



## **DEPARTMENT OF CHEMISTRY**

### **MSc. CHEMISTRY PROGRAMME OUTCOME**

At the completion of the programme.

1. The student will be able to work in pure, interdisciplinary and multidisciplinary areas of chemical sciences.
2. Understand global level research opportunities to pursue Ph.D programme.
3. Develop a sound knowledge of fundamentals and a familiarity with current progress in the most active and important areas of chemistry.

### **MSc CHEMISTRY PROGRAMME SPECIFIC OUTCOME**

1. Gains complete knowledge about all fundamental aspects of all the elements of chemistry.
2. Understands the background of organic reaction mechanisms, complex chemical structures, and instrumental method of chemical analysis, molecular rearrangements and separation techniques.
3. Appreciates the importance of various elements present in the periodic table, coordination chemistry and structure of molecules, properties of compounds, structural determination of complexes using theories and instruments.
4. Gathers attention about the physical aspects of atomic structure, dual behavior, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, significance of electrochemistry, molecular segregation using their symmetry.
5. Learns about the potential uses of analytical and industrial chemistry, medicinal chemistry and green chemistry.
6. Carry out experiments in the area of organic analysis, estimation, separation, derivative process, inorganic semi micro analysis, preparation, conductometric and potentiometric analysis.



## **COURSE OUTCOME**

### **QUANTUM MECHANICS AND COMPUTATIONAL CHEMISTRY-CH1C01**

- Learns the fundamentals of quantum mechanics and computational chemistry
- Gains good idea about quantum mechanical postulates and its applications.
- Training on computational chemistry

### **ELEMENTARY INORGANIC CHEMISTRY-CH1C02**

- Understands the concepts of acids and bases.
- Visualizes the energy behind the nuclear reaction. .
- Enlightens the knowledge about main group elements, transition elements and inner transition compounds.
- Learns basics of nanochemistry.

### **STRUCTURE AND REACTIVITY OF ORGANIC COMPOUNDS-CH1C03.**

- Appreciates the fundamentals of aromaticity in organic chemistry.
- Acquires the 3-D aspects of organic molecules.
- Analyses the cruciality of the stereochemical process Perceives the concept of conformational analysis.

### **THERMODYNAMICS, KINETICS AND CATALYSIS -CH1C04**

- Learns the classical status of thermodynamics
- Appreciates the fundamentals of molecular thermodynamics
- Understands chemical kinetics
- Estimates the basis of chemical surfaces

### **GROUP THEORY AND CHEMICAL BONDING -CH2C05**

- Learns the concept of group theory and molecular symmetry.
- Learns to predict the translational and rotational motions of molecules using point group and character table
- Applies the wave mechanics for for determining atom structure .
- Visualizesthe macro molecular structure



### **COORDINATION CHEMISTRY -CH2C06**

- Learns the structure and properties of coordination compounds
- Analyses the reaction pathways of complex formation
- Appreciates the vibrant role of catalysts in chemical reaction

### **REACTION MECHANISM IN ORGANIC CHEMISTRY-CH2C07**

- Visualizes the aromatic electrophilic substitution
- Learns the fundamentals of mechanism reaction mechanisms
- Understands the mechanism of nucleophilic substitution and elimination reaction.

### **ELECTROCHEMISTRY, SOLID STATE CHEMISTRY AND STATISTICAL THERMODYNAMICS-CH2C08**

- Understands the various theories of electrolytic conductance
- Recognizes the dynamics of electrode reaction
- Learns the importance of chemical reaction against time
- Learns the basis of solid state chemistry.
- Gains knowledge about statistical thermodynamics

### **MOLECULAR SPECTROSCOPY-CH3C09**

- Analyses the chemical structure using UV, IR and mass spectra.
- Determines the chemical environment H and ac NMR spectra

### **ORGANOMETALLIC AND BIOINORGANIC CHEMISTRY-CH3C10**

- Validates the role of bioinorganic chemistry in every day action
- Gains knowledge about organometallic compounds and metal clusters.

### **REAGENTS AND TRANSFORMATIONS IN ORGANIC CHEMISTRY – CH3C11**

- Understands basis of redox reaction
- Gains the potential of organic reactants
- Appreciates the various steps involved in the molecular rearrangements
- Gains the potential about complex vitamin and nucleic acid structure
- Learns the fundamentals of supramolecular chemistry.



### **SYNTHETIC ORGANIC CHEMISTRY-CH3E01**

- Gains the potential of organic reactants
- Understands the basis of redox reaction
- Appreciates the various steps involved in the molecular rearrangements

### **INSTRUMENTAL METHODS OF ANALYSIS -CH4C12**

- Analysis the variations of practical errors
- Gains the potential about different precipitation processes
- Determines the procedure for electro analytical techniques
- Determines the procedure for thermo analytical techniques
- Validates the strength of spectro analytical technique

### **NATURAL PRODUCTS AND POLYMERS-CH4E06**

- Learns the chemical background of individual polymers
- Determines the various uses of polymers process
- Understands the classification of polymers
- Analyses the different types of polymerization process
- Visualizes the methods of polymer degradation

### **ORGANOMETALLIC CHEMISTRY – CH4E08**

- Learns about the organometallic compounds
- Application of spectroscopy to organometallic compounds
- Analyses the applications of organometallic compounds in organic synthesis
- Gains knowledge about organometallic polymers.

### **INORGANIC PRACTICAL-1&II**

- Determines as the procedure for semi micro analysis of Inorganic salt mixture
- Understanding the procedure for semi micro qualitative analysis
- Appreciates the procedure for inorganic analysis.
- Estimates the accurate analytical procedure of analysis.
- Learns the steps involved in the complex formation process.



## ORGANIC PRACTICAL-1&11

- Learns principle of organic estimation.
- Gains the procedure for organic separation and derivation
- Understands the method of organic preparation
- Develops the various routes for recrystallization
- Identifies the way for identification of components

## PHYSICAL CHEMISTRY PRACTICAL- 1811

- Gains the procedure for conductometric determination.
- Learns holistic method of surface adsorption.
- Experiments the kinetics of chemical reaction.
- Appreciates the importance of potentiometric methods.
- Understands the sensitivity of pH metric titration



  
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## **DEPARTMENT OF COMMERCE**

### **PROGRAMME OUTCOMES**

#### **M.Com**

Employ one's critical and analytical skills to engage creativity and productivity in the nation building process.

Face the modern-day challenges in commerce and business being equipped with specialization and practical exposures.

Advance in career from introductory to managerial and directorial realms.

Make informed choices from the diverse options available in career and advanced learning.



  
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## **DEPARTMENT OF B.COM CO-OPERATION**

### **PROGRAMME OUTCOMES**

#### **M.Com (Finance)**

<b>PSO1</b>	It facilitates the students to apply capital budgeting techniques for investment decisions.
<b>PSO2</b>	To prepare the students for an in depth analysis of investment, portfolio management, investment banking and liquidation of investments.
<b>PSO3</b>	It facilitates the students to analysis and frame micro financing schemes for rural banking.
<b>PSO4</b>	To impart the students the concept of risk mitigation in financial sectors.

### **COURSE OUTCOMES**

#### **M.Com**

##### **MCM1C01 BUSINESS ENVIRONMENT AND POLICY**

- To familiarise students with the concepts of macro-economic in which a Business organization operates.
- To give an idea about the policies of the government and assess their impact on business.

##### **MCM1C02 CORPORATE GOVERNANCE AND BUSINESS ETHICS**

- To familiarise the students with the knowledge of corporate ethics
- To enable the students to understand the emerging trends in good governance practices.
- To create corporate financial reports in the global in the global and Indian context.

##### **MCM1C03 QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**

- To acquaint students with important quantitative techniques, which enable sound business decision making
- To make students learn the process of applying appropriate quantitative techniques for validating findings and interpreting results.

##### **MCM1C04 MANAGEMANT THEORY AND ORGANISATIONAL BEHAVIOR**

- Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
- Analyze the complexities associated with management of the group behavior in the organization.
- Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.



### **MCM1C05 ADVANCED MANAGEMENT ACCOUNTING**

- To enable students to understand and apply tools, techniques, and concepts in managerial decision-making process.
- To inculcate analytical skills in interpreting and diagnosing business problems

### **MCM2C06 ADVANCED CORPORATE ACCOUNTING**

- To provide knowledge and skills in the theory and practice of corporate financial accounting
- To provide insight in to some of the important accounting standards of IFRS/ Ind AS
- To enable problem solving abilities among students in matters of various corporate situations such as consolidation of group information, corporate restructuring and liquidation

### **MCM2C07 ADVANCED STRATEGIC MANAGEMENT**

- Students will demonstrate a clear understanding of the concepts, tools & techniques used by executives in developing and executing strategies and will appreciate its integrative and interdisciplinary nature.
- Students will be able to demonstrate capability of making their own decisions in dynamic business landscape.
- Students will be able to develop their capacity to think and execute strategically.

### **MCM2C08 STRATEGIC COST ACCOUNTING**

- To enable the students to know the applications of Cost accounting tools, Techniques and concepts in managerial decision-making process.
- To provide students adequate knowledge of cost management and control techniques and to enable them to apply these for managing business profitably.

### **MCM2C09 INTERNATIONAL BUSINESS**

- Demonstrate understanding of management theories, current issues of management, the development of conceptual frameworks to guide their application within organizations operating in an increasingly global and competitive environment.
- Exhibit a coherent body of knowledge on economic, ethical, environmental, legal, political, sociological and technological factors together with their effects at local, national and international levels upon the strategy, behaviour and management of organisations.
- Acquire and use a range of concepts, tools and techniques for problem solving and decision-making for analyzing complex and inter-related business scenarios.





### **MCM2C10 MANAGEMENT SCIENCE**

- To familiarize students with concepts of management science and tools supporting decision making
- To enable students to apply Management science techniques in appropriate decision situations.

### **MCM3C11 FINANCIAL MANAGEMENT**

- To acquaint the students with the basic analytical techniques and methods of financial management of business organization.
- To provide the students the exposure to certain advanced analytical techniques that are used for taking financial policy decisions.

### **MCM3C12 INCOME TAX: LAW, PRACTICE AND TAX PLANNING I**

- To enable students to understand computation of income under various heads, taxable income of various entities, tax planning and procedure of assessment.

### **MCM3C13 RESEARCH METHODOLOGY**

- To acquaint students with process and methodology of research
- To enable students to identify research problems, collect and analyse data and present results.

### **MCM4C14 FINANCIAL DERIVATIVES AND RISK MANAGEMENT**

- To make the students efficient in the area of derivatives, by giving them the knowledge of basics in options, futures, swaps etc.

### **MCM4C15 INCOME TAX: LAW, PRACTICE AND TAX PLANNING II**

- To acquaint the students with theoretical and practical knowledge of assessment and tax planning of different assesses.
- To familiarize the students with major and latest provisions of the India tax laws and related judicial pronouncements pertaining to various assesses with a view to derive maximum possible tax benefits admissible under the law.

### **MCM3EF01 INVESTMENT MANAGEMENT**

- To establish a conceptual framework for the study of security analysis and portfolio management.
- This course will provide the students the ability to understand and utilize the skill of optimizing returns.

### **MCM3EF02 FINANCIAL MARKETS AND INSTITUTIONS**

- To provide the students a sound information and knowledge of broad framework of financial markets and institutions.



- To impart the students an understanding of the inter-linkages and regulatory framework within which the system operates in India

#### **MCM4EF03 INTERNATIONAL FINANCE**

- To understand the international financial markets and exchange theories
- To get an idea about foreign exchange exposure and risk management

#### **MCM4EF04 ADVANCED STRATEGIC FINANCIAL MANAGEMENT**

- To build an understanding among students about the concepts, vital tools and techniques used for financial decision making by a business firm



  
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## **DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE**

### **Programme Description:**

The Programme has been designed with the principal intention of familiarizing the learners with the characteristics of the English language as it is written and spoken across the world and with the modes, genres, trends and movements of the literatures written in the language. It is also designed as a continuation of the BA (English Language and Literature) programme offered by the University. Besides for the course on the history of English language, a diachronic approach has been adopted for courses relating to British literature, while a general survey method has been adopted for Indian Writing in English, Regional Indian Writing in Translation, Malayalam Literature in English Translation, Postcolonial Writings in English, Latino Literature and Writings from the Middle East . In tune with the current trend of inter- disciplinarity of programmes, this programme also offers glimpses into Cultural Studies, FilmStudies, Teaching of English and Ecology and Literature. World Drama, which gives an overview of some of the classics of drama across the world and Writings from the Middle East, offering a selection of works from cultures in the Middle East attempt to widen the horizons of literary perspectives. European Fiction in Translation and Indian Fiction in Translation represent attempts at in-depth study of genres in literature. The courses on Women's Writing, Dalit Studies, Queer Studies and American Ethnic Writing present instances of dynamic socio-political discourses operating within literatures across cultures. Introduction to Children's Literature is an attempt to adopt the systemic approach to Literature by focusing on one of the important system in the literary polysystem. The Project/Dissertation in the Fourth Semester is a multiple-mode research- oriented course.

### **Programme Outcomes**

The students are expected to develop both an understanding of the cultures represented by the literatures discussed and abilities of critical thinking. The courses on marginalized discourses promote values-based thinking. The Project/Dissertation in the Fourth Semester is expected to be a window to research/project writing for prospective research scholars and professionals. The elective course on Teaching of English is directly career-oriented



## **ENG1CO1 British Literature from Chaucer to 18th Century (5 credits)**

### **Course Description**

The course features the trends and movements in British Literature from the Fourteenth to the Eighteenth Century. Prominent authors and texts are discussed. There is also an attempt to link the texts and movements to British social and cultural history.

### **Course**

### **outcomes**

The students are expected to get a comprehensive view of British Literature from the Fourteenth to the Eighteenth Century. They are also expected to get an outline of British social and cultural history during the period.

## **ENG1 CO2 British Literature- 19th Century (5 credits)**

### **Course**

### **Description**

The course is intended to familiarize the students with various trends, literary movements and major writers in British Literature during the nineteenth century, one of the most important periods in British Literature and British History in terms of social change and the investments of British society in literature.

### **Course outcomes**

The students are expected to get an outline of the vast body of British Literature in the Nineteenth Century, looking into trends, movements and influences. They are also expected to get an outline of British social and cultural history during the period, examining how social transition is represented/refracted in literature.

## **ENG1CO3 History of English Language (5 credits)**

### **Course Description**

The Course is offered with the aim of acquainting the learners with the history of the English Language from its evolution and its genetic relationship with other Germanic languages and with the Indo-European language family. It connects with courses on British literature in the syllabus with descriptions on English literature and English social and political history in the respective periods in the history of the English



language.

### Course outcomes

The students are expected to get a historical perspective of the English Language in general and to create awareness about the evolution of human language. They are also expected to develop critical thinking on a variety of topics like multiculturalism, power relations in evolution of languages, the dynamics of language change and principles of political correctness in language policy. Discussions on language variety and the use of English in the New Media are career-focused.

### ENG1 C04: Indian Literature in English (Credits 5)

#### Course Description

The course is intended to familiarize the students with the various trends and movements in Indian English literature from its emergence to the present.

#### Course outcomes

The students are expected to trace the emergence and evolution of Indian Writing in English from the early colonial phase to the modern phase. They gain an understanding of the various phases of Indian writing in English in the context of the wider postcolonial and transnational scenario, by critically engaging with notions of imitation, assimilation and experimentation. It further explores the cross pollination this cultural and aesthetic engagement entails. A student who has successfully completed the course is expected to be familiar with the evolving trajectory of English writing in India in its multiple manifestations and diversity.

### AUDIT COURSE

#### Ability Enhancement

**ENG1**                      **A01Writing**                      **Skills**                      **(4**                      **credits)**

#### Course Description

This course aims at imparting practical skills in writing to students. The focus will be on developing the



linguistic, cognitive and logical skills required in writing different types of essays, anecdotes, academic papers and reporting.

### Course outcomes

Students are expected to hone their writing skills. The focus will be on developing the linguistic, cognitive and logical skills required in writing different types of essays, anecdotes, academic papers and reports.

### ENG2C05 : Twentieth Century British Literature up to 1940 (5 credits)

#### Course Description

The course features major trends, movements and writers in British literature up to 1940. The Course also discusses the intellectual currents of the time and the socio- political events which are represented/refracted in literature

#### Course Outcomes

The students are expected to familiarize themselves with the major trends, movements and authors in British literature in the first half of the Twentieth Century. The students are expected to undertake an inquiry/research in the area by brief discussions on comparable texts in European literatures which represent the various phases of Modernism

### ENG2C06 – Literary Criticism and Theory – Part 1(Up to New Criticism)(5 credits)

#### Course Description

The course offers an overview of the major contributions to literary criticism and theory from the classical times to the early twentieth century, including traditional Indian aesthetic theories. It is aimed at providing a general understanding of the critical approaches that have been prevalent in literature through the ages.

### ENG2C07 : American Literature (5 credits)

#### Course Description

This course features texts representing with the dominant trends in American Literature from the early Nineteenth Century to the twentieth century.

#### Course outcomes

The students are expected to familiarize themselves with the maturing phase of American literature in the





early Nineteenth Century to its evolution till the end of the Twentieth century. It focuses on the emergence of a distinct American style and the writing of American ethos in American literature

## **ENG2 C08 Postcolonial Writings (Credits: 5)**

### **Course Description**

This course on Postcolonial literature will explore colonialism and its cultural impacts, through writings produced by people from countries with a history of colonialism, primarily those concerned with the workings and legacy of colonialism and the postcolonial resistance to them.

### **Course outcomes**

The students are expected to get an overview of the historical experience of colonization and its impacts on the colonized peoples across the globe, through the medium of literary writings. The students are expected to acquaint themselves with the major theoretical concepts associated with postcolonial studies as manifested

through the literary discourse in the works under consideration. It also aims to familiarize students with questions of resistance and representation, the politics language and literary form, and the quests for identity, autonomy and self-determination that mark postcolonial literary expression. It is also envisaged that students will acquire the theoretical formulations, methods and strategies for postcolonial analysis that may contribute to the writing of their Fourth Semester dissertation.

## **AUDIT COURSE**

### **Professional Competency**

## **ENG2 A02 Translation Theory and Practice (Credits: 4)**

### **Course Description**

The Course offers discussions on contemporary translation theory, descriptive translation studies and translation practice.

### **Course outcomes**

Students are expected to familiarize themselves with the core of translation theory and some of the current theoretical positions, and at offering training in translation and interpretation of literary and non-literary texts. The students can also obtain a general understanding of the current debates in the discipline.

## **ENG3C09 Twentieth Century British Literature Post 1940(5 Credits)**



## Course description

The course is intended to introduce to students various trends and movements in British literature after the 1940s.

## Course outcomes

The students are expected to get a comprehensive picture of British literature written after 1940, besides giving them an outline of the theoretical paradigms that informed them. The learners are expected to find the course a mapping of British culture and society during the period for the learners.

### **ENG3C10 Literary Criticism and Theory- Part 2 (5 credits)**

#### **Course Description**

This course is structured to provide an introduction to modern critical strategies/ap- proaches to literary texts and to familiarize students with basic theoretical concepts underlying contemporary approaches to literature and the major differences between them. Since the course is an introduction/orientation, a substantial amount of materi- als and schools of thought have to be discussed within the time limit of one semester. Therefore not much time will be spent on attempting to penetrate dense theoretical texts. Instead, after brief introductions that will provide overviews of the various schools of literary theory, representative pieces from practitioners of various schools will be discussed.

#### **Course Outcomes**

At the end of the course, the students are expected to read literary and critical texts with judicious appreciation and build up the competence to generate and articulate personal responses to literary and critical texts, as well to explain the premises and assumptions underlying such personal responses.

### **ENG3 E02 EUROPEAN FICTION IN TRANSLATION (5 credits)**

#### **Course Description**

The course offers a selection of the classics of European fiction as well as a pick of contemporary European fiction. It gives an outline sketch of European fiction across the centuries, introducing learners to its various modes.

#### **Course outcomes**

The students are expected to get a historical perspective of European fictionand glimpses into European culture and society across the centuries.



### **ENG3 E03 WOMEN'S WRITING (5 credits)**

#### **Course Description**

This course examines a selection of women's writing in different genres, across diverse cultures enabling students to discuss the theoretical, historical, thematic concerns that distinguish women's expression. Readings include theoretical and critical texts that shall introduce students to a range of feminist perspectives on literature and writing.

#### **Course Outcomes**

The students are expected to chart out the relationship between gender and writing in the histories of English and Indian literatures. Texts have been chosen from diverse spatial temporal frameworks to alert the students to the pluralities of women's literary engagements in terms of form and theme. The students are expected to identify the differences in women's writing across cultures even as it has certain commonalities in certain specific experiences of patriarchy. The students are also expected to be able to draw a relationship between herself as a woman reader and the text emerging from a different historical context.

### **ENG4C11 English Literature in the 21st Century( 4 credits)**

#### **Course Description**

The Course offers a selection of Twenty First Century writing in English from writers of diverse postcolonial cultures apart from works by a few native English-speaking writers who can fit in the same framework. The texts represent multicultural engagement and cultural resistance at various levels.

#### **Course Outcomes**

The Students are expected to become aware of the multicultural nature of writings in English in the contemporary world and of how English serves as a vehicle for rumination and resistance for writers who come from diverse linguistic communities.

### **ENG 4 P01 Dissertation/Project (Credits: 4)**

#### **Course Outcomes**

The Course is expected to explore the research aptitude of the learners and give them the much needed



background information and experience for taking up research programmes or professional assignments.

### **ENG4V01 Comprehensive viva-voce(4 credits)**

#### **Description:**

Evaluation system including questions from all core papers, done at the end of the course.

### **ENG4 E12 Literature and Ecology (4 Credits)**

#### **Course Description**

This course will explore human connection to environment and especially its nature in various literary works. Ecology has come to play a central intellectual role in our present age and here students are introduced to one of the newest and most vibrant and relevant method of reading literary texts, whereby literary and cultural productions are examined in relation to environmental impact, ecological models and the social, political, ontological and epistemological implication of the categories of 'human' and 'nature'. The focus would be on the role of language and literature in understanding and expressing our connection to the world around us.

#### **Course outcomes**

The students can expect the following objectives from the course:

- To expose students to the scopes of green poetics and green cultural studies through a variety of ecologically conscious literary works.
- To prepare students to contemplate environmental ethics.To equip the learner to improve understanding of current global environmental issues.
- To build an interdisciplinary research outlook among students of English literature.

### **ENG4 E16 DALIT STUDIES (4 Credits)**

#### **Course Description**

The Course offers a selection of Dalit writing from different Indian languages in English translation. Apart from poems and prose narratives/fiction there are essays by prominent Dalit theoreticians Sharan Kumar



Limbale, Pradeepan Pampirikunnu and Gopal Guru. Although few in number the selections are representative of Dalit creativity and Dalit aesthetics.

### Course outcomes

The students are expected to get a focused perspective on the issues that have engaged Dalit writing and Dalit aesthetics in the country. The course also offers glimpses of the interface between Dalit writing and conventional/mainstream writing in a few major literatures in India.



  
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## **PG DEPARTMENT OF HOME SCIENCE**

### **M.Sc. HOME SCIENCE (Nutrition and Dietetics)**

#### **PROGRAMME OUTCOMES**

Nutrition and Dietetics provides concepts related to human nutrition and helps you become an effective learner and practitioner in all fields of dietetic practice. The course also gives you the opportunity to develop advanced skills in the design and implementation of research in the field of human nutrition and dietetics. It is designed to impart advanced knowledge and skills that is life oriented, career and community oriented. It has special relevance to industry and hospital application with the help of weekly field work, rural camp and hospital/industry internship programme.

#### **PROGRAMME SPECIFIC OUTCOMES**

- PSO1 Understand the concepts of biochemistry, food chemistry and food microbiology
- PSO2 Comprehend methods of assessing human nutritional requirements, nutritional assessment and diet planning
- PSO3 Apply theoretical concepts in laboratory setting as per standard methods in the above-mentioned areas
- PSO4 Understand the applications of nutritional sciences in clinical interventions, communication for health promotion, food service management, food science and processing
- PSO5 To equip students to plan diets for clinical and therapeutic conditions within a hospital, fitness center or gym setting.
- PSO6 To impart students a systematic approach to basic and applied aspects of food processing and technology.
- PSO7 To provide students with an opportunity to conduct independent research.

#### **COURSE OUTCOMES**

##### **SEMESTER I**

##### **HND1 C01 HUMAN PHYSIOLOGY**

- CO1 To enable students to understand the metabolic changes in health and different diseases
- CO2 Gain knowledge about the relationship between nutrition and human system
- CO3 Explain physiological processes of all body systems in detail and on an appropriate level





(knowledge, comprehension, application and analysis)

CO4 Explain the role of body systems and mechanisms in maintaining homeostasis

CO5 Explain how the activities of organs are integrated for maximum efficiency

CO6 Introduces basic anatomical and physiological terms, tissues, the integumentary, skeletal, muscular and nervous systems including nervous histology, physiology, spinal cord and nerves.

### **HND1 C02 NUTRITION THROUGH LIFE CYCLE**

CO1 Understand the role of nutrition in different conditions

CO2 Develop competency in planning diets to meet the nutritional requirements of different socioeconomic level

CO3 Identify whether a group or an individual is suffering from malnutrition of any kind

CO4 Assess nutritional status of individuals in various life-cycle stages and determine nutrition-related conditions and diseases by applying knowledge of metabolism and nutrient functions, food sources, and physiologic systems.

### **HND1 C03 ADVANCED FOOD SCIENCE**

CO1 Explain the chemistry underlying the properties of various food components.

CO2 Discuss the major chemical reactions that occur during food preparation and storage.

CO3 Discuss the important pathogens and spoilage microorganisms in foods.

CO4 Explain the effects of common food preparation methods and food storage conditions on survival and growth of microbial contaminants.

CO5 Discuss basic principles of common food preservation methods.

CO6 To understand the nutritive value of foods

CO7 To understand the principles and chemistry of foods and apply the principles during preparation and cooking

### **HND1 C04 MACRO NUTRIENTS**

CO1 Give the chemistry of carbohydrates, fat and protein and how macronutrients are absorbed, stored and metabolized

CO2 Discusses how macronutrients may impact health

CO3 Obtain depth on the study of major nutrients

CO4 Develop competence for undertaking nutritional investigations

CO5 Understand the mechanisms of regulation of metabolic pathways in human body.

CO6 Gain insight into interrelationships between various metabolic pathways

### **HND1 C05 RESEARCH METHODS AND STATISTICS**

CO1 Understanding of the basic framework of research process.



- CO2 Developing an understanding of various research designs and techniques.
- CO3 Have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions.
- CO4 Have a broad background in Mathematics and Statistics, an appreciation of how its various sub-disciplines is related, the ability to use techniques from different areas, and an in-depth knowledge about topics chosen from those offered through the department.
- CO5 Be mathematically, statistically and numerically literate
- CO6 Understand the basic statistical procedures for analysis of research data.
- CO7 Understand organization and summarization of data.
- CO8 Understand the applications of statistical techniques for analysis and interpretation.
- CO9 Use of selective soft wares for qualitative and quantitative data analysis.

## **SEMESTER II**

### **HND2C06-ONCOLOGY NUTRITION**

- CO1 Gain knowledge about different types of cancers
- CO2 To understand how adequate nutrition is beneficial to cancer patients
- CO3 To implement appropriate nutrition screening methods for cancer patients
- CO4 To learn how side effects of cancer treatment can impair nutritional status
- CO5 To apply nutrition management principles for different types of cancer

### **HND2 C07 FOOD SERVICE MANAGEMENT**

- CO1 Understand scientific principles and techniques of food service management
- CO2 Become a successful entrepreneur, professional and pursue higher education
- CO3 Formulate environment friendly innovative food products
- CO4 Acquire skills to establish a food service outlet
- CO5 Professionally competent to take up careers in academics, health care and service industry.
- CO6 To understand the objectives of different types of food service institution
- CO7 Apply knowledge in space allocation of food plants
- CO8 Gain knowledge in menu planning, preparation of recipes in large scale and serving and in food costing.

### **HND2 C08 CLINICAL AND THERAPEUTIC NUTRITION**

- CO1 Understand the causative factors and metabolic changes in various diseases/disorders.
- CO2 Understand the nutrition assessment, planning, implementation, monitoring and follow up in nutrition care process
- CO3 Acquire knowledge on the principles of diet therapy.



- CO4 Comprehend principles of dietary counselling
- CO5 Understand the rationale of prevention of various diseases/disorders.
- CO6 Understand dietary counseling for prevention / treatment of various diseases / disorders.
- CO7 Acquire knowledge on special therapeutic / health foods.

### **HND2 C09 NUTRITIONAL MANAGEMENT IN LIFE STYLE DISEASES**

- CO1 Conduct dietary counseling for prevention and treatment of various diseases / disorders
- CO2 Apply new technologies in nutrition care
- CO3 Understand the etiology, pathophysiological and metabolic anomalies of acute and chronic disorders / diseases.

### **HND2 L01 PRACTICAL - CLINICAL AND THERAPEUTIC NUTRITION**

- CO1 Plan and prepare basic menus and assist in supervising food service personnel in preparing menus and serving of meals
- CO2 Develop skills to prepare special diets, special nutrition formulas for patients who are critically ill and require special feeding through oral, enteral or parenteral routes
- CO3 To analyze accuracy of meal planned and calculate nutritional value of food
- CO4 Develop and implement nutrition care plans, monitor, follow up and evaluate these plans and take corrective measures wherever required
- CO5 Schedule work assignments in the dietary unit to facilitate the effective operation of the kitchen and other food preparation or dining areas.

### **SEMESTER III**

#### **HND3 C10 VITAMINS AND MINERALS**

- CO1 Understand the mechanisms of regulation of metabolic pathways in human body.
- CO2 Gain insight into interrelationships between various metabolic pathways. Understand the methodology for derivation of requirements for specific micronutrients
- CO3 To gain knowledge about different micro nutrient deficiencies
- CO4 Obtain depth on the study of major nutrients

#### **HND3 C11 COMMUNITY NUTRITION**

- CO1 Understand the concept of Nutrition Security
- CO2 Gain an insight into various approaches and strategies for combating malnutrition
- CO3 Understand the various Government programs and policies aimed at improving the health and nutritional status of the population.
- CO4 Develop insight in planning, implementing, monitoring and evaluating nutrition programmes
- CO5 Assess nutritional status using different techniques



### **HND3 C12 PAEDIATRIC NUTRITION**

CO1 Realize the importance of nutritional care and nourishment of children

CO2 Understand the specific needs of children and effects of various diseases on nutritional status and nutritional requirements

CO3 Normal growth, development and behavior and their assessment, as well as approaches to abnormalities from infancy

CO4 Health maintenance and preventive care for children, including age-related issues in nutrition, safety, vaccination and risk factor identification and modification

### **HND3 E01(3) NUTRITIONAL COUNSELLING AND EDUCATION**

CO1 To understand the principles and methods of counselling.

CO2 To apply counselling methods to patients with different diseases

CO3 To promote body's potential towards health, wellness and disease prevention

CO4 To help individuals overcome their immediate problems and also to equip them to meet future problems

### **HND4I01 HOSPITAL INTERNSHIP AND COMMUNITY NUTRITION EDUCATION PROGRAMME**

CO1 Develop skills in diet counseling and feeding of patients.

CO2 Experiential learning to understand the needs of industry

CO3 Develop professional ethics



  
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## **M.Sc. COMPUTER SCIENCE PROGRAMME OUTCOME**

The course of the M.Sc. Computer Science programme is designed with the following outcomes:

- ← To equip students to take up challenging research-oriented responsibilities and courses for their higher studies/profession.
- ← To train and equip the students to meet the requirements of the Software industry in the country and outside.
- ← To motivate and support the students to prepare and qualify challenging competitive examinations such as JRF/NET/JAM/GATE etc.

### **COURSE OUTCOMES**

#### **SEMESTER - I CSS1C01-DISCRETE MATHEMATICAL STRUCTURES**

- ← To introduce discrete mathematics concepts necessary to understand basic foundation of Computer Science.

#### **CSS1C02 - ADVANCED DATASTRUCTURES**

- ← To introduce basic and advanced data structures dealing with algorithm development and problem solving.

#### **CSS1C03 - THEORY OF COMPUTATION**

- ← To provide the students with an understanding of basic concepts in the theory of computation.

#### **CSS1C04 - THE ART OF PROGRAMMING METHODOLOGY**

- ← To learn the art of designing algorithms and flowcharts.
- ← To introduce the concept of algorithmic approach for solving real-life problems.
- ← To develop competencies for the design and coding of computer programs
- . ← To learn designing programs with advanced features of C.

#### **CSS1C05-COMPUTERORGANIZATION&ARCHITECTURE**

- ← To familiarize with the digital fundamentals, computer organization, computer architecture and assembly language programming.

#### **CSS1P06 - PRACTICAL I**

- ← To practically implement the theory portions covered in The Art of Programming Methodology (CSS1C04) and Advanced Data Structures (CSS1C02).





## **SEMESTER II CSS2C01-DESIGN AND ANALYSIS OF ALGORITHMS**

- ← To introduce the concept of algorithmic approach for solving real-life problems.
- ← To teach basic principles and techniques of computational complexity.
- ← To familiarize with parallel algorithms and related techniques.

## **CSS2C02-OPERATING SYSTEM CONCEPTS**

- ← Introduce the underlying principles of an operating system
- ← Exposure of multi programming, virtual memory and resource management concepts.
- ← Case study of public and commercially available operating systems.

## **CSS2C03-COMPUTER NETWORKS**

- ← To provide the student with a top-down approach of networking starting from the application layer.
- ← To introduce computer networking in the backdrop of Internet protocol stack.

## **CSS2C04-COMPUTATIONAL INTELLIGENCE**

- ← To introduce concepts of Artificial Intelligence and Machine Learning.

## **CSS2P06-PRACTICAL II**

- ← To practically implement the theory portions covered in Operating System Concepts (CSS2C02) and Computer Networks (CSS2C03).

- ← To extend the programming knowledge acquired thru The Art of Programming Methodology (CSS1C04).

## **CSS2P07-TERM PAPER**

- ← To introduce the student to the techniques of literature survey.
- ← To acquaint him/her with the process of presenting his/her work through seminars and technical reports.

## **CSS2E05c-WEB TECHNOLOGY**

- ← To introduce the tools for creating and maintaining websites
- content development (HTML), client-side scripting (JavaScript), web server (Apache), server side scripting (PHP) and content management system (Joomla!).





### **SEMESTER III CSS3C01-ADVANCED DATABASE MANAGEMENT SYSTEM**

← To understand the relational model, and know how to translate requirements captured in an Entity-Relationship diagram into a relational schema.

← To reason about dependencies in a relational schema

← To understand normal form schemas, and the decomposition process by which normal forms are obtained.

← To familiarize with advanced SQL statements

← To understand advanced features of database technologies.

### **CSS3C02-PRINCIPLES OF COMPILERS**

← To introduce the fundamental concepts and various phases of compiler design.

### **CSS3C03-OBJECT ORIENTED PROGRAMMING CONCEPTS**

← To learn object-oriented concepts and programming concepts and methodologies and to learn its implementation using Java.

### **CSS3P06-PRACTICAL III**

← To practically implement the theoretical aspects covered in Advanced Database Management System (CSS3C01) and Object-Oriented Programming Concepts (CSS3C03).

← To extend the programming knowledge acquired through The Art of Programming Methodology (CSS1C04) to encompass object oriented techniques.

### **CSS3E04f-DATA WAREHOUSING AND DATA MINING**

← To provide the fundamentals on information retrieval and data mining techniques

← To focus on practical algorithms of textual document indexing, relevance ranking, web usage mining, text analytics, as well as their performance evaluations.

← To give an exposure to the fundamentals of Data Analytics. CSS3E05c-SYSTEM SECURITY

← To provide an understanding of the differences between various forms of computer security, where they arise, and appropriate tools to achieve them.

### **SEMESTER IV CSS4C01-PRINCIPLES OF SOFTWARE ENGINEERING**

← To develop familiarity with software engineering principles and practices.

← To have an understanding about the process of product/literature survey, techniques of problem definition, and methods of report writing.



## CSS4C02-PROJECT WORK

← To give a practical exposure to the process of software development life cycle

← To develop a quality software solution by following the software engineering principles and practices. Students are also encouraged to take up a research-oriented work to formulate a research problem and produce results based on its implementation/simulation/experimental analysis.

## CSS4E01B-ADVANCED TOPICS IN DATABASE DESIGN

← To study the advanced database techniques beyond the fundamental database techniques.



  
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## **NAME OF PROGRAMME: M.Sc. BOTANY**

### **PROGRAMME OUTCOME**

M.Sc. Botany is a two- year postgraduate programme to impart advanced knowledge on modern biology. Other than providing students with indispensable knowledge, the programme curriculum fosters problem- solving and critical thinking skills that prepare students to take on any challenges.

Under this programme the students gain insights into the key research areas of botany. The programme encompasses a balance of both theoretical and practical sessions which enables the students to apply their learning and develop end results.

The programme focuses on career-oriented subjects like microbial biotechnology, plant tissue culture, enzyme technology and genetics, plant breeding and crop improvement etc.

### **PROGRAMME SPECIFIC OUTCOME**

**PSO1.** After successful completion of the course, a student is able to understand different fields of botany like systematics, evolution, ecology, physiology, biochemistry, plant interactions with microbes and insects, anatomy, morphology, reproduction, genetics and molecular biology of various life forms. She/he even has an edge over other students as they will be trained in skill enhancement courses like biofertilizer technology.

**PSO2.** The student completing the course is able to classify various life forms of plants, design and execute experiments related to basic studies on ecology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics, microbiology, molecular biology, recombinant DNA technology etc.

**PSO3.** The student completing the course is capable of executing short-term research projects/dissertations using tools and techniques in any of the basic specializations of botany under supervision.

<b>SEMESTER 1</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>COURSE DURATION</b>
BOT1C01	Phycology, Bryology, Pteridology and gymnosperms	1 Appreciate the gradual process of evolution 2. Understand the significance and interrelationships of lower plants. 3. Appreciate the wide range of lower plant diversity
BOT1C02	Mycology and Lichenology, Microbiology and Plant pathology	1 Understand the diversity and ecological roles of fungi 2. Appreciate the role of lichens in succession and as a pollution indicator 3. Become aware of various plant diseases and the role economic loss due to development of diseases.
BOT1C03	Angiosperm Anatomy, Angiosperm Embryology, Palynology and Lab techniques	1 Appreciate the indicate makeup of the anatomy of angiosperms and evolutionary process which has led to the development of complex anatomy 1



		<ol style="list-style-type: none"> <li>2. Understand the embryological and development aspects of angiosperms.</li> <li>3. Realise the role of palynology in all other fields.</li> </ol>
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**SEMESTER 2**

BOT2C04	Cell biology, Molecular biology and Biophysics	<ol style="list-style-type: none"> <li>1 Understand the molecular structure of living things</li> <li>2. realize the role of complex biomolecules and thousands of chemical reactions taking place in each and every living cell</li> <li>3. Develop skill to handle various instruments used for different research purposes</li> </ol>
BOT2C05	Cytogenetics, Genetics, Biostatistics, Plant breeding and Evolution	<ol style="list-style-type: none"> <li>1 Develop awareness on the possibility of developing new crop varieties with desired qualities through plant breeding methods.</li> <li>2. realize the roles played by millions of genes in organisms and appreciate the genetics of living things</li> <li>3. Understand the log process of organic evolution which lead to the development of the present day organisms.</li> </ol>
BOT2C06	Plant ecology, Conservation biology, phytogeography and forest botany	<ol style="list-style-type: none"> <li>1 Become aware of the intermediate necessity of environment conservation</li> <li>2. Try to reduce pollution and conserve biodiversity</li> <li>3. Understand the structure, ecology and various roles of forests.</li> </ol>

**SEMESTER 3**

BOT3C08	Angiosperm Morphology, Angiosperm Taxonomy and Plant Resources	<ol style="list-style-type: none"> <li>1 Try to find out the interrelationship among angiosperms and classify them based on special characters.</li> <li>2. Understand the morphological peculiarities of angiosperms</li> <li>3. Become aware of the wide range of available plant resources.</li> </ol>
BOT3C09	Biotechnology and Bioinformatics	<ol style="list-style-type: none"> <li>1 Understand various biotechnological methods currently used for improvement of organisms</li> <li>2. Study various bioinformatics methods for the benefit of mankind.</li> </ol>



<b>SEMESTER 4</b>		
BOT4E01	Elective 1: Genetics and crop improvement	1 Understand various methods used for improvement of existing crop varieties. 2. Explain the role of genes in imparting various traits. 3. Try understand the gene pool and protect traditional crop varieties.
BOT4E02	Elective 2: Pathology of spices and plantation crops	1 Realize the economic importance of spices and plantation crops in. 2. Develop awareness on the significant economic loss due to plant diseases. 3. Try to avoid plant diseases by all possible methods

## M.Sc. COMPUTER SCIENCE

### PROGRAMME OUTCOME

The M.Sc. Computer Science is a two- year postgraduate programme focuses on equipping students with the skills to tackle complex problems in computer science. Students learn how to design, build, test, and improve computer systems, software, or algorithms, preparing them to create effective solutions. They also explore how these technologies can impact society on both local and global scales.

In addition to technical skills, the program emphasizes communication, ensuring that students can clearly present their ideas and collaborate in research or the tech industry. With a strong foundation in key topics like programming, algorithms, databases, and networks, graduates are well-prepared to handle the demands of careers in computer science.

The program also encourages ethical practice, ensuring that students understand the importance of professionalism in their field. Graduates are ready to apply knowledge from various related areas and contribute to both local communities and the global computer science landscape.

### PROGRAMME SPECIFIC OUTCOME

**PS01:** To equip students to take up challenging research-oriented responsibilities and courses for their higher studies/profession.

**PSO2:** To train and equip the students to meet the requirements of the software industry in the country and outside.

**PSO3:** To motivate and support the students to prepare and qualify for challenging competitive examinations such as JRF/NET/JAM/GATE etc.

### Programme Course Outcome





<b>SEMESTER 1</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>OBJECTIVES</b>
CSS1C01	Discrete Mathematical Structures	To introduce discrete mathematics concepts necessary to understand basic foundation of Computer Science
CSS1C02	Advanced Data Structures	To introduce basic and advanced data structures dealing with algorithm development and problem solving.
CSS1C03	Theory of Computation	To provide the students with an understanding of basic concepts in the theory of computation
CSS1C04	The Art of Programming Methodology	<ul style="list-style-type: none"> <li>♣ To learn the art of designing algorithms and flowcharts.</li> <li>♣ To introduce the concept of algorithmic approach for solving real-life problems.</li> <li>♣ To develop competencies for the design and coding of computer programs.</li> <li>♣ To learn designing programs with advanced features of C.</li> </ul>
CSS1C05	Computer Organization Architecture	To familiarize with the digital fundamentals, computer organization, computer architecture and assembly language programming
CSS1L01	Practical I	To practically implement the theory portions covered in The Art of Programming Methodology (CSS1C04) and Advanced Data Structures (CSS1C02)
CSS1A01	Introduction to Research (Ability Enhancement Audit Course)	<ul style="list-style-type: none"> <li>♣ Understand research terminology</li> <li>♣ Be aware of the ethical principles of research</li> <li>♣ Identify the components of a literature review process</li> <li>♣ Critically analyse published research</li> <li>♣ To introduce research methods in the field of computer Science</li> </ul>
<b>SEMESTER II</b>		
CSS2C06	Design and Analysis of Algorithms	<ul style="list-style-type: none"> <li>♣ To introduce the concept of algorithmic approach for solving real-life problems.</li> <li>♣ To teach basic principles and techniques of computational complexity.</li> <li>♣ To familiarize with parallel algorithms and related techniques.</li> </ul>
CSS2C07	Operating System Concepts	<ul style="list-style-type: none"> <li>♣ Introduce the underlying principles of an operating system.</li> <li>♣ Exposure of multi programming, virtual memory and resource management concepts. ♣ Case study of public and commercially available operating systems</li> </ul>
CSS2C08	Computer Networks	<ul style="list-style-type: none"> <li>♣ To provide the student with a top down approach of networking starting from the application layer.</li> <li>♣ To introduce computer networking in the back drop of Internet protocol stack.</li> </ul>





CSS2C09	Computational Intelligence		To introduce concepts of Artificial Intelligence and Machine Learning.
CSS2C10	Principles of Software Engineering		<ul style="list-style-type: none"> <li>♣ To develop familiarity with software engineering principles and practices.</li> <li>♣ To have an understanding about the process of product/literature survey, techniques of problem definition, and methods of report writing.</li> </ul>
CSS2L02	Practical II		To practically implement the theory portions covered in the courses Operating System Concepts (CSS2C07) and Computer Networks (CSS2C08) and to extend the programming knowledge acquired through course The Art of Programming Methodology (CSS1C04).
CSS2A02	Term Paper (Professional Competency Course)	Paper Audit	<ul style="list-style-type: none"> <li>♣ To introduce the student to the techniques of literature survey.</li> <li>♣ To acquaint him/her with the process of presenting his/her work through seminars and technical reports.</li> </ul>
<b>SEMESTER III</b>			
CSS3C11	Advanced Database Management System		<ul style="list-style-type: none"> <li>♣ To understand the relational model, and know how to translate requirements captured in an Entity-Relationship diagram into a relational schema.</li> <li>♣ To reason about dependencies in a relational schema.</li> <li>♣ To understand normal form schemas, and the decomposition process by which normal forms are obtained.</li> <li>♣ To familiarize with advanced SQL' statements.</li> <li>♣ To understand advanced features of database technologies.</li> </ul>
CSS3C12	Object Oriented Programming Concepts		Objectives: To learn object oriented concepts and programming concepts and methodologies and to learn its implementation using Java.
CSS3C13	Principles of Compilers		To introduce the fundamental concepts and various phases of compiler design
CSS3L03	Practical III		To practically implement the theoretical aspects covered in Advanced Database Management System (CSS3C11) and Object Oriented Programming Concepts (CSS3C12) and to extend the programming knowledge acquired through The Art of Programming Methodology (CSS1C04) to encompass object oriented techniques.
CSS3E01a	Computer Graphics		<ul style="list-style-type: none"> <li>♣ To understand the fundamentals of the modern computer graphics.</li> <li>♣ To pipeline the mathematics of affine transformations in three dimensions.</li> <li>♣ To understand the common data structures to represent and manipulate geometry, colour and light representation and manipulation in graphics systems.</li> <li>♣ To have an exposure to programming in Open GL.</li> </ul>
CSS3E02c	Cryptography and Network Security		♣ To be familiar with classical and modern encryption and decryption techniques and apply in the security system.



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		♣ To understand various aspects of network security standards.
<b>SEMESTER IV</b>		
CSS4P01	Project	♣ To give a practical exposure to the process of software development life cycle. ♣ To develop a quality software solution by following the software engineering principles and practices. Students are also encouraged to take up a research oriented work to formulate a research problem and produce results based on its implementation/simulation/experimental analysis.
CSS4E03c	System Security	To provide an understanding of the differences between various forms of computer security, where they arise, and appropriate tools to achieve them
CSS4E04b	Advanced Topics In Database Design	To study the advanced database techniques beyond the fundamental database techniques.



  
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