07	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of SDLC	K1
CO2	Understanding Block box testing	K2

CO3	Apply system testing	K3
CO4	Evaluate performance testing	K4
CO5	Implement test planning.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	L	L
CO2	S	M	L	M
CO3	S	M	L	L
CO4	L	S	M	M
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – VI PAPER – II NETWORK SECURITY	Semester	VI
Subject Code	21UCSE08	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the OSI Security Architecture.	K1
CO2	Understanding Number theory and finite fields.	K2
CO3	Apply Block Ciphers and Data Encryption Std.	K3
CO4	Evaluate Public Key Cryptography and RSA.	K4
CO5	Implement Hash functions.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	L
CO2	S	M	L	L
CO3	S	M	L	L
CO4	M	L	S	M
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

Subject Title	SEMESTER – VI PAPER – III INTERNET OF THINGS	Semester	VI
Subject Code	21UCSE09	Specialization	NA
Type	Elective : Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember IoT and Web technology.	K1
CO2	Understanding M2M to IoT.	K2
CO3	Apply IoT Architecture.	K3
CO4	Evaluate IoT Applications.	K4
CO5	Implement IoT Privacy, Security and Governance.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	L
CO2	S	M	M	L
CO3	S	M	M	M
CO4	M	L	S	M

CO5	S	L	M	L
-----	---	---	---	---

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) - I

Subject Title	SEMESTER – III PAPER – I BASICS OF COMPUTERS	Semester	III
Subject Code	21UCSN01	Specialization	NA
Type	NMEC: Theory	L:T:P:C	26:2:0:2

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of computers.	K1
CO2	Understand number system.	K2
CO3	Demonstrate the functions of computer system.	K3
CO4	Study the input and output system.	K4
CO5	Analyze data processing.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) - I

Subject Title	SEMESTER – III PAPER – II COMPUTER APPLICATIONS FOR AUTOMATION	Semester	III
Subject Code	21UCSN02	Specialization	NA
Type	NMEC: Theory	L:T:P:C	26:2:0:2

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of computers.	K1
CO2	Understand MS word.	K2
CO3	Demonstrate the functions of MS excel.	K3
CO4	Study the basics of MS power point.	K4
CO5	Analyze data processing with MS Access.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	---
CO2	S	M	-	-
CO3	S	S	L	M
CO4	M	S	M	-
CO5	S	M	M-	L

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) – II

Subject Title	SEMESTER – IV PAPER – I BASICS OF INTERNET	Semester	IV
Subject Code	21UCSN03	Specialization	NA
Type	NMEC: Theory	L:T:P:C	26:2:0:2

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of Internet.	K1
CO2	Understand internet technologies.	K2
CO3	Demonstrate tags in HTML.	K3
CO4	Study the basics of create list and tables.	K4
CO5	Analyze frames and forms.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	M	---
CO2	S	M	-	-
CO3	S	S	M	L
CO4	M	S	L	-
CO5	S	L	M-	L

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) – II

Subject Title	SEMESTER – IV PAPER – II IMAGE EDITING TOOL	Semester	IV
Subject Code	21UCSN04	Specialization	NA
Type	NMEC: Theory	L:T:P:C	26:2:0:2

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of Photoshop.	K1
CO2	Understand the working with images.	K2
CO3	Demonstrate the layering in Photoshop.	k3
CO4	Implement the layer style.	K4
CO5	Analyze the action concept.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	L	---
CO2	S	M	-	L
CO3	S	M	L	L
CO4	M	S	L	L
CO5	S	L	-	M

S- Strong , M- Medium , L – Low

ALLIED OPTION I

Subject Title	SEMESTER I/III PAPER – I FUNDAMENTALS OF COMPUTERS	Semester	I/III
Subject Code	21UCSA01	Specialization	NA
Type	Allied: Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of computers.	K1
CO2	Understand the number system.	K2
CO3	Demonstrate the functions of computer system.	K3
CO4	Study the input and output system .	K4
CO5	Analyze of data processing.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong , M- Medium , L – Low

Subject Title	COMPUTER APPLICATIONS IN OFFICE	Semester	II/IV
Subject Code	21UCSA02	Specialization	NA
Type	Allied: Theory	L:T:P:C	56:4:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of MS word.	K1
CO2	Understand MS word.	K2
CO3	Demonstrate the functions of MS excel.	K3
CO4	Study the basics of MS excel workbooks.	K4
CO5	Analyze of data processing with MS power point.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	M	M
CO2	S	M	L	M
CO3	S	S	L	M
CO4	M	S	L	M
CO5	S	M	M-	L

S- Strong , M- Medium , L – Low

Subject Title	OFFICE AUTOMATION LAB	Semester	II/IV
Subject Code	21UCSAP01	Specialization	NA
Type	Allied: Practical	L:T:P:C	30:0:2:2

Course Outcomes:

On successful completion of the course, the students will

1. Understand the features in MS Word.
2. Select and apply worksheet and functions in MS EXCEL.
3. Combine multiple features in MS POWER POINT to prepare presentations.

ALLIED OPTION II

Subject Title	DATABASE SYSTEMS	Semester	I/III
Subject Code	21UCSA03	Specialization	NA
Type	Allied: Theory	L:T:P:C	86:6:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of Database.	K1
CO2	Understand Database Systems Concept and Architecture.	K2
CO3	Demonstrate the functions of the Relational Data Model and SQL.	K3
CO4	Study the basics of Basics SQL.	K4
CO5	Analyze advanced SQL commands and statements.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	M	M
CO2	S	M	L	S
CO3	S	M	L	M
CO4	M	S	M	M
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

Subject Title	E-COMMERCE TECHNIQUES	Semester	II/IV
Subject Code	21UCSA04	Specialization	NA
Type	Allied: Theory	L:T:P:C	56:4:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of Ecommerce and Indian Business.	K1
CO2	Understand WWW.	K2
CO3	Demonstrate the E payment system.	K3
CO4	Study the basics of Web Designing.	K4
CO5	Analyze Email components.	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	M	L	L
CO2	S	M	L	L
CO3	S	M	L	L

CO4	M	S	M	M
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

Subject Title	ALLIED PRACTICAL - IIHTML PROGRAMMING	Semester	II/IV
Subject Code	21UCSAP02	Specialization	NA
Type	Allied: Practical	L:T:P:C	30:0:2:2

Course Outcomes:

On successful completion of the course, the students will

1. Understand the features in HTML.
2. Select and apply tags for create text, list and table.
3. Combine multiple features in forms, frames and texts.

ALLIED OPTION III

Subject Title	SEMESTER I/III PAPER – I PROGRAMMING IN C	Semester	I/III
Subject Code	21UCSA05	Specialization	NA
Type	Allied: Theory	L:T:P:C	56:4:0:4

Course Outcomes:

CONumber	CO Statement	Knowledge Level
CO1	Recognize the Basic Terminologies of CProgramming	K1

CO2	Understanding the statement structure and apply simple problems	K2,K3
CO3	Understand and apply the pre-defined functions and user defined functions and then apply in simple problems	K3
CO4	Demonstrate the operation of Structures and unions.	K3,K4
CO5	Recognize the operation of Files	K3,K4

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

Subject Title	PROGRAMMING IN VISUAL BASIC	Semester	II/IV
Subject Code	21UCSA06	Specialization	NA
Type	Allied: Theory	L:T:P:C	56:4:0:4

Course Outcomes:

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of VB.	K1
CO2	Understand data and files in VB.	K2

CO3	Demonstrate the MDI Applications.	K3
CO4	Study of data control.	K4
CO5	Analyze the ADO and Active X.	K5

Mapping with Programme Outcomes

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	S	L	-
CO3	S	M	L	M
CO4	S	M	M	L
CO5	S	M	L	L

S- Strong , M- Medium , L – LowSubject Title	PROGRAMMING IN C & VISUAL BASIC PRACTICAL	Semester	II/IV
Subject Code	21UCSAP03	Specialization	NA
Type	Allied: Practical	L:T:P:C	30:0:2:2

Course Outcomes:

1. Study all the Basic Statements in C Programming.
2. Practice the usage of branching and looping statements.
3. Apply string functions and arrays usage.
4. Analysis the use of pointers and files.
5. Understand the features in VB.
6. Select and apply statements for design forms.
7. Combine multiple features in interface and database

9. DEPARTMENT OF BCA

SEMESTER I

PROBLEM SOLVING THROUGH C(21UCA01)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Recognize the Basic Terminologies of C Programming.
CO2	Understanding the statement structure and apply simple problems.
CO3	Understand and apply the pre-defined functions and user defined functions and then apply the simple problems.
CO4	Demonstrate the operation of Structures and unions.
CO5	Recognize the operation of Files.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

C-PROGRAMMING(21UCAP01)

COURSE OUTCOME:

1. Study all the Basic Statements in C Programming.
2. Practice the usage of branching and looping statements.
3. Apply string functions and arrays usage.
4. Analysis the use of pointers and files.

SEMESTER-II
OBJECT ORIENTED PROGRAMMING
CONCEPTS USING C++ (21UCA02)

COURSE OUTCOME

CO Number	CO Statement
CO1	Recognize the Basic Terminologies of oops.
CO2	Understanding the classes and objects.
CO3	Understand and apply the over loading, Inheritance and then apply the simple problems.
CO4	Demonstrate the pointers.
CO5	Recognize the operation of Files.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong , M- Medium , L – Low

C++ PROGRAMMING LAB (21UCAP02)

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in OOPS.
2. Select and apply proper statement relative to problems.
3. Combine multiple features in C++ to implement complex problems.

COMPUTER ORGANIZATION AND ARCHITECTURE (21UCA03)

COURSE OUTCOME

CO Number	CO Statement
CO1	Recognize the Basic Number system and logic gates.
CO2	Understanding the flip flops and Karnaugh-maps.
CO3	Understand and apply micro operation and data transfer.
CO4	Demonstrate the computer arithmetic and addressing modes.
CO5	Analyze the memory and I/O organizations.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

SEMESTER-III

DATA STRUCTURES ANDALGORITHMS (21UCA04)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the concept of algorithms.
CO2	Understanding the stack and queues.
CO3	Apply linked list for other data structures.
CO4	Evaluate the trees and sorting methods.
CO5	Analyze the sorting and file organizations.

MAPPING WITH PROGRAMME OUTCOMES

CO SNumber	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

OPERATING SYSTEM (21UCA05)

COURSE OUTCOME

CO Number	CO Statement
CO1	Understand the structure and functions of Operating System.
CO2	Compare the performance of Scheduling Algorithms.
CO3	Understand and organize the memory.
CO4	Evaluate the deadlock measures.
CO5	Analyze the I/O hardware and software.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO 1	PO 2	PO 3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

RELATIONAL DATABASEMANAGEMENT SYSTEMS

(21UCA06)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the concept of Database.
CO2	Understanding the data models and ER Diagram.
CO3	Apply SQL commands.
CO4	Evaluate the DBMS in SQL.
CO5	Analyze the Transaction management.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

SQL and PL/SQL

21UCAP03

COURSE OUTCOME:

1. Study all the Basic DDL and DML Commands.
2. Practice the usage of SQL Statements.
3. Apply PL/SQL code usage.
4. Analysis the use of PL/SQL for complex problem

OFFICE AUTOMATION LAB (21UCASP01)

COURSE OUTCOME:

CO Number	CO Statement
CO1	Remember the concept of word processing.
CO2	Understanding the tools in Micro soft word.
CO3	Understand and Apply Excel Features.
CO4	Evaluate the EXCEL functions.
CO5	Analyze the different designs of MS Presentations.

SEMESTER IV COMPUTER

NETWORKS (21UCA07)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the concept of networks and its types.
CO2	Understanding the wireless communications.
CO3	Understand and Apply data link protocols.
CO4	Evaluate the network design issues.
CO5	Analyze the connection issues.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

PROGRAMMIN IN JAVA (21UCA08)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the concepts of OOPS.
CO2	Understand the basic Terminologies of languages and statements.
CO3	Demonstrate the use classes and objects.
CO4	Evaluate the packages and exception handling methods.
CO5	Analyze the I/O Streams and graphics classes.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	M	S	L	M
CO4	M	S	M	S
CO5	S	S	-	-

S- Strong , M- Medium , L – Low

PRACTICAL IV-JAVA PRIGRAMMING (21UCAP04)

COURSE OUTCOME:

1. Study all the Basic Statements in java Programming.
2. Practice the usage of branching and looping statements.
3. Apply Packages and Interfaces.
4. Analysis the use of graphics tools in JAVA.

SOFTWARE ENGINEERING(21UCA09)

COURSEOUTCOME:

CO Number	CO Statement
CO1	Remember the basics of software engineering and models.
CO2	Understand requirement and Analysis.
CO3	Demonstrate the functions of software design.
CO4	Study the object modeling.
CO5	Analyze testing technologies.

PROGRAMME SPECIFIC OUT COME:

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong , M- Medium , L- Low

SBEC IV:IMAGE EDITING TOOL(21UCASP02)

COURSE OUTCOME:

1. Study all the Basic tools in Photo Shop.
 2. Practice the usage of web page creation and useable objects.
 3. Apply various effects on image.
 4. Analysis the use of coloring on images.
- .

SEMESTER V

DATA MINING AND WAREHOUSING(21UCA10)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of data mining.
CO2	Understand data mining query language.
CO3	Demonstrate the mining associative rules.
CO4	Study classification and prediction.
CO5	Analyze cluster Technologies.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PS01	PS02	PS03	PS04
CO1	S	S	M	-
CO2	M	S	-	S
CO3	S	S	L	M
CO4	M	S	M	L
CO5	S	M	M-	L

S- Strong , M- Medium , L – Low

SEMESTER V

WEB TECHNOLOGY(21UCA11)

COURSE OUTCOME

CO Number	CO Statement
CO1	Understand the structure of the documents in Web.
CO2	Remember and understand the table handling tags
CO3	Understand and organize CSS
CO4	Implement scripts in web page.
CO5	Evaluate script objects

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	S	S	S	-
CO2	S	M	M	S
CO3	S	L	L	M
CO4	M	S	M	S
CO5	S	L	S	S

S- Strong , M- Medium , L – Low

PRACTICAL V : WEB TECHONOLY LAB(21UCAP05)

COURSE OUTCOME:

1. Study all the Basic tools.
2. Practice the usage of web page creation and useable objects.
3. Apply various effects webpage.
4. Analysis the use of java script and html code.

VISUAL PROGRAMMING(21UCA12)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of VB.
CO2	Understand data and files in VB.
CO3	Demonstrate the MDI Applications.
CO4	Study of data control.
CO5	Analyze the ADO and Active X.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PS01	PS02	PS03	PS04
CO1	S	M	M	--
CO2	M	S	L	-
CO3	S	M	L	M
CO4	S	M	M	L
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

PRACTICAL V: PROGRAMMING IN VB

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in VB.
2. Select and apply statements for design forms.
3. Combine multiple features in interface and database.

BEC III : MOBILE APPLICATION DEVELOPMENT(21UCASP03)

COURSE OUTCOME:

1. Study all the Basic Tools.
2. Practice the usage of control panel objects.
3. Apply various commands for layouts and animations.
4. Analysis the use of SQLite I.

SEMESTER VI

PROGRAMMING IN PYTHON(21UCA13)

COURSE OUTCOME

CO Number	CO Statement
CO1	Understand the Basic Programming Logic.
CO2	Understand the basic Statements.
CO3	Implement Files and SQL.
CO4	Evaluate Graphics in python.
CO5	Analyze Version control system.

SEMESTER V
PRACTICAL V : PROGRAMMING IN VB(21UCAP06)

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in VB.
2. Select and apply statements for design forms.
3. Combine multiple features in interface and database.

SBEC III : MOBIL APPLICATION DEVELOPMENT

COURSE OUTCOME:

1. Study all the Basic Tools.
2. Practice the usage of control panel objects.
3. Apply various commands for layouts and animations.
4. Analysis the use of SQLite I.

SEMESTER VI

PROGRAMMING IN PYTHON(21UCA13)

COURSE OUTCOME

CO Number	CO Statement
CO1	Understand the Basic Programming Logic.
CO2	Understand the basic Statements.
CO3	Implement Files and SQL.
CO4	Evaluate Graphics in python.
CO5	Analyze Version control system.

SEMESTER V
PRACTICAL V : PROGRAMMING IN VB(21UCAPO6)

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in VB.
2. Select and apply statements for design forms.
3. Combine multiple features in interface and database.

SBEC III : MOBILE APPLICATION DEVELOPMENT(21UCASP03)

COURSE OUTCOME:

1. Study all the Basic Tools.
2. Practice the usage of control panel objects.
3. Apply various commands for layouts and animations.
4. Analysis the use of SQLite I.

SEMESTER VI

PROGRAMMING IN PYTHON(21UCA13)

COURSE OUTCOME

CO Number	CO Statement
CO1	Understand the Basic Programming Logic.
CO2	Understand the basic Statements.
CO3	Implement Files and SQL.
CO4	Evaluate Graphics in python.
CO5	Analyze Version control system.

MAPPING WITH PROGRAMME OUTCOMES

CO NUMBER	PO1	PO2	PO3	PO 4
CO1	S	S	M	---
CO2	M	M	M	S
CO3	S	M	L	M
CO4	M	S	M	S
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

PYTHON PROGRAMMING(21UCAP07)

COURSE OUTCOME:

1. Study all the Basic commands.
2. Practice the usage of control flow statements.
3. Apply various commands in files and directories.
4. Analysis the use of MYSQL to connect database.

QUANITITATIVE APTITUDE(21UCAS01)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic mathematical functions.
CO2	Understand the problems of ages, profits and loss.
CO3	Demonstrate the relationship of time with work and distance.
CO4	Implement permutation and combinations problem.
CO5	Analyze the data representation methods.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	M	---
CO2	M	M	M	S
CO3	S	M	L	M
CO4	M	S	M	S
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

SEMESTER V

SEMESTER –V PAPER-I ARTIFICIAL INTELLIGENCE

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of Artificial Intelligence.
CO2	Understanding Heuristic Search techniques.
CO3	Apply Knowledge representations.
CO4	Evaluate Using Predicate Logic.
CO5	Implement Expert System

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	M	L
CO2	S	M	M	L
CO3	S	M	M	L
CO4	M	S	M	L
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

SEMESTER-V PAPER-II MANAGEMENT INFORMATION SYSTEM

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of MIS.
CO2	Understanding MIS services.
CO3	Apply decision making concepts.
CO4	Evaluate MIS e services.
CO5	Implement Enterprise Management Systems.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
C01	M	S	M	L
C02	S	M	M	L
C03	S	M	M	L
C04	M	S	M	L
C05	S	M	L	L

S- Strong , M- Medium , L – Low

SEMESTER – V PAPER – III MOBILE COMPUTING

COURSE OUTCOME

CO Number	CO Statement
C01	Remember the basic concepts of mobile computing.
C02	Understanding mobile IP.
C03	Apply Mobile Telecommunication system.
C04	Evaluate mobile adhoc system.
C05	Implement mobile operating system.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
C01	M	S	M	L
C02	S	M	M	L
C03	S	M	M	L
C04	M	S	M	L
C05	S	M	L	L

S- Strong , M- Medium , L – Low

SEMESTER VI
PAPER-IWIRELESS NETWORK

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of WLAN Technologies.
CO2	Understanding mobile IP.
CO3	Apply TCP enhancements.
CO4	Evaluate UTMS.
CO5	Implement 4G.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	S	L
CO2	S	S	M	L
CO3	S	M	L	L
CO4	M	S	L	L
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

PAPER – II COMPUTER GRAPHICS

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of Graphics system.
CO2	Understanding scan system and I/O Devices.
CO3	Apply 2D Transformations.
CO4	Evaluate 3D Transformations.
CO5	Implement visual surface techniques.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	M	S	M	L
CO2	S	M	M	M
CO3	S	M	L	L
CO4	M	S	L	M
CO5	S	S	M	L

S- Strong , M- Medium , L – Low

SEMESTER – VI PAPER – III SOFTWARE TESTING

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of SDLC.
CO2	Understanding Block box testing.
CO3	Apply system testing.
CO4	Evaluate performance testing.
CO5	Implement test planning.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	L	L
CO2	S	M	L	M
CO3	S	M	L	L
CO4	L	S	M	M
CO5	S	M	M	L

S- Strong , M- Medium , L – Low ELECTIVE III

SEMESTER – VI PAPER – I E – COMMERCE TECHNOLOGY

COURSE OUTCOME

CO Number	CO Statement
CO1	Obtain a general understanding of basic business management concepts.
CO2	Have complete knowledge about basic technical concepts relating to E-Commerce.
CO3	Obtain thorough understanding about the security issues, threats and challenges of E-Commerce.
CO4	Evaluate e-Payment Systems.
CO5	Implement Mobile Commerce

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO4
CO1	M	S	M	L
CO2	S	M	M	L
CO3	S	M	M	L
CO4	M	S	M	L
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

SEMESTER – VI PAPER – II SOFTWARE PROJECT MANAGEMENT

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basic concepts of software project management.
CO2	Understanding domain processes in project management.
CO3	Apply task and activities.
CO4	Evaluate issues in resource management.

SEMESTER – VI PAPER – I E – COMMERCE TECHNOLOGY

COURSE OUTCOME

CO5	Implement quality requirements.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	L	L
CO2	S	M	L	L
CO3	S	M	L	M
CO4	M	S	L	S
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

SEMESTER – VI PAPER – III INTERNET OF THINGS

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember IoT and Web technology.
CO2	Understanding M2M to IoT.
CO3	Apply IoT Architecture.
CO4	Evaluate IoT Applications.
CO5	Implement IoT Privacy, Security and Governance.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	M	L
CO2	S	M	M	L
CO3	S	M	M	M
CO4	M	L	S	M
CO5	S	L	M	L

S- Strong , M- Medium , L – Low

**NON MAJOR ELECTIVE COURSE
(NMEC) – I**

SEMESTER III

**SEMESTER – III PAPER –
IBASICS OF COMPUTERS**

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of computers.
CO2	Understand number system.
CO3	Demonstrate the functions of computer system.
CO4	Study the input and output system.
CO5	Analyze the data processing.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong , M- Medium , L – Low

**NON MAJOR ELECTIVE COURSE
(NMEC) – I**

SEMISTER III

SEMISTER – III PAPER – II CPMPUTER APPLICATIONS FORAUTOMATION

COURSE OUTCOME

<u>CO Number</u>	<u>CO Statement</u>
CO1	Remember the basics of computers.
CO2	Understand MS word.
CO3	Demonstrate the functions of MS excel.
CO4	Study the basics of MS power point.
CO5	Analyze data processing with MS Access.

**MAPPING WITH PROGRAMME
OUTCOMES**

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	M	---
CO2	S	M	-	-
CO3	S	S	L	M
CO4	M	S	M	-
CO5	S	M	M-	L

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) – II

SEMESTER IV

SEMESTER-IV PAPER-IBASICS OF INTERNET(21UCAN03)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of Internet.
CO2	Understand internet technologies.
CO3	Demonstrate tags in HTML.
CO4	Study the basics of create list and tables.
CO5	Analyze frames and forms.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	M	---
CO2	S	M	-	-
CO3	S	S	M	L
CO4	M	S	L	-
CO5	S	L	M-	L

S- Strong , M- Medium , L – Low

NON MAJOR ELECTIVE COURSE (NMEC) – II

SEMESTER IV

SEMESTER-IV PAPERV- IIIIMAGE EDITING TOOLCOURSE

OUTCOME

CO Number	CO Statement
CO1	Remember the basics of Photoshop.
CO2	Understand the working with images.
CO3	Demonstrate the layering in Photoshop.
CO4	Implement the layer style.
CO5	Analyze the action concept.

**MAPPING WITH PROGRAMME
OUTCOMES**

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	L	---
CO2	S	M	-	L
CO3	S	M	L	L
CO4	M	S	L	L
CO5	S	L	-	M

S- Strong , M- Medium , L – Low

ALLIED OPTION I

SEMESTER I/III

SEMESTER I/III PAPER-1 FUNDAMENTALS OF COMPUTERS(21UCSA01)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of computers.
CO2	Understand the number system.
CO3	Demonstrate the functions of computer system.
CO4	Study the input and output system.
CO5	Analyze of data processing.

MAPPING WITH PROGRAMME OUTCOMES

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	M	---
CO2	M	M	-	S
CO3	S	M	L	M
CO4	M	S	M	-
CO5	S	M	-	L

S- Strong, M- Medium, L – Low

SEMESTER II/IV

COMPUTER APPLICATIONS IN OFFICE (21UCSA02)

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of MS word.
CO2	Understand MS word.
CO3	Demonstrate the functions of MS excel.
CO4	Study the basics of MS excel workbooks.
CO5	Analyze of data processing with MS power point.

**MAPPING WITH PROGRAMME
OUTCOMES**

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	M	M
CO2	S	M	L	M
CO3	S	S	L	M
CO4	M	S	L	M
CO5	S	M	M-	L

S- Strong, M- Medium, L – Low

SEMESTER II/IV

OFFICE AUTOMATION LAB (21UCSAP01)

COURSE OUTCOME:

On successful completion of the course, the students will

1. Understand the features in MS Word.
2. Select and apply worksheet and functions in MS EXCEL.
3. Combine multiple features in MS POWER POINT to prepare presentations.

ALLIED OPTION II

Subject Title	DATABASE SYSTEMS	Semester	I/III
Subject Code	21UCSA03	Specialization	NA
Type	Allied: Theory	L:T:P:C	86:6:0:4

COURSE OUTCOME

CO Number	CO Statement	Knowledge Level
CO1	Remember the basics of Database.	K1
CO2	Understand Database Systems Concept and Architecture.	K2
CO3	Demonstrate the functions of the Relational Data Model and SQL.	K3
CO4	Study the basics of Basics SQL.	K4
CO5	Analyze advanced SQL commands and statements.	K5

**MAPPING WITH PROGRAMME
OUTCOMES**

CO Number	PO1	PO2	PO3	PO 4
CO1	S	S	M	M
CO2	S	M	L	S
CO3	S	M	L	M
CO4	M	S	M	M
CO5	S	M	L	L

S- Strong , M- Medium , L – Low

**SEMESTER II/IV
E-COMMERCE TECHNIQUES(21UCA04)**

COURSE OUTCOME

CO Number	CO Statement
CO1	Remember the basics of Ecommerce and Indian Business
CO2	Understand WWW.
CO3	Demonstrate the E payment system.
CO4	Study the basics the Web Designing.
CO5	Analyze Email components.

**MAPPING WITH PROGRAMME
OUTCOMES**

CO Number	PO1	PO2	PO3	PO 4
CO1	S	M	L	L
CO2	S	M	L	L
CO3	S	M	L	L
CO4	M	S	M	M
CO5	S	M	M	L

S- Strong , M- Medium , L – Low

SEMESTER II/IV

ALLIED PRACTICAL-IIHTML PROGRAMMING(21UCSAP02)

COURSE OUTCOME:

On successful completion of the course, the students will

2. Understand the features in HTML.
3. Select and apply tags for create text, list and table.
4. Combine multiple features in forms, frames and texts.

10. DEPARTMENT OF BIO-CHEMISTRY

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)
➤ To study the structures and functions of Biomolecules.
➤ To understand the Bioanalytical Techniques (principles, instrumentation and applications).
➤ To learn the major Metabolic pathways, Bioenergetics and Enzyme Catalysis.
➤ To understand the Molecular Techniques and Gene Expression.
➤ To know the essentials of Human Physiology and Nutritional requirements.
➤ To update the molecular concepts of body defenses and its mechanisms.
➤ To learn the principles and applications of Clinical Biochemistry.
➤ To gain knowledge in Pharmaceutical and Industrial Biochemistry.
➤ To acquire skills by hands on experience in Laboratory Experiments.
➤ To develop the candidates for a career in Clinical Research laboratories and Health care industry.

PROGRAM SPECIFIC OUTCOMES (PSOs)
PSO-1 The student will be able to understand characterisation biomolecules in research.
PSO-2 Students will understand the concept of spectrophotometer, relevant terms of uv-visible spectroscopy and outline of uv spectroscopy device.
PSO-3 Students will learn basics of enzymology and will be familiar with important terms of enzymology.
PSO-4 Students will learn different types of fermentation process, strain improvement methods and isolation of industrial important microorganisms.
PSO-5 They will be able to describe the mechanisms of protein transport to various sub cellular sites and process of protein degradation.
PSO-6 Learn to work as a team as well as independently to retrieve information, carry out Research investigations and result interpretations.
PSO-7 Develop the ability to understand and practice the ethics surrounding scientific Research.
PSO-8 Realize the impact of science in society and plan to pursue their research.
PSO-9 After completion of the program the students are well poised to pursue careers in academic and industry in the areas of pharmaceutical and biotechnology.
PSO-10 Health care professionals for services in the fields of clinical biochemistry, laboratory management, hospital and community services.
PSO-11 The students will be able to demonstrate practical skills in handling biological specimens, analysis and their safe disposal.

PSO-12 Communicate the fundamental concepts of specific molecules, enzymes, cells, organ systems and metabolism of compounds.
PSO-13 Apply the knowledge and expertise in industries, diagnostic laboratories and various research fields.
PSO-14 Impart practical skills and scientific knowledge in domains of Molecular biology, enzymology, genetics, clinical biology and immunology.
PSO-15 Develop problem solving ability by utilizing the conceptual knowledge, analytical techniques, computational and statistical approaches.
PSO-16 Facilitate to pursue post graduation in related fields in life sciences and contribute their knowledge to the betterment of the society in various research and health care sectors.
PSO-17 To provide in-depth knowledge about core areas of biochemistry.
PSO-18 To make students competent in the field of biochemistry and allied areas by providing them hands on experience in basic tools and techniques.
PSO-19 To inculcate, facilitate, motivate and promote knowledge and technical skills in core areas of biochemistry including advanced tools and techniques like genomics, proteomics and transcriptomics to young aspirants.
PSO-20 To develop graduates with a strong professional ethics and moral duties that will positively affect their profession, community, society and Nation at large.

PROGRAMME OUTCOME (POs) AND KNOWLEDGE LEVEL

PO NO	PROGRAMME OUTCOME	KNOWLEDGE LEVEL
PO1	<i>Disciplinary knowledge:</i> Ability to understand fundamental concepts of Biochemistry; Ability to apply basic principles of chemistry to Biological Systems and Molecular Biology; Ability to relate various interrelated physiological and metabolic events; A general awareness of current developments at the forefront in Biochemistry and Allied subjects; Ability to critically evaluate a problem and resolve to challenge blindly accepted concepts; Zeal and ability to work safely and effectively in a laboratory; Good experimental and quantitative skills encompassing preparation of laboratory reagents, conducting	K3

	experiments, satisfactory analyses of data and interpretation of results; Awareness of resources, and their conservation; Ability to think laterally and in an integrating manner and develop interdisciplinary approach; Overall knowledge of the avenues for research and higher academic achievements in the field of Biochemistry and allied subjects.	
PO2	Communication Skills: Ability to speak and write clearly in English; Ability to listen to and follow scientific viewpoints and engage with them.	K2
PO3	Problem solving: ability to closely observe the situation, and apply lateral thinking and analytical skills.	K4

PO4	Analytical reasoning: Ability to evaluate the strengths and weaknesses in scholarly texts spotting flaws in their arguments; Ability to use critics and theorists to create a framework and to substantiate one's argument in one's reading of scientific texts.	K4
PO5	Team work /Time Management: Ability to participate constructively in class room discussions; Ability to contribute to group work; Ability to meet a deadline.	K6
PO6	Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective. Ability to formulate logical and convincing arguments.	K4
PO7	Self-directed learning: Ability to work independently in terms of	K6

	organizing laboratory, and critically analyzing research literature; Ability to postulate hypothesis, questions and search for answers.	
PO8	Digital literacy: Ability to use digital sources, and apply various platforms to convey and explain concepts of Biochemistry	K3
PO9	Moral and ethical awareness/reasoning: Ability to interrogate one's own ethical values and to be aware of ethical and environmental issues; Ability to read values inherited in society and criticism vis a vis, the environment, religion and spirituality as also structures of power	K3
PO10	Leadership readiness: Ability to lead group discussions, to formulate questions related to scientific and social issues.	K6

SEMESTER – I
CORE I - BASICS OF BIOCHEMISTRY
PAPER CODE - 21UBC01

PROGRAMME OBJECTIVE
➤ To understand the simple and molecular structure of the different types of biomolecules.
➤ To identify from a group of molecular formulae, diagrams or models those which correspond to the different types of biomolecules.
➤ To gain knowledge the physicochemical properties and biological importance of biomolecules.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Summarize structures, isomerism and functions of different types of carbohydrates.	K2
CO2	Understand the nature of amino acids and proteins with their structure and their roles.	K2
CO3	Demonstrate about the lipids and lipoproteins along with their role.	K2
CO4	Explain the structure and properties of Nucleic acids and Nucleoproteins.	K3
CO5	Describe about source and importance of Vitamins.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	M	M	S	M	L	S	M	S
CO2	S	L	M	M	S	M	L	S	M	S
CO3	S	L	M	M	S	M	L	S	M	S
CO4	S	L	S	S	S	S	L	S	M	S
CO5	S	L	L	L	S	L	S	S	M	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – II**CORE II - TOOLS OF BIOCHEMISTRY****PAPER CODE - 21UBC02****PROGRAMME OBJECTIVE**

- To understand the basis and general methodology of the molecular separation techniques specified in the course.
- To gain in depth expertise on the application of these techniques to the separation of mixtures with known compositions.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Illustrate the cell fractionation techniques and clarify about the microscope handling.	K2
CO2	Disclose the chromatographic techniques for the separation components	K3
CO3	Explain the principles of centrifugation techniques for the separation of components	K4
CO4	Understand basic principles behind electrophoretic and spectroscopic techniques	K4
CO5	Describe about the measurement and the applications of radioisotopes	K5

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	M	S	M	S	L	M	M	S
CO2	S	L	M	S	M	S	L	M	M	S
CO3	S	L	M	S	M	S	L	M	M	S
CO4	S	L	M	S	M	S	L	M	M	S
CO5	S	L	M	S	M	S	L	M	M	L

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – II

CORE PRACTICAL – I

PAPER CODE - 21UBCP01

PROGRAMME OBJECTIVE

- To provide the students with an opportunity to develop their qualitative and quantitative skills.
- To learn and understand the biochemical analysis and identification of unknown compounds.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Facilitate the learners to prepare solutions for biochemical experiments	K3
CO2	Make the students to prepare buffer solution and to know the preparation of pH solution	K3
COs	Prepare crude macromolecules like starch, casein etc	K3
CO3	Facilitate the learners to correctly identify the carbohydrates, aminoacids and lipids	K4
CO4	Quantify the biomolecules	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	S	M	M	M	M	S
CO2	S	L	S	S	S	M	M	M	M	S
CO3	S	L	S	S	M	M	M	M	M	S
CO4	S	L	S	S	M	S	M	M	M	S
CO5	S	L	S	S	M	S	M	M	M	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – III

CORE III – ENZYMES

PAPER CODE - 21UBC03

PROGRAMME OBJECTIVE

- To provide a deeper insight into the fundamentals of enzyme kinetics and their role in control of metabolism and industrial application of enzymes.
- To learn the current applications and future potential of enzymes

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the basic features and classification of enzymes	K2
CO2	Figure out the characteristics of active site and nature of enzyme catalysis	K2
CO3	Understand the enzyme kinetics, enzyme inhibition and enzyme regulation with relevant examples	K3
CO4	Demonstrate the coenzymes, allosteric enzymes and multienzyme complex	K3
CO5	Explain the various immobilization techniques and application of enzymes in different fields	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	M	M	M	S	M	S	S	S
CO2	S	L	S	S	S	S	M	S	S	S
CO3	S	L	S	S	S	S	S	S	S	S
CO4	S	L	M	S	M	S	S	S	S	S
CO5	S	L	S	S	S	S	S	S	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – III**SKILL BASED ELECTIVE COURSE I****SBEC-I - CELL BIOLOGY****PAPER CODE - 21UBCS01****PROGRAMME OBJECTIVES**

- To understand the structure and functions of prokaryotes and Eukaryotic cells.
- To understand the cellular components and energy utilization process in the cell.
- To understand the cellular molecules and applying the knowledge in cell biology.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the structure and function of different types of cell	K1
CO2	Succeed in understanding structural organization and role of different organelles	K1
CO3	Expound the chromosomal organization.	K2
CO4	Analyze cell cycle and types of cell division	K2
CO5	Describe the role of extracellular matrix and cell interactions	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	M	S	M	S	S	S	S	S
CO2	S	L	M	S	M	S	S	S	S	S
CO3	S	L	M	S	M	S	S	S	S	S
CO4	S	L	M	S	M	S	S	S	S	S
CO5	S	L	S	S	M	S	S	S	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – IV

CORE IV - INTERMEDIARY METABOLISM

PAPER CODE: 21UBC04

PROGRAMME OBJECTIVES

- To understand the principles of cellular energy metabolism.
- To learn and schematize the oxidative pathways of carbohydrates, Lipids, Proteins & Nucleic acids.
- To gain knowledge on mitochondrial Electron transport chain and Oxidative Phosphorylation.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the basic principles of metabolic pathways	K3

CO2	Comprehend carbohydrate metabolism and its regulation	K3
CO3	Give the big picture about the biological oxidation process	K3
CO4	Comprehend the concepts of lipid metabolism and amino acid metabolism and urea cycle	K3
CO5	Understand concepts of nucleotide metabolism nucleic acid metabolism	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	M	S	M	S	S	S
CO2	S	L	S	S	M	M	M	S	S	S
CO3	S	L	S	S	M	M	M	S	S	S
CO4	S	L	S	S	M	M	M	S	S	S
CO5	S	L	S	S	M	S	M	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – IV

SKILL BASED ELECTIVE COURSE - II

SBEC – II -PLANT BIOCHEMISTRY

PAPER CODE – 20UBCS02

PROGRAMME OBJETIVE

➤ To understand plant cell structure and specific biochemical functions to all compartments of the plant cell.

➤ To learn the mechanism of photosynthesis and biosynthetic pathways in plants.

➤ To gain knowledge about secondary metabolites and their role in medicine.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the plant cell physiology.	K2

CO2	Comprehend process of photosynthesis and photorespiration	K2
CO3	Demonstrate nitrogen fixation in plants	K2
CO4	Illustrate about the plant growth through seed germination and seed dormancy	K2
CO5	Explain hormones and secondary metabolites of plants	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	M	S	M	S	S	S
CO2	S	L	S	S	M	M	M	S	S	S
CO3	S	L	S	S	M	M	M	S	S	S
CO4	S	L	S	S	M	M	M	S	S	S
CO5	S	L	S	S	M	S	M	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER - IV

CORE PRACTICAL – II

PAPER CODE – 21UBCP02

PROGRAMME OBJECTIVE

- To practice calorimetric determinations, enzyme assays and molecular separation techniques.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Know about analytical techniques of separation of sugar, aminoacids lipids and plant pigments	K3
CO2	Analyse the biomolecules by colorimeter	K4
CO3	Analyse the enzyme assay	K5

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	L	S	S
CO2	S	M	S	S	M	S	S	L	S	S
CO3	S	M	S	S	M	S	S	L	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – V

CORE V - CLINICAL BIOCHEMISTRY

PAPER CODE – 21UBC05

PROGRAMME OBJECTIVE

- To understand the clinical biochemistry and its related biochemical disorders that can be applied to medical diagnosis, treatment and management.
- To demonstrate clinical disorders, in born defects in metabolism and correlate with deficiency of key metabolic enzymes.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand clinical aspects of biochemistry	K3
CO2	Describe about the blood components, blood coagulation system and Perform the hematology-based analysis.	K3

CO3	Acquire insight into disorders of carbohydrates and lipids metabolism	K3
CO4	Gain knowledge about various disorders of protein, nucleic acid and bilirubin metabolism	K3
CO5	Comprehend different organ function tests and clinical enzymology	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	M	M	S	S	M	S	S
CO2	S	L	S	M	M	S	S	M	S	S
CO3	S	M	S	M	M	S	S	M	S	S
CO4	S	M	S	M	M	S	S	M	S	S
CO5	S	M	S	M	M	S	S	M	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – V

CORE – VI MOLECULAR BIOLOGY

PAPER CODE: 21UBC06

PROGRAMME OBJECTIVE

- To describe the general principles of gene organization and expression in both Prokaryotes and eukaryotic organism.
- To explain various level of gene regulation and its functions.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the replication process	K2
CO2	Comprehend basic principles and mechanism of transcription	K2

CO3	Understand translation process and post translational modification of proteins	K2
CO4	Understand the protein targeting and processing and regulation of gene expression in prokaryotes	K2
CO5	Understand types and causes of mutation, and DNA repairing mechanisms	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	M	M	S	S	S
CO2	S	M	S	S	S	M	M	S	S	S
CO3	S	M	S	S	S	M	M	S	S	S
CO4	S	M	S	S	S	M	M	S	S	S
CO5	S	M	S	S	S	M	M	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – V

CORE VII - HUMAN PHYSIOLOGY

PAPER CODE: 21UBC07

PROGRAMME OBJECTIVE

- To build a in depth knowledge about basic physiological principles of various organs in the human body.
- To understand physiology of various systems and its functions.
- To get adequate knowledge on sensory organs.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Illustrate about digestive secretions and absorptive mechanisms	K2

CO2	Comprehend the process of gaseous exchange in tissues and lungs	K2
CO3	Obtain an insight about muscle physiology and cardiovascular system	K2
CO4	Understand urine formation and physiology of reproductive system	K2
CO5	Get an idea about neuron structure and sensory physiology	K2

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	M	S	S	M	S
CO2	S	M	S	S	M	M	S	S	M	S
CO3	S	M	S	S	M	M	S	S	M	S
CO4	S	M	S	S	M	M	S	S	M	S
CO5	S	L	S	S	M	M	S	S	M	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – V

ELECTIVE – I NUTRITIONAL BIOCHEMISTRY

PAPER CODE – 21UBCE01

PROGRAMME OBJECTIVE

- To describe the general principles and nutritional aspects of various foods and its dietary requirements
- To learn and explore the biochemical, physiological and clinical impact of inadequate intakes of specific nutrients.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Describe energy content of various foods and nutritional significance of different biomolecules	K2

CO2	Understand nutritional requirements and techniques to measure energy expenditure	K3
CO3	Explain the effect protein energy malnutrition	K3
CO4	Describe nutritional requirement, significance and deficiency disorders of dietary minerals	K3
CO5	Obtain an insight about Regulation and standardization of foods in food industry	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	M	S	S	S
CO2	S	M	S	S	S	S	M	S	S	S
CO3	S	M	M	S	S	S	S	S	S	S
CO4	S	M	M	S	S	S	S	S	S	S
CO5	S	M	M	S	S	S	S	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER V

SKILL BASED ELECTIVE COURSE - III

SBEC – II -GENETIC ENGINEERING

PAPER CODE – 21UBCS03

PROGRAMME OBJECTIVE

- To impart the practical knowledge on nucleic acid isolation, digestion and ligation.
- To familiarize the students with the basic concepts in genetic engineering and it also gives knowledge on transformation and recombinant selection.
- To acquaint the students to versatile tools and techniques employed in genetic engineering and recombinant DNA technology and its applications genetic engineering.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Get an idea about the role of DNA manipulative enzymes and restriction enzymes used in rDNA technology.	K2

CO2	Advance their knowledge about the vectors suitable for rDNA technology	K2
CO3	Understanding of various methods adapted for gene transfer and screening of recombinants	K3
CO4	Obtain knowledge about advance techniques in genetic engineering	K4
CO5	Understand applications of rDNA technology in various fields	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	S	S	S
CO2	S	M	S	S	S	S	S	S	S	S
CO3	S	L	S	S	S	S	S	S	S	S
CO4	S	L	S	S	S	S	M	S	S	S
CO5	S	L	S	S	S	S	M	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – VI

CORE – VIII – IMMUNOLOGY

PAPER CODE: 21UBC08

PROGRAMME OBJECTIVE

- To learn about the general concepts of immune system and immune organs
- To understand the properties of antigens and antibodies and the concept of antigen-antibody interactions
- To know about the mechanisms related to cell mediated immunity, complement system, hypersensitivity and transplantation immunology and immunological disorders

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand basics of immune system and about the cells and organs of immune system.	K2

CO2	Describe the Antigen and Antibody structure and properties and obtain the knowledge about the hybridoma technology	K2
CO3	Comprehend the antigen and antibody reactions and immunological techniques.	K3
CO4	Get a clear idea about the immunization and hypersensitivity reactions.	K3
CO5	Familiarize with complement system, autoimmunity and immunodeficiency disorders	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	M	S	S
CO2	S	M	S	S	S	S	S	M	S	S
CO3	S	M	S	S	S	S	M	M	S	S
CO4	S	M	S	S	S	S	M	M	S	S
CO5	S	M	S	S	S	S	M	M	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – VI

CORE – IX ENDOCRINOLOGY

PAPER CODE: 21UBC09

PROGRAMME OBJECTIVE

- To explain the role of endocrine system in maintaining homeostasis, integrating growth and development.
- To discuss molecular, biochemical, and physiological effects of hormones on cells.
- To explain the consequences of under and overproduction of hormones.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
-----------	------------------------	-----------------

CO1	Gain knowledge about the basic terminologies, classification and mechanism of action of hormones and to demonstrate various types of second messengers and their action.	K2
CO2	Understand hypothalamic and pituitary hormones.	K2
CO3	Learn various functions of thyroid, parathyroid and pancreatic hormones along with their mechanism of action.	K2
CO4	Demonstrate the biological functions and dysfunction of various GI tract hormones as well as adrenal gland hormones.	K2
CO5	Understand about the male and female reproductive hormones and also gain the knowledge about some local hormones.	K2

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	M	S	S	S	S	M	M
CO2	S	M	M	M	S	M	S	S	M	M
CO3	S	M	M	M	S	S	S	S	M	M
CO4	S	M	M	M	S	S	M	S	M	M
CO5	S	M	M	M	S	S	S	L	M	M
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – VI

CORE – X PHARMACEUTICAL BIOCHEMISTRY

PAPER CODE: 21UBC10

PROGRAMME OBJECTIVE

- To provide an in-depth knowledge about sources of drugs, pharmacokinetics and pharmacodynamics.
- To learn adequate scientific knowledge about pharmaceutical manufacturing process.
- To gain a better understanding of drug discovery, design and its development.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand drug dosage, routes of administration and about bioavailability of drugs	K2
CO2	Understand about basic principles involved in pharmacokinetics.	K3
CO3	Understand about the drug receptor interactions and gain knowledge on metabolism.	K3
CO4	Describe the general principles of adverse drug reactions and acute poisoning.	K3
CO5	Advance the knowledge on drug discovery process and ethical issues in drug discovery process and in preclinical toxicological studies.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	S	S	S	S	S	S
CO2	S	M	S	S	S	S	S	S	S	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	S	M	S	M	S	S	S	S	S	S
CO5	S	M	M	M	S	S	S	S	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – VI

ELECTIVE – II - INDUSTRIAL BIOCHEMISTRY

PAPER CODE: 20UBCE02

PROGRAMME OBJECTIVE

- To learn the wide use of fermentation technology and microbial production techniques.
- To update the latest scientific developments on microbes and its industrial application
- To gain adequate knowledge on use of microbes in the environment.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Learn about the culture techniques for isolation of microbes from various sources and preserve the isolates.	K3
CO2	Gain basic knowledge about basic principles of fermentation and types of fermenters.	K3
CO3	Describe the microbial production of bioactive compounds such as organic acids, bacterial and fungal polysaccharides, antibiotics and vitamins.	K3
CO4	Learn about Industrial production of alcohol, alcoholic beverages, production of Single Cell Protein, bioethanol and biogas production.	K3
CO5	Provide fundamental insights to exploit microbes for protecting environment.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	M	S	S	S	S	S
CO2	S	L	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	S	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – VI

SKILL BASED ELECTIVE COURSE

SBEC - IV - BIOINFORMATICS AND NANOTECHNOLOGY

PAPER CODE: 21UBCS04

PROGRAMME OBJECTIVE

- To acquire basic knowledge in Bioinformatics/Nanotechnology
- To provide scope for databank and sequence analysis
- To understand the novel concepts in Nanotechnology and Bioinformatics.

COURSE OUTCOME

COURSE	COURSE OUTCOME DETAILS	KNOWLEDGE
--------	------------------------	-----------

NO		LEVEL
CO1	Understand basic principles and applications of bioinformatics in lifescience and get trained in database searching.	K2
CO2	Acquire knowledge of biological databases for the sequence alignments and predicting the structures of biomolecules such as nucleic acids and proteins.	K2
CO3	Describe the different tools available for sequence alignment and and predicting the structures	K3
CO4	Describe the different tools available for sequence alignment and and predicting the structures.	K3
CO5	Describe history of nanotechnology, Properties of nanoparticles, types, synthesis of nanoparticles and the characterization of nanoparticles using Microscopy techniques such as SEM, TEM, AFM, STM.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	S	S	S	S	S	S
CO2	S	M	M	S	S	S	S	S	S	S
CO3	S	M	M	S	S	S	M	M	S	S
CO4	S	M	M	S	S	S	M	M	S	S
CO5	S	M	M	S	S	S	M	M	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – VI

CORE PRACTICAL – III

PAPER CODE: 21UBCP03

PROGRAMME OBJECTIVE

- To have hands on experience on laboratory diagnostic tests.
- To learn and understand the biochemical analysis and estimation of various biomarkers.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Estimate and identify the hematological parameters	K4
CO2	Experiment the assay of serum marker enzymes	K4
CO3	Analyse the blood parameters like urea, bilirubin cholesterol etc	K4
CO4	Experiment urine samples	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	L	S	S
CO2	S	M	S	S	S	S	M	L	S	S
CO3	S	M	S	S	S	S	M	L	S	S
CO4	S	M	S	S	S	S	S	L	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – VI

CORE PRACTICAL – IV

PAPER CODE: 21UBCP04

PROGRAMME OBJECTIVE

- To have hands on experience on tissue culture techniques and immunological assays.
- To learn and understand the identification and characterization of microbes.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Demonstration on PTC media preparation ,and callus induction	K4
CO2	Experiment the genetic engineering protocols	K4
CO3	Investigate on immunological experiments	K4
CO4	Experiment and interpret the microbiological experiments	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	L	S	S
CO2	S	M	S	S	S	S	M	L	S	S
CO3	S	M	S	S	S	S	M	L	S	S

CO4	S	M	S	S	S	S	S	L	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – I
ALLIED - I - BIOCHEMISTRY – I
PAPER CODE: 21UBCA01

PROGRAMME OBJECTIVE
➤ To understand the simple and molecular structure of the different types of biomolecules, enzymes and vitamins.
➤ To gain knowledge the physicochemical properties and biological importance of biomolecules.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Describe structures, properties and functions of carbohydrates.	K2
CO2	Understand the structures, properties and role of amino acids and proteins.	K2
CO3	Describe the nomenclature and identify the classes of enzymes and factors affecting their action with kinetics.	K2
CO4	Demonstrate about the structure and properties of lipids and Nucleic acids with their importance.	K2
CO5	Describe about source, importance and deficiency disorders of vitamins and minerals	K2

MAPPING WITH PROGRAMME OUTCOMES
--

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	M	S	M	M	M	S	S
CO2	S	L	S	M	S	M	M	M	S	S
CO3	S	L	S	M	S	M	M	M	S	S
CO4	S	L	S	M	S	M	M	M	S	S
CO5	S	L	S	M	S	M	M	M	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – II
ALLIED II - BIOCHEMISTRY – II
PAPERCODE: 21UBCA02

PROGRAMME OBJECTIVE

➤ To learn biochemical techniques, metabolism of biomolecules and energy production.

➤ To gain knowledge the physicochemical properties and biological importance of hormones.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Understand the basics of acid - base balance of human body and gain Develop competence in handling various chromatographic techniques.	K2
CO2	Describe carbohydrate metabolism and gain knowledge about Diabetes mellitus.	K2
CO3	Learn basic concepts of Bioenergetics, mechanisms of oxidative phosphorylation.	K2
CO4	Describe the concepts of lipid metabolism and amino acid metabolism.	K2
CO5	Gain knowledge about the basic terminologies, classification and mechanism of action of hormones and to demonstrate various types of second messengers.	K2

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	M	S	M	M	M	S	S
CO2	S	L	S	M	S	M	M	M	S	S
CO3	S	L	S	M	S	M	M	M	S	S
CO4	S	L	S	M	S	M	M	M	S	S
CO5	S	L	S	M	S	M	M	M	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – II

ALLIED PRACTICAL – I - BIOCHEMISTRY PRACTICAL

PAPER CODE: 21UBCAP01

PROGRAMME OBJECTIVE

➤ To have hands on experience on qualitative analysis of biomolecules.

➤ To learn and understand the separation techniques.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Analyse biomolecules for qualitative study	K4
CO2	Learn about biochemical preparation carbohydrates, proteins and lipids	K4
CO3	Quantify the biomolecules	K4
CO4	Experiment chromatography techniques	K4

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	S	S	S	L	S	S
CO2	S	L	S	S	S	S	M	L	S	S
CO3	S	L	S	S	S	S	M	L	S	S
CO4	S	L	S	S	S	S	S	L	S	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – III
NON-MAJOR ELECTIVE COURSE – I
PAPER I – FUNDAMENTALS OF HUMAN PHYSIOLOGY
PAPER CODE: 21UBCN01

PROGRAMME OBJECTIVE

- To educate non-bioscience students about human system
- To emphasize fundamentals of physiology of human anatomy
- To provide knowledge on neuronal network.

COURSE OUTCOME		
COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Describe about digestion and absorption process of biomolecules	K2
CO2	Grasp the respiratory system and mechanism of exchange of gaseous.	K2
CO3	Gain awareness on cardiovascular system, structure and functioning of heart.	K2

CO4	Understand the urine formation and excretion through kidney.	K2
CO5	Obtain an imminent knowledge about nervous system.	K2

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	M	S	S	M	S
CO2	S	M	S	S	M	M	S	S	M	S
CO3	S	M	S	S	M	M	S	S	M	S
CO4	S	M	S	S	M	M	S	S	M	S
CO5	S	M	S	S	M	M	S	S	M	S
S-STRONG, M-MEDIUM, L-LOW										

SEMESTER – III

NON-MAJOR ELECTIVE COURSE - I

PAPER – II - BIOCHEMISTRY IN NUTRITION

PAPER CODE: 21UBCN02

PROGRAMME OBJECTIVE

- To create awareness on various nutrient content in food/food regulation act / food safety
- The significance of nutrients in metabolic process
- To study the importance of nutrients during physiological changes and in sports

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
-----------	------------------------	-----------------

CO1	Describe the nutritional profile of various foods and the role of biomolecules, fiber and antioxidants.	K2
CO2	Describe the techniques to measure energy expenditure and BMR; RDA for various disorders.	K3
CO3	Understand the recommended dietary allowances for different age group people.	K3
CO4	Gain awareness on drug – nutrient interactions, food allergy and importance of nutraceuticals.	K3
CO5	Obtain an impending knowledge about nutritional therapy for various metabolic disorders.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	M	S	S	S
CO2	S	M	S	S	S	S	M	S	S	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	S	M	S	S	S	S	S	S	S	S
CO5	S	M	S	S	S	S	S	S	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – IV

NON-MAJOR ELECTIVE COURSE - II

PAPER I - BIOCHEMISTRY AND HEALTH

PAPER CODE: 21UBCN03

PROGRAMME OBJECTIVE

- To understand the different types of biomolecules.
- To learn the common disorders of nutritional deficiency.
- To gain knowledge on the biological importance of micro nutrients.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Summarize the sources, importance of carbohydrates and gain awareness about Diabetes mellitus.	K2

CO2	Understand the importance of proteins in living organism with their deficiency disorders.	K2
CO3	Describe the sources and importance of lipids along with the disorders of lipid metabolism.	K2
CO4	Explain the sources, RDA, importance and deficiency disorders of vitamins.	K2
CO5	Describe about sources and biological importance of minerals.	K2

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	M	S	S	M	S	S
CO2	S	M	S	M	M	S	S	M	S	S
CO3	S	M	S	M	M	S	S	M	S	S
CO4	S	M	S	M	M	S	S	M	S	S
CO5	S	M	S	M	M	S	S	M	S	S

S-STRONG, M-MEDIUM, L-LOW

SEMESTER – IV

NON-MAJOR ELECTIVE COURSE - II

PAPER II - BIOCHEMISTRY IN DIAGNOSIS

PAPER CODE: 21UBCN04

PROGRAMME OBJECTIVE

- To understand the different types of diagnostic tests in biochemistry.
- To learn the common techniques to collect, preserve and processing the biological samples.
- To gain knowledge on the enzyme assays.

COURSE OUTCOME

COURSE NO	COURSE OUTCOME DETAILS	KNOWLEDGE LEVEL
CO1	Summarize the use of standard precautions applied in clinical laboratory and during the collection, processing, preservation and transportation of biological specimens for analysis.	K3
CO2	Gain knowledge of the normal composition of blood and their analysis along with their significance in maintaining good health.	K3

CO3	Become skilled at performing clinical urine tests for diagnostic purposes and Identify abnormal constituents of urine.	K3
CO4	Describe physical, chemical and microscopic examination of stool and analysis of its constituents using standard procedures.	K3
CO5	Become aware with the variations in the levels of biochemical components of blood and their relationship with various diseases and also get acquainted with the role of enzymes in diagnosis of a variety of diseases.	K3

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	M	S	M	M	S	S
CO2	S	L	S	S	M	S	M	M	S	S
CO3	S	L	S	S	M	S	M	M	S	S
CO4	S	L	S	S	M	S	M	M	S	S
CO5	S	L	S	S	M	S	M	M	S	S

11. DEPARTMENT OF BIOTECHNOLOGY

PROGRAMME AND COURSE OUTCOME (PO & CO) FOR UNDERGRADUATION IN BIOTECHNOLOGY		
SEMESTER I		
Course Title	CORE I - CELL BIOLOGY- 21UBT01	Knowledge level
On Completion of the Course, the students will be able		
CO1	To explain the prokaryotic and eukaryotic cell.	K1
CO2	To discuss the cell membrane and function in detail.	K2
CO3	To assess the structural and functional organization of cell organelles.	K3
CO4	To gain knowledge for cell to cell signaling.	K4
CO5	To examine the cellular basis of differentiation.	K5

On Completion of the Course, the students will be able		
PO1	To explain structures of prokaryotic and eukaryotic cells especially macromolecules, membranes and organelles.	K1
PO2	To assess the cellular components underlying mitotic and meiotic cell division.	K2
PO3	To discuss cellular components that generate and utilize energy in cells	K3
PO4	To gain knowledge on communication of the cells with other cells.	K4
PO5	To gain knowledge on organelles and the cellular mechanisms.	K5

MAPPING WITH PO - CELL BIOLOGY- 21UBT01					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	M	M	S	M
CO3	S	M	M	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	M
S- Strong, M- Medium, L – Low					

SEMESTER II		
Course Title	CORE II – GENETICS – 21UBT02	Knowledge level
On Completion of the Course, the students will be able		
CO1	To obtain acquaintance on historical overview of microbial genetics and genetic materials.	K6
CO2	To demonstrate the regulation of gene expression and mutation.	K7
CO3	To understand genetic mechanism in microorganisms.	K8
CO4	To Grasp the basic genetic techniques and the role of genes in biological system.	K9

On Completion of the Course, the students will be able		
PO1	To understand historical overview of microbial genetics and genetic materials.	K6
PO2	To compile the concept of replication of genetic materials.	K7
PO3	To compare the genetic exchange mechanism in microorganisms.	K8
PO4	To gain knowledge on mutation in biological system.	K9

MAPPING WITH PO - GENETICS – 21UBT02				
CO - Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	M	M	M	S
CO3	S	M	M	S
CO4	S	S	M	M
S- Strong, M- Medium, L – Low				

SEMESTER III		
Course Title	CORE III – GENERAL MICROBIOLOGY – 21UBT03	Knowledge level
On Completion of the Course, the students will be able		

CO1	To appreciate the efforts of scientists for the development of microbiology and microscopes.	K10
CO2	To differentiate the different types of microbes.	K11
CO3	To check the media composition and grow the desired microbe.	K12
CO4	To apply the knowledge to enumerate the microorganisms from natural environment.	K13
CO5	To evaluate the success of understanding the viruses.	K14

On Completion of the Course, the students will be able

PO1	To recall the historical events which paved way for the development of vaccines.	K10
PO2	To knowledge on different types of microbes creates insight on its uses in the environment.	K11
PO3	To analyse growth of the desired microbe in media and estimate its virulence capacity in host.	K12
PO4	To understand the positive connection of microbes with environment and in human welfare	K13
PO5	To evaluate mechanism, structure and pathogenicity of viruses.	K14

MAPPING WITH PO – GENERAL MICROBIOLOGY – 21UBT03

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	M	M	S	M
CO3	S	M	M	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	S

S- Strong, M- Medium, L – Low

SEMESTER IV

Course Title	CORE IV – MOLECULAR BIOLOGY – 21UBT04	Knowledge level
---------------------	--	------------------------

On Completion of the Course, the students will be able

CO1	To compare structural levels of nucleic acids – DNA, RNA and genome organization in prokaryotes and eukaryotes.	K15
CO2	To assess the concept of gene and gene architecture.	K16
CO3	To over view of the central dogma of life, DNA replication and role of different enzymes involved in such mechanisms.	K17
CO4	To learn events of translation leading to protein synthesis and post translational modification.	K18
CO5	To evaluate regulation of gene expression in prokaryotes and operon concept in eukaryotes.	K19

On Completion of the Course, the students will be able		
PO1	To recall the molecular events evolved over the time by process of mutation, selection and genetic change.	K15
PO2	To gain knowledge on growth, development and behaviour of organisms.	K16
PO3	To construct and utilize vector-based systems and describe complex biological system.	K17
PO4	To analyse biological phenomena of central dogma of the cell.	K18
PO5	To evaluate biological concepts and understanding of diverse biological system- operon concept	K19

MAPPING WITH PO - MOLECULAR BIOLOGY – 21UBT04					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	M	S	S	M
CO3	S	M	S	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	S
S- Strong, M- Medium, L – Low					

SEMESTER V		
Course Title	CORE V – PLANT BIOTECHNOLOGY – 21UBT05	Knowledge level
On Completion of the Course, the students will be able		
CO1	To design scientific and technical skills on plants study.	K20
CO2	To acquire knowledge on limitations and challenges in plant cell tissue culture.	K21
CO3	To know the applications of plant biotechnology.	K22
CO4	To learn the preservative methods of cells which is useful in agriculture	K23
CO5	To evaluate and discuss public and ethical concerns over the use of plant biotechnology.	K24

On Completion of the Course, the students will be able		
PO1	To understand various invitro culture techniques of plants.	K20
PO2	To learn gene transferring mechanisms in plants.	K21
PO3	To knowledge on plant tissue culture and its requirements.	K22
PO4	To learn genetic engineering and gene modification in agriculture.	K23
PO5	To highlight the applications of plant biotechnology in form of secondary metabolites production and purification in the modern era.	K24

MAPPING WITH PO - PLANT BIOTECHLOGY – 21UBT05					
CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	S	S	S	M
CO3	S	S	S	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	S
S- Strong, M- Medium, L – Low					

Course Title	CORE VI – IMMUNOLOGY AND IMMUNOTECHNOLOGY – 21UBT06	Knowledge level
On Completion of the Course, the students will be able		
CO1	To design a model of Immunoglobulin/antibodies.	K25
CO2	To describe cell M types and organs present in the immune response.	K26
CO3	To illustrate various mechanisms that regulate immune responses and maintain tolerance.	K27
CO4	To exemplify the adverse effect of immune system including hypersensitivity and autoimmunity.	K28
CO5	To apply basic techniques for identifying antigen antibody interactions. To explain the stages of transplantation responses.	K29

On Completion of the Course, the students will be able		
PO1	To present basic defence mechanism of animals.	K25
PO2	To gain knowledge on immunity, antigen, antibody and cells of	K26

	immune system.	
PO3	To understand cells of immune system and their regulation function.	K27
PO4	To analyse biological phenomena of human body and its diverse effect of immunity.	K28
PO5	To evaluate Immunotechnology in transplantation process.	K29

MAPPING WITH PO - IMMUNOLOGY AND IMMUNOTECHNOLOGY – 21UBT06

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	S	S	S	M
CO3	S	S	S	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	S

S- Strong, M- Medium, L – Low

Course Title	CORE VII – GENETIC ENGINEERING – 21UBT07	Knowledge level
On Completion of the Course, the students will be able		
CO1	To acquaint molecular cloning strategies and techniques used to probe DNA for specific genes of interest.	K30
CO2	To apprehend with tools and techniques in rDNA technology and types of vectors.	K31
CO3	To relate the role of restriction and modifying enzymes in recombinant DNA technology.	K32
CO4	To explore the techniques involved in construction of genomic DNA library and cDNA library.	K33
CO5	To design the protocols for analyzing gene transfer methods and to explore knowledge on hybridization-based markers.	K34

On Completion of the Course, the students will be able

PO1	To gain knowledge on gene manipulation and gene transfer technologies.	K30
------------	--	------------

PO2	To enhance and understand concept of vectors and vector-based systems.	K31
PO3	To understand the role of expression system and method of selection.	K32
PO4	To explore hybridization techniques.	K33
PO5	To understand gene transfer concept and its implementation	K34

MAPPING WITH PO - GENETIC ENGINEERING – 21UBT07

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	S	S	S	M
CO3	S	S	S	S	M
CO4	S	S	M	S	M
CO5	S	M	S	S	M

S- Strong, M- Medium, L – Low

SEMESTER VI

Course Title	CORE VIII – ANIMAL BIOTECHNOLOGY – 21UBT08	Knowledge level
On Completion of the Course, the students will be able		
CO1	To explain basic pattern of animal cell culture and controlling characters.	K35
CO2	To develop and acquire knowledge on animal cell culture and their applications.	K36
CO3	To assess the gene transfer technology, transgenic animal and stem cell technology.	K37
CO4	To emphasize techniques on fertilization in animals and its development.	K38
CO5	To evaluate and highlight the applications of animal biotechnology in various fields.	K39

On Completion of the Course, the students will be able

PO1	To understand animal gene expression system.	K35
------------	--	------------

PO2	To understand genetic characteristics in animal cell culture.	K36
PO3	To acquire knowledge on transgene technology.	K37
PO4	To emphasize fertilization and development in animal cell biology.	K38
PO5	To evaluate gene transfer, stem cell and transgenics in animal biotechnology.	K39

MAPPING WITH PO - ANIMAL BIOTECHNOLOGY – 21UBT08

CO - Number	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	M	S	S	S	M
CO3	S	S	S	S	M
CO4	S	S	M	S	S
CO5	S	M	S	S	S

S- Strong, M- Medium, L – Low

Course Title	CORE IX – PROTEOMICS AND GENOMICS – 21UBT09	Knowledge level
On Completion of the Course, the students will be able		
CO1	To provide better knowledge of molecular profiling of genes and proteins for its analysis.	K40
CO2	To develop the molecular skills on DNA sequencing.	K41
CO3	To demonstrate and gain knowledge about the handling of different instruments such as MS, MALDI-TOF.	K42
CO4	To gain knowledge on quantification of proteins and DNA.	K43

On Completion of the Course, the students will be able

PO1	To understand molecular profiling using different analysis	K40
PO2	To understand the current updated sequencing methods	K41
PO3	To demonstrate different instrumentation methods	K42
PO4	To obtain knowledge on instruments used for quantification analysis	K43

MAPPING WITH PO - PROTEOMICS AND GENOMICS – 21UBT09

CO - Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	M	M	S	S
CO3	S	M	S	S
CO4	S	S	M	S
S- Strong, M- Medium, L – Low				

Course Title	CORE X – BIOPROCESS AND ENZYME TECHNOLOGY – 21UBT10	Knowledge level
On Completion of the Course, the students will be able		
CO1	To provide better knowledge on scope and economics of microbial biotechnology	K44
CO2	To evaluate the need of microbial products for the mankind.	K45
CO3	To demonstrate and examine the learned techniques in production of industrially important products.	K46
CO4	To gain knowledge in the new beneficial metabolites.	K47

On Completion of the Course, the students will be able		
PO1	To understand applications of microbes	K44
PO2	To evaluate microbial products and its economic value in market	K45
PO3	To evaluate the other products such as enzymes, secondary metabolites produced by the microbes which are useful in the industries.	K46
PO4	To gain knowledge on fermentation, metabolites, vitamins produced by microbes.	K47

MAPPING WITH PO - BIOPROCESS AND ENZYME TECHNOLOGY – 21UBT10				
CO - Number	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	M	M	S	S
CO3	S	M	S	S
CO4	S	S	M	S
S- Strong, M- Medium, L – Low				

12. DEPARTMENT OF MICROBIOLOGY

Programme Outcome	
PO 1	Understanding of the fundamentals of Microbiology as applicable to wide ranging frameworks.
PO 2	Knowledge of the Microbiology curriculum and other allied subjects together would certainly guarantee promising career opportunities in academic, research and industrial sectors.
PO 3	The knowledge of microbes, understanding of microbial nature and benefits of their byproducts' for human society would ensure lifelong merit.

Program Specific Outcome (PSO) - Microbiology	
On Completion of the Programme, the students will be able	
PSO1	The microbiological equipment especially Microscope, Incubator, Laminar Air Flow chamber, Centrifuge etc.,
PSO2	The microorganism especially Bacteria, Fungi, Algae, Protozoa, Virus.
PSO3	The various fields in microbiology particularly Agricultural, Medical, Environmental, Industrial areas.

Course Outcome	
Semester - I	
Course Title	CORE - I - BASICS OF MICROBIOLOGY
Code	21UMB01
On Completion of the Course, the students will be able	
Co-1	Students will get overall understanding about the fundamentals of microbiology.
Co-2	To understand the concepts of microscopy.
Co-3	Gain knowledge about the microbial evolution and diversity.
Co-4	Acquire information on anatomy of prokaryotes.

Semester - II	
Course Title	CORE - II - MICROBIAL PHYSIOLOGY
Code	21UMB02
On Completion of the Course, the students will be able	
Co-1	The students will get an overall understanding of basic cell structure and classification of microorganisms based on its nutritional requirements.
Co-2	Gain knowledge on the growth pattern of microorganisms and the influence of nutrients to obtain active growth phase.
Co-3	Information on energy deriving mechanism from different energy sources.
Co-4	Acquire information on synthesis of organic molecules via photosynthetic process

Semester - III

Course Title	CORE - III - MICROBIAL GENETICS AND MOLECULAR BIOLOGY
Code	21UMB03
On Completion of the Course, the students will be able	
Co-1	Understand the knowledge about the genetic material and DNA replication.
Co-2	Created an understanding about mutation and its types.
Co-3	Procured the knowledge about Transcription and Translation.
Co-4	Learned about gene transfer mechanisms in bacteria.

Semester - IV

Course Title	CORE - IV - IMMUNOLOGY AND IMMUNOTECHNOLOGY
Code	21UMB04
On Completion of the Course, the students will be able	
Co-1	The students will get overall understanding of history and evolution of immunology and immune response developed by human system
Co-2	To understand the concepts of antigen, antibody interactions and influence on human immune system via hypersensitivity reactions, autoimmune diseases etc.
Co-3	Detailed understanding of Immunoheamatology, Transplanatation Immunology and Vaccines which will make the minds aware of infection, prevention and control.
Co-4	Help the students to learn techniques involved in immunological concepts and its role in diagnostic immunology

Semester - V

Course Title	CORE - V - MEDICAL BACTERIOLOGY
Code	21UMB05
On Completion of the Course, the students will be able	
Co-1	Understood the basic and general concepts of infections and the various parameters of causing infections. Assessment of their severity including the broad categorization of the methods of diagnosis.
Co-2	Developed a thorough understanding of common Gram positive bacterial diseases of human being.
Co-3	Conceptualized the role of the some bacteria as well as the mechanisms underlying the pathogenicity of them.
Co-4	Developed a thorough understanding of some special pathogenic bacteria affecting the human organ systems

Course Title	CORE – VI - FOOD MICROBIOLOGY
Code	21UMB06
On Completion of the Course, the students will be able	
Co-1	Know the positive and negative role of microbes in food.
Co-2	Gain knowledge about fermented food products.
Co-3	Understand the significance of food borne diseases.
Co-4	Realize the importance of food sanitation and quality assurance.

Course Title	CORE - VII - MEDICAL VIROLOGY
Code	21UMB07
On Completion of the Course, the students will be able	
Co-1	Understood and Recognize characters of different types of viruses causing infections, assessment of their severity, methods of diagnosis and their prophylaxis.
Co-2	Recognize how the two different classes, DNA and RNA viruses causing viral diseases in human beings.
Co-3	Conceptualized the role of viruses as well as the mechanisms underlying the pathogenicity of them, their detection and prophylaxis.
Co-4	Developed a thorough understanding of some special pathogenic viruses causing recent epidemics and threatening the whole world.

Course Title	CORE - VII - MEDICAL VIROLOGY
Code	21UMB07
On Completion of the Course, the students will be able	
Co-1	Understood and Recognize characters of different types of viruses causing infections, assessment of their severity, methods of diagnosis and their prophylaxis.
Co-2	Recognize how the two different classes, DNA and RNA viruses causing viral diseases in human beings.
Co-3	Conceptualized the role of viruses as well as the mechanisms underlying the pathogenicity of them, their detection and prophylaxis.
Co-4	Developed a thorough understanding of some special pathogenic viruses causing recent epidemics and threatening the whole world.

Semester - VI

Course Title	CORE – VIII -SOIL AND AGRICULTURAL MICROBIOLOGY
Code	21UMB08
On Completion of the Course, the students will be able	
Co-1	Able to understand the distribution of microbes in soil
Co-2	Capable to get information about biogeochemical cycle
Co-3	Able to get the knowledge about microbial interaction
Co-4	Capable to get idea about plant disease

Course Title	CORE - IX - ENVIRONMENTAL MICROBIOLOGY
Code	21UMB09
On Completion of the Course, the students will be able	
Co-1	Able to understand about the microbial diversity in environmental
Co-2	Capable to get information about the ecosystem
Co-3	Able to get overall understand the pollution
Co-4	Capable to understand basic knowledge about bioremediation

Course Title	CORE – X - INDUSTRIAL MICROBIOLOGY
Code	21UMB10
On Completion of the Course, the students will be able	
Co-1	Able to select and design a fermentation process for a specific product
Co-2	Capable of identifying industrially important microbes and its potential applications
Co-3	Able to device means to improve the production rate of existing fermentation processes
Co-4	Capable of designing processes for higher production yield at economically cheaper rate

Semester - III

Course Title	SBEC - I - APPLIED BIOTECHNIQUES
Code	21UMBS01
On Completion of the Course, the students will be able	
Co-1	To acquire the basic science behind the research techniques.
Co-2	Students will become familiar with biotechniques like chromatography, electrophoresis and spectrophotometry for quantitative and qualitative analysis
Co-3	Students will be inculcated with precise and accurate interpretation skills in the research sector.
Co-4	To imbibe the knowledge on modernised analytical methods to step in hi-tech industries.

Semester - IV

Course Title	SBEC - II – MUSHROOM - CULTIVATION TECHNIQUES
Code	21UMBS02
On Completion of the Course, the students will be able	
Co-1	Able to get basic idea about mushroom cultivation.
Co-2	Learned techniques about spawn multiplication.
Co-3	Learned about the diseases of edible mushrooms.
Co-4	Made the students ideally skilled for self-employment

Semester - V

Course Title	SBEC - III – MICROBIAL BIOTECHNOLOGY
Code	21UMBS03
On Completion of the Course, the students will be able	
Co-1	Understand the knowledge about The Basic Principles of Gene Cloning.
Co-2	Acquire knowledge about Molecular Cloning Tools
Co-3	Created an understanding about Cloning Vectors Gene transfer Techniques
Co-4	Procure the knowledge about Methods in Molecular Cloning

Semester - VI

Course Title	SBEC IV - ENTREPRENEURIAL MICROBIOLOGY
Code	21UMBS04
On Completion of the Course, the students will be able	
Co-1	To make Knowledge about the role of microbes in Industries
Co-2	Gained knowledge about fermented products.
Co-3	To understand the significance of patenting
Co-4	Able to make the students ideally skilled for self-employment

Semester - V

Course Title	ELECTIVE - MEDICAL PARASITOLOGY
Code	21UMBE01
On Completion of the Course, the students will be able	
Co-1	Understanding of taxonomy of parasite and host – parasite interaction.
Co-2	In depth knowledge on clinical diagnosis, pathogenicity and life cycle of protozoans
Co-3	Assimilate various lab technologies for diagnosis of medically important protozoans and their treatment.
Co-4	Articulate the major means of transmission of parasites by insect vectors and their control measures.

Semester - VI

Course Title	ELECTIVE - II - MEDICAL MYCOLOGY
Code	21UMBE02
On Completion of the Course, the students will be able	
Co-1	Basic understanding of fungi, their morphology and culture methods of fungi.
Co-2	Obtain knowledge on pathogenicity and laboratory diagnosis of medically important fungi.
Co-3	Grasp knowledge on mycotoxins and their importance.
Co-4	Gain knowledge on antifungal agents and their testing methods

Semester - III & IV

Course Title	NMEC - I – BIOFERTILIZER TECHNOLOGY
Code	21UMBN01
On Completion of the Course, the students will be able	
Co-1	Able to get basic idea about biofertilizer production
Co-2	For to learn application techniques about biofertilizer
Co-3	Capable to make mass multiplication
Co-4	Able to make the students ideally skilled for self-employment

Course Title	NMEC – II – MUSHROOM TECHNOLOGY
Code	21UMBN02
On Completion of the Course, the students will be able	
Co-1	Able to get basic idea about mushroom cultivation
Co-2	For to learn techniques about spawn multiplication
Co-3	Capable to identify the diseases of edible mushrooms
Co-4	Able to make the students ideally skilled for self employment

Course Title	NMEC - III- CLINICAL LABORATORY TECHNOLOGY
Code	21UMBN03
On Completion of the Course, the students will be able	
Co-1	Learn the handling of instruments and various measurements used in the laboratory.
Co-2	Gained knowledge about laboratory techniques its significance in diagnostic evaluation.
Co-3	Identify and differentiate the different types of bacteria and fungi in clinical samples.
Co-4	Learn the differential diagnosis by the help of different serological techniques.

Course Title	NMEC - IV - QUALITY CONTROL IN INDUSTRIES
Code	21UMBN04
On Completion of the Course, the students will be able	
Co-1	To acquire the knowledge quality control in pharmaceutical industry
Co-2	To learn the quality control audits in industries.
Co-3	To understand the basics of food safety and food quality.
Co-4	Skilled on manufacturing operation in industries

13. DEPARTMENT OF HMCS

Programme Outcomes

PO. No	Students at the time of graduation will be able to
PO1:	Effective Communication - well versed in communicating both in English (as medium of instruction) and Tamil (mother's tongue), distinguish between professional and non-professional dialogues. Develop LSRW (Listening, Speaking, Reading, and Writing) skills with advanced technologies.
PO2:	Environment Concern - Follow RRRR (Reduce, Reuse, Recycle, and Refuse) and develop affinity towards environment and practice save Nature and Water.
PO3:	Ethical and Healthy Practice - Adhere to values in day to day life, practice yoga and other physical exercises, hence, develop self - respect and self- esteem, have strong integrity.
PO4:	Social Consciousness - Understand the rural situations through ERP (Empowering Rural People), and develop social consciousness, solve the issues through interaction, become mediator/ moderator between government and people, and become true citizen of our Nation.
PO5:	Subject Specialist - Acquaint their own subject and integrate with other disciplines (CBCS) with advanced technologies and become a Regional, National and Global competitor
PO6:	Role Model - Develop organizational, intellectual and personal skills through active Sports and Games and become role model of their society

Programme Specific Outcomes (PSOs)

PSO1:	Gain Knowledge to differentiate the food materials and processing of product
PSO2:	Evaluate knowledge of all the menu items and alcoholic and non-alcoholic beverages which are on offer in the outlet.
PSO3:	Describe the role of the housekeeping department in hotel operations,
PSO4:	Understand the characteristics and methods of cooking of Indian and International cuisines.
PSO5:	Apply food service etiquettes and skills while serving a guest.
PSO6:	Apply the task, functions, duties and activities in the operation of the hotels, restaurants, travel, government and non-government agencies in accordance with the competency standards.
PSO7:	Construct leadership and team spirit shaping into industry ready candidates
PSO8:	Understand the role, checking in, departure, communication, knowledge and function of the Hotel.
PSO9:	Performs work activities effectively and efficiently to the standards expected in the operation required in the tourism hospitality sectors.
PSO10:	Effects of common food preparation methods and food storage conditions on survival and growth of microbial contaminants.

Semester – 1 Core – 1

Food Production & Patisserie

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Identify various cooking techniques.	4
CO - 2	Maintain positive relations with others cooperate through Team work and group participation.	1
CO - 3	Identify and properly operate equipment & common culinary hand tools.	5
CO - 4	Know the main food commodities	1
CO - 5	Know where the main food commodities can be obtained	4
CO - 6	Know how the main food commodities should be stored	4

Semester – 1 Core – II Accommodation Operations – 1

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Attributes of housekeeping department	3
CO - 2	Brand names of cleaning equipments and agents	3
CO - 3	Terminology used in cleaning	6

Semester – 1 Allied - 1 Front Office Operation - I

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Ability to identify types of hotels, rooms, room rates and guests	8

CO - 2	Definitive Knowledge about accommodation management, effective Handling of guest complaints.	7
CO - 3	Knowledge about hierarchy of front office department, their Responsibilities.	9
CO - 4	Ability to perform duties and handle equipment effectively in front office	6

Semester – II Core - III Food & Beverage Service – I

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Ability to recognize various types of restaurant and their features	2
CO - 2	Demonstrate your knowledge of the range of services offered by your establishment.	2
CO - 3	Endeavour to minimize conflict between customer and your establishment needs.	5
CO - 4	Follow the establishment procedures and routines for dealing with complaints.	6

Semester – II Practical - III Food Production & Patisserie - I

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Basic principles of common food preservation methods.	10
CO - 2	Underlying the properties of various food components.	4
CO - 3	Vitamins and Minerals suggestion for various groups	1
CO - 4	Special nutritional requirements	10

Semester – III Core - IV Bakery & Confectionery

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	The student will experience different baking procedures.	4
CO - 2	The student will discuss the various organizations of the hospitality industry.	10
CO - 3	Student will differentiate various baking and pastry service operations.	4
CO - 4	The student will integrate human management skills into the classes.	7

Semester –III

Core - V

Food Production & Patisserie

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Organization duties and responsibilities of ladder staff and different larder products.	4
CO - 2	The heritage of regional Indian cuisine availability of raw material and different community cuisine.	7
CO - 3	Religious importance of Indian sweets.	4
CO - 4	Preparation of models of Tamilnadu cuisine.	4

Semester – III

Core - VI

Accommodation Operations – II

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	knowledge about the operation and management of the uniform	3
CO - 2	Knowledge about the role of executive housekeeper for proper administration	7
CO - 3	understanding about man power planning and evaluation of job performance	9
CO - 4	the principles & procedures to be observed to maintain	3

**III Practical - V
Bakery & Confectionery**

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	The student will experience different baking procedures.	4
CO - 2	The student will discuss the various organizations of the hospitality industry.	10
CO - 3	Student will differentiate various baking and pastry service operations.	4
CO - 4	The student will integrate human management skills into the classes.	7

**Semester – IV Core - VII Food
& Beverage Service – II**

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Demonstrate practical ability in the service of a range of beverages	2
CO - 2	Observe the establishment conventions in the service of beverages	5
CO - 3	Learning Types of Sprits.	7
CO - 4	Identifying Storage & Services of Beer.	2

IV Allied - IV Front Office Operations - II

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Understand the role and function of the Front of Office	8

CO - 2	Understand the importance of communication and knowledge of guests background	6
CO - 3	Know the procedures for checking in guests	9
CO - 4	Know about the challenges in yield management.	6

Semester – V Core - IX

Food Production & Patisserie – III

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Prepare sauces, soups and stocks.	4
CO - 2	Study and prepare dishes from various ethnic cuisines of the world	1
CO - 3	Various other cuisines as dictated by student interest.	1
CO - 4	Examine careers in the Culinary and Hospitality fields.	4

Semester – V

Core - X

Food & Beverage Service III

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Contribute to the team working requirements of the establishment.	7
CO - 2	Classify the types of food and beverage operations.	5
CO - 3	Know the difference of food and beverage operations management.	2
CO - 4	Knows the techniques of advertising and personal selling.	5

Semester – VI

Core - XIII

Food & Beverage Management

CO No	Upon completion of this course, Students will be able to	PSOs Addressed
CO - 1	Demonstrate a logical and efficient method of working	2
CO - 2	Adopt appropriate liaison with other staff working within the food and beverage areas	7
CO - 3	Operate within in legal requirements governing the sale of alcoholic beverages	6
CO - 4	Deal with customer requirements and special requests as they arise	5