Bachelor of Science (B.Sc.)
Chemistry

SEMESTER – I

MJC-1 (T): Inorganic Chemistry: Atomic Structure, Chemical Bonding and fundamentals of organic Chemistry

Course Objective

The Objective of CBCS based four-year undergraduate Programme (FYUGP) in Chemistry Hons for Semester I & II, Specially for Major & Minor course is to provide the clear conception and understanding about theory and practical course mentioned in the syllabus.

Course Outcomes (COs)

After completion of the course, the students will be able to understand the following:

CO-1: The model of an atom including the related various principles.

CO-2: The principles of bonding as well as shapes and structure of covalent molecules.

CO-3: Initial step of research in Organic Chemistry viz-Directional, Separation and Purification of Organic Compounds.

MJC-1 (P): 2 Credits
Inorganic and Organic Chemistry Practical

Course Outcomes (COs)

After finishing this Practical Course, students should be able to:

CO-1: Understanding and preparing solution of different strengths.

CO-2: Calculating the neutral point in different titration.

CO-3: Initial research steps involved in Organic Chemistry.

SEMESTER – II

MJC-2 (T): Physical Chemistry: States of matter and Ionic Equilibrium

Course Outcomes (COs)

After completion of this course, the student will have sound knowledge and understanding about:

CO-1: The mathematical expressions for different Properties of gas, liquid and solid and understand their physical significance.

CO-2: The Crystal structure, and may calculate related properties of different crystal systems.

CO-3: The concept of ionization of electrolytes with emphasis on weak acid and base and hydrolysis of salt.

CO-4: The concepts of pH, pK_a, pK_b, pK_w Buffer Solutions, Solubility Product etc. and their applications in day to day life.

MJC-2 (P): Physical Chemistry Lab

Course Outcomes (COs)

When the students will finish this practical course, they will be skilled in:

CO-1: Determination of coefficient of viscosity of various types of solutions and also in the determination of the surface tension of the various type of liquids.

CO-2: Molecular weight determination by victor Mayer method.

CO-3: Preparation of buffer solution, pH determination of various types of buffer solutions.

SEMESTER – I

MIC-1 (T): Inorganic Chemistry Atomic Structure and Chemical Bonding and Fundamentals of organic Chemistry

Course Objective

The Objective of CBCS based four year undergraduate Programme (FYUGP) in Chemistry Hons for Semester I & II. Specially for Major & Minor course is to provide the clear conception and understanding about theory and practical course mentioned in the syllabus.

Course Outcomes (COs)

After completion of the course, the students will be able to understand the following:

CO-1: The model of an atom including the related various principles.

CO-2: The principles of bonding as well as shapes and structure of covalent molecules.

CO-3: Initial step of research in Organic Chemistry viz-Directional, Separation and Purification of Organic Compounds.

SEMESTER – II

MIC-2 (T): Inorganic Chemistry: Atomic Structure, Chemical Bonding and fundamentals of organic Chemistry

Course Objective

The Objective of CBCS based four-year undergraduate Programme (FYUGP) in Chemistry Hons for Semester I & II, Specially for Major & Minor course is to provide the clear conception and understanding about theory and practical course mentioned in the syllabus.

MIC-2 (P): Physical Chemistry Lab

Course Outcomes (COs)

When the students will finish this practical course, they will be skilled in:

CO-1: Determination of coefficient of viscosity of various types of liquids and also in the determination of the surface tension of the various type of liquids.

CO-2: Molecular weight determination by victor Mayer method.

CO-3: pH determination of various types of buffer solutions.

SEMESTER – I

MDC-1 (T): Inorganic Chemistry: Atomic Structure, Chemical Bonding and fundamentals of organic Chemistry

Course Objective

The Objective of CBCS based four year undergraduate Programme (FYUGP) in Chemistry Hons for Semester I & II, Specially for Major & Minor course is to provide the clear conception and understanding about theory and practical course mentioned in the syllabus.

SEMESTER – II

MDC-2 (T): Inorganic Chemistry: Atomic Structure, Chemical Bonding and fundamentals of organic Chemistry

Course Objective

The Objective of CBCS based four year undergraduate Programme (FYUGP) in Chemistry Hons for Semester I & II, Specially for Major & Minor course is to provide the clear conception and understanding about theory and practical course mentioned in the syllabus.

MDC-2 (P): Physical Chemistry Lab

Course Outcomes (COs)

When the students will finish this practical course, they will be skilled in:

CO-1: Determination of coefficient of viscosity of various types of liquids and also in the determination of the surface tension of the various type of liquids.

CO-2: Molecular weight determination by victor Mayer method.

CO-3: pH determination of various types of buffer solutions.

Skill Enhancement Course (SEC)

Course Title – Advance Spreadsheet Tools

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students to use Excel for advanced data analysis
- To equip the students to with automation skills on excel
- To enable the students to use excel for informed decision making.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.

CO2: By studying this course, students will be able to draw analysis on data using spreadsheets and use interpretation to make decisions.

CO3: By studying this course, students will be able to generate word documents with appropriate formatting, layout, proofing.

CO4: By studying this course, students will be able to manage data for generating queries, forms and reports in a database.

Course Title – Basic IT Tools

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students develop IT skills that are a pre-requisite in today's work environment.
- To equip them with basic computing skills that will enhance their employability in general.
- To enable the students to analyze and present information in a meaningful manner.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: By studying this course, students will be able to use word-processor to generate documents with appropriate formatting, layout, review and referencing.

CO2: By studying this course, students will be able to manage data in worksheets and workbooks and analyze it using spreadsheet functions and inbuilt formulas.

CO3: By studying this course, students will be able to analysis on data using spreadsheets to make decisions.

CO4: By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.

CO5: By studying this course, students will be able to manage data in database tables and use the same for generating queries, forms and reports.

Course Title – Beginners Course to Calligraphy

Learning Objectives

The Learning Objectives of this course are as follows:

- To teach students the art of Calligraphy.
- To make students better at handwriting and embellish the scripts.
- To help the students communicate with creativity.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Students will be skilled in calligraphy scripts.

CO2: Learning flourishing will help to develop good writing.

CO3: Practice sessions will further a project at the end of semester.

CO4: Will induce skills to set up a business, too.

Course Title – Big Data Analytics

Learning Objectives

The Learning Objectives of this course are as follows:

- To Understand the Big Data Platform and its Uses
- Provide an overview of Apache Hadoop
- Provide HDFS Concepts and Interfacing with HDFS.
- Provide hands on Hadoop Eco System
- To understand spark framework

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to identify Big Data and its Business Implications.

CO2: After studying this course, students will be able to list the components of Hadoop and Hadoop Eco-System.

CO3: After studying this course, students will be able to access and process data on distributed file system.

CO4: After studying this course, students will be able to manage job execution in Hadoop environment.

CO5: After studying this course, students will be able to develop Big Data Solutions using Hadoop Eco System.

Course Title – Business Communication

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students to enhance written as well as oral communication in the corporate world.
- To help students in understanding the principles and techniques of business communication.
- To understand the use of electronic media for communication.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to explain the need for communication in management.

CO2: After studying this course, students will be able to appreciate the need of effective writing for communication.

CO3: After studying this course, students will be able to demonstrate the skill of effective report writing and summarizing annual reports.

CO4: After studying this course, students will be able to analyze business correspondence and e-correspondence.

CO5: After studying this course, students will be able to appreciate oral presentations.

Course Title – Communication in Everyday Life

Learning Objectives

The Learning Objectives of this course are as follows:

- To lay down a basic foundation for basic communication that is a part of a student's everyday life.

- To inculcate the fundamentals of communication with the aim to enhance listening, speaking and writing skills.
- To hone practical skills that can be used in day-to-day affairs.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to improve mediation skills.

CO2: After studying this course, students will be able to building human relationships.

CO3: After studying this course, students will be able to foster societal understanding & develop an independent perspective.

CO4: After studying this course, students will be able to enhance social Communication skills of students.

Course Title – Communication in professional Life

Learning Objectives

The Learning Objectives of this course are as follows:

- To prepare the students for their upcoming professional fields.
- To inculcate the fundamentals of professional and business communication.
- To learn aspects of global communication.
- To enhance employability skills of the learners by enabling them to write effective resumes and face interviews with confidence.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to improve presentation skills to be learnt by effective use of verbal and non-verbal communication for the professional field.

CO2: After studying this course, students will be able to acquire practical employability skills to be disseminated through focused sessions on practical employable knowledge.

CO3: After studying this course, students will be able to enhance professional communication.

CO4: After studying this course, students will be able to improve persuasion and negotiation skills which will be useful for the professional field.

Course Title – Communication in Professional Life

Learning Objectives

The Learning Objectives of this course are as follows:

- To build creative writing skills of students in the main in odes of creative writing vizpoetry, fiction (novel, short stories), non-fiction (life narratives, autobiographies and biographies) and drama.
- To inculcate practical skill in students by mapping their creative talent which be beneficial for employability too.
- To perform hands-on-activities to students to develop their creative skills through practical sessions.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to sensitive to the texture of literary language.

CO2: After studying this course, students will be able to develop craft in creative writing.

CO3: After studying this course, students will be able to develop sense of expressing themselves through poetry/short biography.

CO4: After studying this course, students will be able to induce an understanding of their lationship between an individual and society.

CO5: After studying this course, students will be able to get into different fields and pursue versatile career opportunities.

CO6: After studying this course, students will be able to develop an understanding of theatre and performance through drama will also help them to develop observatory and behavioral skills.

CO7: After studying this course, students will be able to develop a critical thought process and a knack in putting it in words. Students may also utilize the learnings of proofreading and editing for their academic and professional growth.

CO8: After studying this course, students will be able to go for publishing their own work.

CO9: After studying this course, students will be able to write a book and submit.

Course Title – Digital Marketing

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint the students with the knowledge of growing integration between the traditional and digital marketing concepts and practices in the digital era.
- To familiarize the students with the tools and techniques used by the digital marketers for driving the marketing decisions to attain marketing objectives.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to understand the concept of digital marketing and its integration with traditional marketing.

CO2: After studying this course, students will be able to understand customer value journey in digital context and behaviour of online consumers.

CO3: After studying this course, students will be able to understand email, content and social media marketing and apply the learnings to create digital media campaigns.

CO4: After studying this course, students will be able to examine various tactics for enhancing a website's position and ranking with search engines.

CO5: After studying this course, students will be able to leverage the digital strategies to gain competitive advantage for business and career.

Course Title – Graphic Design and Animation

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the skill of animation.
- To learn about the application of 2D and 3D animation.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to understand the importance of animation and graphics design.

CO2: After studying this course, students will be able to learn graphics design in 2D and 3D animation.

CO3: After studying this course, students will be able to learn the application of graphics design in 2D and 3D animation in advertising and other areas.

Course Title – Introduction to Cloud Computing (AWS)

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about cloud computing through Amazon Web Services (AWS) platform.
- To learn about AWS cloud concepts, services, security and architecture to build an application.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to Understanding cloud computing platform.

CO2: After studying this course, students will be able to differentiate between on-premises, hybrid-cloud, and all-in cloud

CO3: After studying this course, students will be able to describe the basic global infrastructure of the AWS Cloud

CO4: After studying this course, students will be able to understanding the core AWS services, including compute, network databases and storage.

Course Title – Personal Financial Planning

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with different aspects of personal financial planning like savings, investment, taxation, insurance and retirement planning.
- To develop the necessary knowledge and skills for effective financial planning.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to understand the meaning and appreciate the relevance of financial planning.

CO2: After studying this course, students will be able to understand the concept of investment planning and its methods.

CO3: After studying this course, students will be able to examine the scope and ways of personal tax planning.

CO4: After studying this course, students will be able to analyze insurance planning and its relevance.

CO5: After studying this course, students will be able to develop insight into retirement planning and its relevance.

Course Title – Personality Development and Communication

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop inter personal and effective communication skills.
- To develop problem solving skills and understand its influence on behaviour and attitudes of individuals.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to understand the importance of oral and written communication in day-to-day working of the organization.

CO2: After studying this course, students will be able to develop inter personal skills and problem-solving skills.

CO3: After studying this course, students will be able to understand the rule of body language in effective communication.

Course Title – Prospecting E-waste for Sustainability

Learning Objectives

The Learning Objectives of this course are as follows:

- To provide in-depth knowledge on the effective mechanisms to regulate the generation, collection and storage of e-waste
- To gain insights into the internationally/nationally acceptable methods of transport, import and export of e-waste within and between countries
- To develop a holistic view on recycling, treatment and disposal of e-waste and related legislative rules.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to holistically analyze the environmental impacts of e-waste

CO2: After studying this course, students will be able to apply the skills and various concepts for sustainable management of e-waste

CO3: After studying this course, students will be able to decipher the role of various national and international regulations for e-waste management

CO4: After studying this course, students will be able to provide specific recommendations for improved methods for handling e-waste at different stages such as generation, collection, storage, transport and recycling.

Course Title – Public Speaking in English Language and Leadership

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart leadership skills to students along with adequate communication skills to curate strong leaders in the emerging social, political and corporate world.
- To create leaders with ethics and resilience in industry-based fields as well as social fields.
- To allow students to realize their leadership skills and curate them through a hand-on practical approach which will be helpful in generating employable skills for them.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to learn effective communication through Public Speaking will instill leadership development among students.

CO2: After studying this course, students will be able to lead in different fields at the undergraduate level, be responsible citizens and employ leadership skills in their future endeavors too.

CO3: After studying this course, students will be able to strengthen their critical mindset, help them being assertive and put forward constructive viewpoints employing the skills learnt in the practice sessions.

Course Title – Statistical Software Package

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with data analysis using a statistical software package like SPSS or any equivalent.
- To provide skills for research analysis and increase employability.
- To lay a foundation for advance data analysis work and higher education.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to understand basic functions of statistical software package for managing variables and generate descriptive statistics to describe the data and analyze data through graphs and charts.

CO2: After studying this course, students will be able to test differences in sample means.

CO3: After studying this course, students will be able to identify relationships between variables and develop models for predicting dependent variables on the basis of independent variables.

CO4: After studying this course, students will be able to understand data structures and identify clusters in data.

CO5: After studying this course, students will be able to identify principal components that are relevant from a host of variables.

Course Title – Sustainable Ecotourism and Enterpreneurship

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students in concepts and principles of sustainable ecotourism leading to a new generation of entrepreneurs
- To inculcate field-based practical skills in translating ecological systems into wealth generation while conserving natural resources
- To transform local biological wealth into a hub of global attraction and generate a scientific basis of Indian traditional knowledge

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to develop next-generation ecological entrepreneurs.

CO2: After studying this course, students will be able to evolve eco-literate society by integrating market-based instruments with eco-cultural knowledge of traditional societies.

CO3: After studying this course, students will be able to practice ecological knowledge for wealth generation, environmental conservation and popularization of Indian traditional knowledge.

Course Title – Visual Communication and Photography

Learning Objectives

The Learning Objectives of this course are as follows:

- To synthesize a comprehensive view of principles involved in Visual Communication.
- To appreciate and express the cultural significance of photography art and understand its evolution and purposes.
- To develop an awareness of compositional and organizational strategies for the effective deployment of formal elements of visual art.
- To read visual texts with a deep knowledge of visual history and theory.
- To create an ability of situating the content and form of the visual representation of thematic context.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: After studying this course, students will be able to acquire knowledge of the cultural and historical importance of the visual medium.

CO2: After studying this course, students will be able to explore the fundamentals and underlying theories of Visual Communication.

CO3: After studying this course, students will be able to develop a thorough knowledge of concepts and skills in creating photographs.

CO4: After studying this course, students will be able to learn to identify and analyze semiotics in photographs.

CO5: After studying this course, students will be able to develop a craftsmanship in creating aesthetically pleasing photographs.

Course Title – पटकथा लेखन

Learning Objectives

The Learning Objectives of this course are as follows:

- पटकथा लेखन का परिचय कराना।
- विद्यार्थी की लेखन–क्षमता और भाशा–कौशल को बढ़ावा देना।
- विद्यार्थी की लेखन में रोजगार सम्बन्धी क्षेत्रों के लिए तैयार करना।

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: पटकथा लेखन तथा उसके तकनीकी भाब्दों से विद्यार्थी अवगत हो सकेगा।

CO2: पटकथा लेखन की जानकारी मिलने के उपरान्त विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी।

CO3: विद्यार्थी भाशायी सम्प्रेशण को समझते हुए लेखन से सम्बन्धित विभिन्न पक्षों से बवगत हो सकेगा।

CO4: विद्यार्थी में अभिव्यक्ति कौ ाल का विकास हो सकेगा।

Course Title – रंगमंच

Learning Objectives

The Learning Objectives of this course are as follows:

- हिन्दी रंगमंच का परिचय कराना।
- नाट्य–प्रस्तुति की प्रक्रिया की जानकारी देना।
- अभिनय के विभिन्न पक्षों से अवगत करना।
- रंगमंच के खेलों और गतिविधियों से अवगत कराना।

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: नाट्य–प्रस्तुति की प्रक्रिया से विद्यार्थी अवगत हो सकेगा।

CO2: रंगमंच की जानकारी मिलने के उपरान्त इस क्षेत्र में विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी।

CO3: रंगमंचीय गतिविधियों से विद्यार्थी के व्यक्तित्व का विकास हो सकेगा।

CO4: विद्यार्थी में अभिव्यक्ति कौ ाल का विकास हो सकेगा।

Course Title – रचनात्मक लेखन

Learning Objectives

The Learning Objectives of this course are as follows:

- विद्यार्थीयों के मौखिक और लिखित अभिव्यक्ति कौ ाल को विकसित करना।
- उनमें कल्पना ीलता और रचनात्मकता का विकास करना।
- साहित्य की विविध विधाओं और उनकी रचनात्मक भौली का परिचय कराते हुए लेखन की ओर प्रेरित करना।
- प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन प्रवृति को विकसित करना।

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: मौखिक और लिखित अभिव्यक्ति कौ ाल को विकसित होने में मदद मिलेगी।

CO2: उसमें कल्पना ीलता और रचनात्मकता का विकास हो सकेगा।

CO3: साहित्य की विधि विधाओं और उनकी रचनात्मकता भौली का परिचय होगा जिससे वे स्वयं भी विधाओं में लेखन की अग्रसर हो सकेंगे।

CO4: प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन की ओर भी अग्रसर होंगे।

Value Added Courses (VAC)

Course Title – Arts of Being Happy

Learning Objectives

The Learning Objectives of this course are as follows:

- To synthesize the insights developed by Human Development experts, Psychologists, Anthropologists on one hand, and the intellectual traditions of Vedantic Philosophy and Indology on the other towards the experience of happiness.

- To illustrate various factors that determine the subjective experience of happiness in a cross cultural context.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: The students shall be able to evaluate the factors contributing to the phenomenon of happiness in the personal, familial and community life of an individual in different cultures in the Indian context.

CO2: They will be able to develop healthy interpersonal relationships and wellbeing, cherishing the values of Indian culture and philosophy.

CO3: They will be able to relate to the global phenomenon of sustainable development and become sensitive to the needs of the planet.

CO4: They will be able to apply the experience of Aananda at a personal level.

Course Title – Ayurveda and Nutrition

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the basic principles of nutrition in Ayurveda.
- To link the Ayurvedic nutrition with modem dietary practices for health.
- To analyze basic tenets of traditional diets and health recipes.
- To understand the contemporary food habits in everyday life.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Awareness of traditional food cultures of India.

CO2: Evaluate changing food patterns and lifestyle over the years.

CO3: Understand Indian Knowledge Systems (IKS) and key Vedic principles with respect to Food and Nutrition.

CO4: Apply basic tenets of traditional diets for health and disease.

CO5: Prepare selected healthy recipes based on Ayurvedic principles.

Course Title – Constitutional Values and Fundamental Duties

Learning Objectives

The Learning Objectives of this course are as follows:

- Enrich students with knowledge and relevance of the Constitution.
- Develop awareness about Duties and Values.
- Inculcate a sense of Constitutionalism in thought and action.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Understand the Constitution and its relevance.

CO2: Appreciate the values and goals embedded in the Constitution.

CO3: Recognize the importance of Fundamental Duties enshrined in the Constitution.

CO4: Apply the spirit of fundamental values and duties in everyday national life.

Course Title – CULTURE AND COMMUNICATION

Learning Objectives

The Learning Objectives of this course are as follows:

- To focus on traditional values disseminated from Indian cultural heritage.
- To understand the interconnections between the legacy of our past and needs of our contemporary society.
- To learn to adapt interact and celebrate our diversity and pluralistic culture.
- To develop communication skills in speaking listening reading and writing and apply them in our quotidian life as young citizens of contemporary India.
- To integrate ethical values and life skills.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Students will be able to appreciate the relevance of ancient Indian wisdom and core ethical values in our contemporary life.

CO2: Students will be able to engage in a dialogue between the past and the present and inculcate the best principles towards a meaningful life.

CO3: Students will be encouraged to involve themselves in team work and group activities to address challenges faced in metropolitan cities.

CO4: Students will be able to develop communication skills, that is, analytical reading, empathetic listening, considerate speaking as well as informed writing.

CO5: Extension activities will equip the students, drawn from diverse backgrounds, with life skills and confidence to integrate with a multicultural environment and work towards an inclusive community.

CO6: Students will be encouraged to envisage and work towards an ethically robust society and there by strengthen the nation.

Course Title – Digital Empowerment

Learning Objectives

The Learning Objectives of this course are as follows:

- Understand the digital world and need for digital empowerment
- Create awareness about Digital India.
- Explore, communicate and collaborate in cyberspace.
- Building awareness on cyber safety and security.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Use ICT and digital services in daily life.

CO2: Develop skills to communicate and collaborate in cyber space using social platforms, teaching/learning tools.

CO3: Understand the significance of security and privacy in the digital world.

CO4: Evaluate ethical issues in the cyber world.

Course Title – Emotional Intelligence

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce the concept of emotional intelligence, its models and components.
- Understand the significance of emotional intelligence in self-growth and building effective relationships.
- Identify the measures of emotional intelligence.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Self-Awareness, Self-Management, Social Awareness & Relationship Management.

CO2: Discover personal competence and techniques of building emotional intelligence.

CO3: Gain insights into establishing positive relationships.

Course Title – Ecology and Literature

Learning Objectives

The Learning Objectives of this course are as follows:

- To raise awareness among students towards the urgent predicament of Environmental and Ecological crisis and the need for reducing our carbon footprint upon fast depleting ravaged ecological reserves.
- To develop a heightened ecological consciousness among students, leading to more responsible ecological behavior.
- To view environmental concerns as raised through plays stories and poems.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: The course will highlight the urgency of environmental crisis making students conscious and aware of the role each one of us plays into environmental sensitivity and responsible ecological behavior.

CO2: Students will be encouraged to respond to incidents of habitat destruction deforestation etc. and realize the need for our urgent intervention.

Course Title – Ethics and Culture

Learning Objectives

The Learning Objectives of this course are as follows:

- The course aims to help students explore ethical and cultural dimensions of their lives.
- The course provides a forum for students to pause, revisit their assumptions and beliefs and becomes mindful of their thoughts, emotions and actions.
- It gives the students an opportunity to express themselves and inquire into their decision making processes. This will enable them to cultivate ethical values and participate in the creation of a society based on acceptance, compassion and justice.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Explore perspectives on ethics in thoughts, words and actions

CO2: Evolve ethics decision making practices

CO3: Understand the need for an ethical society and culture

CO4: Introspect, become conscious of and assess one's stance in life

CO5: Cultivate empathy, tolerance and compassion

CO6: Apply the values learnt in the course to everyday life.

Course Title – Ethics and Values in Ancient Indian Traditions

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the rich cultural traditions relating to discourses on life and its purpose, instilling of values relating to ethical and moral propriety.
- To make students more engaged with the past traditions of the country.
- To introduce students to early epics: Puranic, Buddhist and other traditions.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Students will develop an overview of indigenous philosophies.

CO2: Understanding the richness of Indian heritage leading to greater sensitivity.

CO3: Inspiration from history to deal with contemporary issues.

CO4: Appreciate the traditions of diversity, discussions, debates and knowledge transmission.

Course Title – Financial Literacy

Learning Objectives

The Learning Objectives of this course are as follows:

- Familiarity with different aspects of financial literacy such as savings, investment, taxation and insurance.
- Understand the relevance and process of financial planning
- Promote financial well-being

Course Outcomes (COs)

CO1: Develop proficiency for personal and family financial planning

CO2: Apply the concept of investment planning

CO3: Ability to analyze banking and insurance products

CO4: Personal tax planning

Course Title – Fit India

Learning Objectives

The Learning Objectives of this course are as follows:

- Encourage physical activity through engaging the students in sports and yoga.
- Understand the importance of a balanced diet.
- Build skills for self-discipline, self-confidence, cooperation and teamwork.
- Promote fitness as a joyful activity.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Adopting a healthy lifestyle.

CO2: Knowledge of nutrition, diet and psycho-physiological aspects of fitness.

CO3: Develop self-esteem, Self-confidence, Self-discipline and team spirit as indicators of fitness.

Course Title – Gandhi and Education

Learning Objectives

The Learning Objectives of this course are as follows:

- Seek inspiration from Gandhi's thoughts on education.
- Analyse Gandhian education philosophy for moral and character development.
- Understand Gandhi's Idea on Self-reliant education (Swavalambi Shiksha).
- Relate Gandhi's educational thoughts to NEP 2020

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Value Gandhian perspective on education.

CO2: Appreciate the significance of education in Indian languages

CO3: Evaluate the application of Gandhian thoughts in NEP 2020

CO4: Realise the principles of NEP 2020 in vocational and skill oriented education.

Course Title – Panchakosha: Holistic Development of Personality

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce Five Koshas – five levels of mind-body complex – Annamaya, Pranayama, Manomaya, Vigyanamaya and Anandamaya Kosha; for a holistic development of personality.
- To generate awareness about physical and mental wellbeing through the Indian concept of Panchkosha.
- To develop a positive attitude towards self, family and society amongst students.
- To guide students build personalities based on the understanding of Panchkosha.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Enhanced physical and mental health.

CO2: Coping with peer pressures and stress.

CO3: Improved concentration leading to better overall performance.

CO4: Mange life situations through a balanced and mature approach.

Course Title – Social and Emotional Learning

Learning Objectives

The Learning Objectives of this course are as follows:

- This course aims to develop social and emotional awareness in students and initiate them towards better personal and social well-being.
- To create an awareness towards self, others, the environment and their harmonious coexistence.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Students will be able to become aware of oneself and the society.

CO2: Make informed lifestyle choices and extend the self in the joy of giving.

CO3: Develop empathy, compassion, connect with nature and evolve emotionally to create a more harmonious society.

CO4: Cultivate sensitivity towards discriminatory practices and explore possible solutions.

Course Title – Sports for Life

Learning Objectives

The Learning Objectives of this course are as follows:

- To imbibe the significance of sports to promote health, fitness and wellness in life.
- To understand the values of teamwork, tolerance, goal-setting and decision making.
- To learn the strategies and tactical moves while playing a sport.
- To understand the importance of physical activity in reference to 3S: strength, speed and suppleness.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Acquire values of cooperation, team spirit, determination, and endurance.

CO2: Acquire good health and psychological well-being through sports participation.

CO3: Apply the decision making-ability and goal-setting skills acquired through sports participation in everyday life.

CO4: Acquire skills for engaging in moderate or vigorous physical activity and sports participation.

CO5: Reduce exposure to screen time on electronic gadgets and channelizing energy through sports participation.

Course Title – Swachh Bharat

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the developmental challenges with reference to sanitation infrastructure and practices.
- To build values of cleanliness, hygiene and waste management in diverse socio-economic contexts.
- To understand planning of social policy and programmes.
- To use waste management techniques at community level.
- To instill a sense of service towards society and the Nation.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Understanding the significance of the Swachh Bharat Abhiyan.

CO2: Ability to analyze and predict the sanitation challenges of India.

CO3: Determine the link between sanitation and development.

CO4: Contribute to the Swachh Bharat Abhiyan through real time projects/fieldwork.

Course Title – Vedic Mathematics

Learning Objectives

The Learning Objectives of this course are as follows:

- Foster love for math's and remove its fear through Vedic Mathematics
- Enhance computation skills in students through Vedic Mathematics
- Develop logical and analytical thinking
- Promote joyful learning of Mathematics
- Discuss the rich heritage of mathematical temper of Ancient India.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Overcome the fear of Math's.

CO2: Improved critical thinking

CO3: Familiarity with the mathematical underpinnings and techniques

CO4: Ability to do basic Math's faster and with ease.

CO5: Appreciate the Mathematical advancements of Ancient India.

Course Title – Yoga: Philosophy and Practice

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the fundamentals of Yoga for harmonizing the body, mind and emotions.
- To demonstrate the value and the practice of holistic living.

- To value the heritage of Yoga for self and society.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Understanding ways to harmonies the body and mind through Yoga.

CO2: Disciplining the mind through practicing Yoga.

CO3: Understanding of consciousness through practical training.

Course Title – भारतीय भक्ति परंपरा और मानव मूल्य

Learning Objectives

The Learning Objectives of this course are as follows:

- भारतीय भक्ति की महान परंपरा, प्राचीनता और इसके अखिल भारतीय स्वरूनप से छात्रों का परिचय कराना
- भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों को जगाकर उनका चारित्रिक विकास करना और एक अच्छे मनुश्य का निर्माण करना।
- छात्रों को भारतीय नैतिक, सांस्कृतिक और समाजिक मूल्यों के प्रति जागरूक करना।
- भारतीय भक्ति परंपरा के माध्यम से राश्ट्रीयता और अखिल भारतीयता की भावना जागृत करना।

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों का विकास होगा और वे एक अच्छे और चरित्रवान मनुश्य बन सकेंगे।

CO2: भारतीय भक्ति परंपरा के सांस्कृतिक और सामाजिक पक्षों की जानकारी हो सकेगी।

CO3: भक्ति की प्राचीनता और अखिल भारतीय स्वरूप की जानकारी से राश्ट्रीयता और अखिल भारतीयता की भावना जागृत और मजबूत होगी।

CO4: प्रमुख भक्त कवियों का परिचय और उनके विचारो की जानकारी हो सकेगी।

Course Title – सृजनात्मक लेखन के आयाम

Learning Objectives

The Learning Objectives of this course are as follows:

- सृजनात्मक और भाशायी कौ ाल का संक्षिप्त परिचय कराना
- विचारों का प्रभावी प्रस्तुति करण करना
- सृजनात्मक चिंतन और लेखन क्षमता को विकसित करना
- मीडिया लेखन की समझ विकसित करना पाठ्यक्रम अध्ययन के परिणाम

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: सृजनात्मक चिंतन और लेखन क्षमता का विकास हो सकेगा

CO2: लेखन और मौखिक अभिव्यक्ति की प्रभावी क्षमता विकसित हो सकेगी

CO3: मीडिया लेखन की समझ विकसित होगी

CO4: विद्यार्थी में अपने परिवेश, समाज तथा राष्ट्र के प्रति संवेदन ाीलता का विकास होगा

SEMESTER – III

MJC-3 (T): Organic Chemistry: Cyclic Hydrocarbons and their Halogen Derivatives (T)

Course Outcomes (COs)

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

CO-1: The aromatic character of the molecules.

CO-2: The idea to design some organic synthesis.

SEMESTER – III

MJC-4: Physical Chemistry: Chemical Thermodynamics and its Application (T)

Course Outcomes (COs)

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

CO-1: Various thermodynamic terms.

CO-2: Various enthalpies of transformations and Kirchhoff's law.

CO-3: Entropy changes, Gibbs free energy change, partial molar quantities, spontaneous and non- spontaneous processes.

CO-4: Second and third law of thermodynamics.

SEMESTER – III

MJC-4 (P): Chemical Thermodynamics and its Applications (P)

Course Outcomes (COs)

After completion of this practical course, the students will be skilled in determining:

CO-1: Different types of enthalpy changes.

CO-2: The heat capacity of calorimeter.

SEMESTER – IV

MJC-5 (T): Inorganic Chemistry: s-, p-, d- and f- block elements (T)

Course Outcomes (COs)

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

CO-1: Different oxidation states of elements with their relative stability and complex forming properties.

CO-2: The ring, cage and polymers of B, Si & P.

CO-3: To carry out the preparation of inorganic compounds.

CO-4: The important properties of transition metals such as their oxidation states, colour, magnetic and spectral, use of Latimer diagrams in identifying oxidizing, reducing and disproportion ting species.

CO-5: The concepts related with noble gases, their compounds, shapes, properties and applications.

SEMESTER – IV

MJC-5 (P): Qualitative Analysis of Inorganic Salt Mixture Containing Four Radicals (P)

Course Outcomes (COs)

After the end of this practical course students will be skilled in:

CO-1: Identification of basic radicals from known and unknown salts.

CO-2: Identification of acid radicals from known and unknown salts.

SEMESTER – IV (AEC-4)

Course on NCC

Learning Objectives

The Learning Objectives of this course are as follows:

- Provide knowledge about the history of NCC, its organization, and incentives of NCC for their career prospects.
- Inculcate spirit of duty and conduct in NCC cadets.
- Provide understanding about different NCC camps and their conducts.
- Provide understanding about the concept of national integration and its importance.
- Provide understanding about the concept of self-awareness and emotional intelligence
- Provide understanding about the concept of critical & creative thinking.
- Provide understanding about the concept of decision making & problem solving.
- Provide understanding about the concept of team and its functioning.
- Provide understanding about the concept and importance of Social service.

Course Outcomes (COs)

The Course Outcomes of this course are as follows:

CO1: Understand the basic concept of NCC.

CO2: Respect the diversity of different Indian culture.

CO3: Practice togetherness, team work and empathy in all walks of their life.

CO4: Do their own self-analysis and will work out to overcome their weakness for better performance in all aspects of life.

CO5: Critically think and analyze.

SEMESTER – IV

MJC-6 (T): Organic Chemistry: Compounds with Oxygen Containing Functional Groups (T)

Course Outcomes (COs)

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

CO-1: Preparation, properties and reactions of compounds with oxygen containing functional groups.

CO-2: To draw plausible mechanisms for reactions involving these functional groups.

CO-3: The knowledge of various named organic reaction involving associated with these functional groups.

CO-4: Chemistry of epoxides.

CO-5: The detection of O-containing functional groups like alcohols, phenols, carbonyl and carboxylic acid groups.

CO-6: The preparations of various organic compounds by functional group transformations and other common organic reactions.

CO-7: The green practices in Organic syntheses.

SEMESTER – IV

MJC-6 (P): Organic Chemistry: Compounds with Oxygen Containing Functional Groups (P)

Course Outcomes (COs)

When the students will finish this practical course, they will be skilled in:

CO-1: Acetylation and benzoylation of various functional groups present in organic compounds.

CO-2: Oxime formation, hydrazine formation, semi-carbazone formation, iodoform test and in the bromination of phenols.

CO-3: Oxidation of alcohols and reduction of nitro compounds.

CO-4: Aldol Condensation by conventional and green methods.

SEMESTER – IV

MJC-7: Physical Chemistry: Phase Equilibria, Conductance and Electrochemical Cells (T)

Course Outcomes (COs)

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

CO-1: The degree of ionization, pH and salt hydrolysis.

CO-2: The different types of Buffer solutions.

CO-3: The concepts of solubility product.

CO-4: The conductivity, specific conductivity, equivalent conductivity and molar conductivity, application of conductance measurement in determining various physical parameters.

CO-5: The standard electrode potential of half cells and calculate the EMF of a cell using Nernst equation.

CO-6: EMF measurements in determining various parameters like free energy, enthalpy, entropy, equilibrium constants, etc.

CO-7: The concentration cells with and without transference.

CO-8: The principle of potentiometric titrations.

SEMESTER – V

MJC-8 (T): Co-ordination Chemistry (T)

Course Outcomes (COs)

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

CO-1: Ligand, denticity of ligands, chelates, coordination number and nomenclature coordination number and nomenclature coordination of compounds.

CO-2: Isomerism in coordination compounds.

CO-3: Valence Bond Theory to predict the structure and magnetic behavior of metal complexes.

CO-4: pairing energy, CFSE and its effects, high spin and low spin complexes.

CO-5: Magnetic properties and colour of complexes on the basis of Crystal Field Theory.

CO-6: Properties of transition metal complexes, variable oxidation states, colours, magnetic and catalytic properties.

SEMESTER – V

MJC-8 (P): Co-ordination Chemistry (P)

Course Outcomes (COs)

After completion of this practical course, students will be skilled in:

CO-1: Preparation of complex compounds.

CO-2: Complexometric titrations and colorimetric analysis.

SEMESTER – V

MJC-9 (T): Polynuclear hydrocarbons, nitrogen containing compounds, heterocyclic compounds, alkaloids and terpenoids (T)

Course Outcomes (COs)

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

CO-1: The chemistry of polynuclear hydrocarbons.

CO-2: The named reactions related to amines nitriles, isonitriles and diazo compounds.

CO-3: The chemistry of some common heterocyclic compounds.

CO-4: The general methods involved in structural elucidation of alkaloids and terpenoids.

SEMESTER – VI

MJC-10 (T): Colligative Properties of Dilute Solutions, Chemical Kinetics and Photochemistry (T)

Course Outcomes (COs)

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

CO-1: Colligative properties of dilute solutions and determination of these properties.

CO-2: Abnormal colligative properties and molar mass.

CO-3: Azeotropes, maximum and minimum boiling azeotropic mixture.

CO-4: Kinetics of simple and complex reactions.

CO-5: Jablonski diagram and laws of photochemistry.

SEMESTER – VI

MJC-10 (P): Physical Chemistry: Colligative Properties of Dilute Solutions and Chemical Kinetics (P)

Course Outcomes (COs)

After completion of the practical course, students will be skilled in:

CO-1: Determination of molecular mass by elevation in boiling point and depression in freezing point methods.

CO-2: Determination of the velocity constants of hydrolysis of esters and inversion of cane sugar.

SEMESTER – VI

MJC-11: Organic Chemistry: Biomolecules (T)

Course Outcomes (COs)

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

CO-1: Genetic materials involved in living biosystems.

CO-2: Physicochemical properties of amino acids, peptides and proteins.

CO-3: Enzymes and their activity as well as some basic idea about lipids.

CO-4: Basics of energetics in biosystems and introduction to some synthetic and naturally occurring pharmaceuticals.

SEMESTER – VI

MJC-11: Organic Chemistry: Biomolecules (P)

Course Outcomes (COs)

After completion of this practical course, students will be skilled in:

CO-1: Tests of amino acids and proteins.

CO-2: Experiments related to enzymes, oils and fats.

SEMESTER – VI

MJC-12 (T): Physical Chemistry: Quantum Chemistry & Spectroscopy (T)

Course Outcomes (COs)

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

CO-1: The postulates of quantum mechanics, Schrodinger's wave education and its applications.

CO-2: The concepts related to electronic and rotational spectra.

CO-3: The concepts related to vibrational and Raman spectra.

SEMESTER – VII

MJC-13: Inorganic Chemistry: Organometallic Chemistry, Symmetry and Group Theory (T)

Course Outcomes (COs)

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

CO-1: Nomenclature and classification of organometallic compounds.

CO-2: Properties of metal carbonyls including their structures.

CO-3: Methods of preparation of Organometallics.

CO-4: Concept of symmetry and group theory.

SEMESTER – VII

MJC-15: Organic Chemistry: Spectroscopy (T)

Course Outcomes (COs)

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

CO-1: Different types of electronic transitions in organic molecules.

CO-2: The principles related to ultraviolet spectroscopy.

CO-3: Different types of vibrations in organic molecules and the principles related to infrared spectroscopy.

CO-4: The nuclear spin, shielding and deshielding effects and the principles of NMR.

CO-5: The principles of ESR spectroscopy.

SEMESTER – VIII

MJC-16 (T): Analytical Methods in Chemistry (T)

Course Outcomes (COs)

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

CO-1: Understand accuracy and precision.

CO-2: Develop methods of analysis for different samples independently.

CO-3: Test contaminated water samples.

CO-4: Understand basic principle of instrument like Flame Photometer, UV-vis spectrophotometer.

CO-5: Learn separation of analytes by chromatography.

CO-6: Apply knowledge of geometrical isomers and keto-enol tautomers to analysis.

CO-7: Determine composition of soil.

CO-8: Estimate macronutrients using Flame Photometry.

SEMESTER – III

MIC-3 (T): Hydrocarbons & Chemistry in everyday life

Course Outcomes (COs)

After completion of this course, students will be able to understand:

CO-1: Chemistry of hydrocarbons.

CO-2: Applications of Chemistry in everyday life.

SEMESTER – VI

MIC-4: Physical Chemistry: Chemical Thermodynamics and its Applications (T)

Course Outcomes (COs)

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

CO-1: Various thermodynamic terms.

CO-2: Various enthalpies of transformations and Kirchoff's law.

CO-3: Entropy changes, Gibbs free energy change, spontaneous and non- spontaneous processes.

CO-4: Second law of thermodynamics.

SEMESTER – V

MIC-5 (P): Chemical Thermodynamics and its Applications (P)

Course Outcomes (COs)

After completion of this practical course, students will be skilled in determining:

CO-1: Different types of enthalpy changes.

CO-2: The heat capacity of calorimeter.

SEMESTER – V

MIC-6 (T): Inorganic Chemistry: s-, p- and d-block elements (T)

Course Outcomes (COs)

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

CO-1: Different oxidation states of elements with their relative stability and complex forming properties.

CO-2: The ring, cage and polymers of B, Si & P.

CO-3: To carry out the preparation of inorganic compounds.

CO-4: The important properties of transition metals such as their oxidation states, colour, magnetic and spectral, use of Latimer diagrams in identifying oxidizing, reducing and disproportionating species.

CO-5: The concepts related with noble gases, their compounds, shapes, properties and applications.

SEMESTER – VI

MIC-7 (P): Qualitative Analysis of Inorganic Salt Mixture Containing Four Radicals (P)

Course Outcomes (COs)

After completion of this practical course students will be skilled in:

CO-1: Identification of basic radicals from known and unknown salts.

CO-2: Identification of acid radicals from known and unknown salts.

SEMESTER – VI

MIC-8 (T): Organic Chemistry: Compounds with Oxygen Containing Functional Groups (T)

Course Outcomes (COs)

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

CO-1: Preparation, properties and reactions of compounds with oxygen containing functional groups.

CO-2: To draw plausible mechanisms for reactions involving these functional groups.

CO-3: The knowledge of various named organic reaction involving associated with these functional groups.

CO-4: Chemistry of epoxides.

CO-5: The detection of O-containing functional groups like alcohols, phenols, carbonyl and carboxylic acid groups.

CO-6: The preparation of various organic compounds by functional group transformations and other common organic reactions.

CO-7: The green practices in Organic syntheses.

SEMESTER – VII

MIC-9 (P): Organic Chemistry: Identification of Oxygen Containing Functional Groups (P)

Course Outcomes (COs)

When the students will finish this practical course, they will be skilled in:

CO-1: Acetylation and benzoylation of various functional groups present in organic compounds.

CO-2: Oxime formation, hydrazine formation, semi-carbazone formation, iodoform test and in the bromination of phenols.

CO-3: Oxidation of alcohols and reduction of nitro compounds.

CO-4: Aldol Condensation by conventional and green methods.

SEMESTER – VII

MIC-9 (T): Colligative Properties of Dilute Solutions, Chemical Kinetics and Photochemistry (T)

Course Outcomes (COs)

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

CO-1: Colligative properties of dilute solutions and determination of these properties.

CO-2: Abnormal colligative properties and molar mass.

CO-3: Azeotropes, maximum and minimum boiling azeotropic mixture.

CO-4: Kinetics of simple and complex reactions.

CO-5: Jablonski diagram and laws of photochemistry.

SEMESTER – VIII

MIC-10: Physical Chemistry: Phase Equilibria, Conductance and Electrochemical Cells (T)

Course Outcomes (COs)

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

CO-1: The degree of ionization, pH and salt hydrolysis.

CO-2: The different types of Buffer solutions.

CO-3: The concepts of solubility product.

CO-4: The conductivity, specific conductivity, equivalent conductivity and molar conductivity, application of conductance measurement in determining various physical parameters.

CO-5: The standard electrode potential of half cells and calculate the EMF of a cell using Nernst equation.

CO-6: EMF measurements in determining various parameters like free energy, enthalpy, entropy, equilibrium constants, etc.

CO-7: The concentration cells with and without transference.

CO-8: The principle of potentiometric titrations.

SEMESTER – III

MDC-3 (T): Chemistry in everyday life

Course Outcomes (COs)

After completion of this course, students will be able to understand:

CO-1: Chemistry of hydrocarbons.

CO-2: Applications of Chemistry in everyday life.

SEMESTER – III

MDC-3 (P): Qualitative Analysis of Inorganic Salt Mixture Containing Four Radicals (P)

Course Outcomes (COs)

After the end of this practical course students will be skilled in:

CO-1: Identification of basic radicals from Known and unknown salts.

CO-2: Identification of acid radicals from Known and unknown salts.