



Department of Chemistry

B.Sc. Chemistry

S.No.	Course Code	Course Name	Course Outcomes
SEMESTER - I			
1.	21UTAL11	பொதுத்தமிழ் - I	<p>C01 [K1]: நவீன இலக்கியவகைமைகளை அடையாளம் காண்பர்.</p> <p>C02 [K2]: மொழி இலக்கண அறிவினைப் புரிந்துகொண்டுபிழை இன்றி எழுதும் திறன் பெறுவர்.</p> <p>C03 [K3]: இக்கால இலக்கியங்களின் கருத்தம்சங்களைத்ம் வாழ்நிலையோடு பொருத்திப்பார்ப்பர்.</p> <p>C04 [K5]: நவீன இலக்கியங்கள் படைப்பதற்கு அடிப்படையாக அமைந்த முறைமைகுறித்து மதிப்பீடு செய்து அவற்றை விமர்சிப்பர்.</p> <p>C05 [K6]: உலகளாவிய கவிதைநாடகப் படைப்புகளைக் கற்றுப் படைப்பர்.</p>
2.	21UENL11	Communicative English - I	<p>C01 [K1]: relate and state ideas by reading and listening to simple recorded conversations and fables</p> <p>C02 [K2]: demonstrate communicative skills through simple Descriptions, Requests and Instructions</p> <p>C03 [K3]: apply knowledge of word power and grammar rules in Formal and Informal letter writings</p> <p>C04 [K4]: analyze fairy tales and folk tales to develop language skills through literature</p> <p>C05 [K6]: construct grammatically correct and meaningful simple sentences in English.</p>

CRITERION - I



S.No.	Course Code	Course Name	Course Outcomes
3.	21UCHC11	Core Course - I: General Chemistry - I	<p>CO1 [K1]: recognize the IUPAC nomenclature and bonding of organic compounds, periodic properties, position of hydrogen and s-block elements in the periodic table and metallurgical processes</p> <p>CO2 [K2]: outline classification of organic compounds, atomic structure, properties of compounds of s – block elements and metallurgy</p> <p>CO3 [K3]: determine the name of organic compounds, stability of reaction intermediates, variation of periodic properties of hydrogen and s-block elements and extraction of metals</p> <p>CO4 [K4]: distinguish classification, hybridization and geometry of organic compounds, properties of hydrides and compounds of s-block elements and basic metallurgical operations</p> <p>CO5 [K4]: discriminate the influence of electronic effects, principles governing electron filling, anomalous behavior of s-block elements and general methods involved in the extraction of metals.</p>



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4.	21UCHC1P	Core Course - II: Practical: Organic And Inorganic Chemistry	C01 [K2]: demonstrate crystallization of organic compounds, preparation of solutions having different strengths and volumetric analysis C02 [K3]: determine purity of organic compound, crystallization and amount of inorganic substances by quantitative analysis C03 [K4]: analyse physical constants and mixture of inorganic compounds quantitatively by different volumetric methods C04 [K5]: predict boiling point by capillary method and molarity and normality of solutions C05 [K6]: perform purification by crystallization, melting and boiling point of organic compounds and estimation of inorganic compounds.
5.	21UCHA11	Allied Course - I: Mathematics - I	C01 [K2]: express the relation between roots and coefficients of polynomial equations C02 [K2]: calculate the derivative, integral, Laplace transform of functions C03 [K3]: solve algebraic and transcendental equations numerically C04 [K4]: investigate homogeneous function and Euler's theorem C05 [K5]: determine the appropriate Fourier series expansion for functions.



S.No.	Course Code	Course Name	Course Outcomes
6.	21UESR11	Ability Enhancement Compulsory Course - I: Environmental Studies	<p>C01 [K1]: recognize the importance of environment and role of Individuals in its protection</p> <p>C02 [K2]: explain the key concepts of Ecosystem, Food Web and Bio geochemical</p> <p>C03 [K3]: apply the right measures for the sustainable use of natural resources</p> <p>C04 [K4]: analyse the ethical, cross-cultural, and historical context of environmental issues and the links between Human and Natural Systems</p> <p>C05 [K4]: examine the impact of human action on the biological environment.</p>
7.	21UCHS11	Skill Enhancement Course - I: Science Communication And Popularization	<p>C01 [K1]: identify the basic ideas and skills on science communications and internet resources</p> <p>C02 [K2]: illustrate science outreach through internet, social media and useful web media</p> <p>C03 [K2]: demonstrate science communication by visual media, internet, talks and public sensitization</p> <p>C04 [K3]: present popular science talks and role of science and technology in human life</p> <p>C05 [K4]: analyse science communication and popularization by different communication media.</p>
SEMESTER - II			



S.No.	Course Code	Course Name	Course Outcomes
8.	21UTAL21	பொதுத்தமிழ் - II	<p>C01 [K1]: பல்வேறுசமயம் சார்ந்த இலக்கியவரலாற்றினை அறிவர்.</p> <p>C02 [K2]: இறை உருவங்களையும் புராணக்கருத்துக்களையும் கூறுவர்.</p> <p>C03 [K3]: சமயப்பாடல்களின் அமைப்பினையும் நோக்கத்தினையும் தெளிவாக விளக்குவர்.</p> <p>C04 [K4]: தமிழ்ச் சிறுகதைகளின் பொருண்மைகளைப்பாடுபடுத்துவர்.</p> <p>C05 [K4]: சொல்லிலக்கணத்தைப் புரிந்துகொண்டு பிழையின்றி எழுதும் திறனைப் பெறுவர்.</p>
9.	21UENL21	Communicative English - II	<p>C01 [K1]: relate and state ideas by reading and listening to recorded interviews and news</p> <p>C02 [K2]: demonstrate effective speaking skills by offering suggestions, seeking permission and reporting ongoing activities</p> <p>C03 [K3]: apply knowledge of word power and grammar rules through proverb expansion and paragraph writings</p> <p>C04 [K4]: analyze simple poems and short stories to develop language skills through literature</p> <p>C05 [K6]: construct grammatically correct and logically coherent paragraphs.</p>



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10.	21UCHC21	Core Course - III: General Chemistry - II	<p>C01 [K1]: describe the concepts of aliphatic and alicyclic compounds, states of matter, chemical equilibrium and kinetics of the reaction</p> <p>C02 [K2]: illustrate gas laws, physical properties of liquids, principles and applications of chemical equilibrium and rate of reaction for decomposition reaction</p> <p>C03 [K3]: present preparation and properties of organic compounds, behavior of gases and liquids, application of chemical equilibrium and order of the reaction</p> <p>C04 [K4]: distinguish organic compounds, states of matter, equilibrium constants and rate of the reaction</p> <p>C05 [K4]: compare the properties of organic compounds, gases, liquids, order of reaction through various methods.</p>
11.	21UCHC2P	Core Course - IV: Practical: Organic And Physical Chemistry	<p>C01 [K2]: infer physical constants and preparation of organic compounds</p> <p>C02 [K3]: determine surface tension, viscosity, pH and synthetic route for the preparation of organic compounds</p> <p>C03 [K4]: analyse effect of pH by adding acid or base and observe the yield of synthesized organic compounds</p> <p>C04 [K4]: employ suitable method for the synthesis of organic compounds and knowledge of physical constant for their estimation</p> <p>C05 [K5]: measure the surface tension, pH and viscosity of given solution.</p>



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12.	21UCHA21	Allied Course - II: Mathematics - II	<p>C01 [K2]: indicate the binomial series representation of functions and the exponential series</p> <p>C02 [K2]: explain gradient of a scalar valued function, divergence and curl of a vector valued function and its properties, rank of a matrix</p> <p>C03 [K3]: compute inverse of a matrix using Cayley-Hamilton theorem, eigen values and eigen vectors of a square matrix</p> <p>C04 [K4]: appraise equivalent definitions of a group, properties of a group</p> <p>C05 [K5]: determine the mathematical function that has the best fit to a series of data points.</p>
13.	21UVED21	Ability Enhancement Compulsory Course - II: Value Education	<p>C01 [K1]: identify the basic human values and ethics necessary for harmonious human relationship</p> <p>C02 [K2]: explain the significance of social values and religious tolerance to live in peace</p> <p>C03 [K3]: articulate the life-changing principles of brotherhood, honesty, loyalty and community solidarity</p> <p>C04 [K4]: analyse emotional, social, spiritual attribute to acquire well balanced personality</p> <p>C05 [K4]: examine the importance of harmonious living in the multi-cultural pluralistic society.</p>



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14.	21UCHS21	Skill Enhancement Course - II: Biofertilizers	C01 [K1]: outline types, production and field application of bio fertilizers C02 [K2]: explain nitrogen fixing microorganisms, soil fertility and organic farming C03 [K3]: make use of the knowledge of bio fertilizers and soil fertility in organic farming C04 [K4]: classify the types of nitrogen fixing and phosphate solubilizing microorganism, methods of making, biogas, bio compost and vermicomposting C05 [K4]: examine the bio fertilizers in rice and crop cultivation.
15.	21UDMG21	Disaster Management	C01 [K1]: outline the causes and impact of disasters C02 [K2]: explain the features of national policy on disaster management C03 [K3]: present the issues in rehabilitation C04 [K4]: classify the mitigation measures C05 [K5]: assess the role of the agencies for disaster management.
SEMESTER - III			
16.	21UTAL31	பொதுத்தமிழ் - III	C01 [K1]: காப்பியங்களில் கூறப்பட்டுள்ளவாழ்வியல் நெறிகளாகியஅறம், பொருள், இன்பம்,வீடுஆகியவற்றைப் பற்றிஅறிவர். C02 [K2]: செய்யுட்களில் இடம்பெறும் அணிநலன்களைக் காண்பர். C03 [K3]: யாப்புமரபைக் கற்றுணர்ந்துகவிதையை இனம் காணும் ஆற்றலைப் பெறுவர். C04 [K4]: சிற்றிலக்கியங்கள் உணர்த்தும் சமூகத்தையும் விழுமியத்தையும் விவாதிக்கும் திறனைப் பெறுவர். C05 [K4]: சமயங்கள் உணர்த்தும் அறக்கருத்துக்களைப் பகுப்பாய்வுசெய்வர்.



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17.	21UENL31	Communicative English - III	<p>C01 [K1]: relate and state ideas by reading simple poems and listening telephonic conversations</p> <p>C02 [K2]: demonstrate effective speaking skills by making speech presentations, discussing television programmes and sports events</p> <p>C03 [K3]: apply knowledge of word power and grammar rules through diary writing, dialogue writing and writing newspaper reports</p> <p>C04 [K4]: analyze short fiction to develop language skills through literature</p> <p>C05 [K6]: construct grammatically correct and logically coherent essays on global problems and environmental issues.</p>
18.	21UCHC31	Core Course - V: General Chemistry – III	<p>C01 [K1]: define the terms of colloids, error analysis, photochemistry and phase equilibrium</p> <p>C02 [K2]: explain reactions of aromatic compounds, properties of colloids and laws of photochemistry</p> <p>C03 [K3]: determine orientation effect of substituent present in aromatic compounds, quantum yield of photochemical reactions, the properties of phase equilibria</p> <p>C04 [K4]: distinguish activating and deactivating substituent, types of catalyst, adsorption and properties of colloids</p> <p>C05 [K4]: deduce stability of aromatic compounds by Huckel's rule, types of photophysical processes and systems with congruent and incongruent melting point.</p>



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19.	21UCHC3P	Core Course - VI: Practical: Analytical Chemistry	C01 [K2]: illustrate about the physical and chemical parameters of water such as hardness, alkalinity and dissolved oxygen content C02 [K2]: outline the terms of corrosion, pH, micelles, surfactants and polymers C03 [K3]: determine the molecular weight of polymers by using Ostwald viscometer and critical micelle concentration by conductivity measurement C04 [K4]: examine Winkler, Ostwald viscometer and weight loss method C05 [K5]: evaluate rate of corrosion, hardness, alkalinity, strength and dissolved oxygen of the given samples.
20.	21UCHA31	Allied Course - III: Physics - I	C01 [K1]: outline the basic concepts of properties of matter, heat transmission, geometrical and physical optics C02 [K2]: explain the basic concepts of properties of matter, heat transmission, geometrical and physical optics C03 [K3]: choose appropriate formulae to solve problems C04 [K4]: analyze the physical and optical parameters of materials C05 [K4]: examine the physical and optical parameters of materials.
21.	21UCHA3P	Allied Course - III: Practical: Physics - I	C01 [K1]: identify the concepts of physics underlying in the experiments C02 [K2]: demonstrate the concepts of physics underlying in the experiments C03 [K3]: calculate the physical parameters of a matter/electrical circuits from the experimental data C04 [K4]: analyze the experimental results C05 [K5]: evaluate the physical parameters of a matter/electrical circuits.

CRITERION - I



S.No.	Course Code	Course Name	Course Outcomes
22.	21UCHN31	Non-Major Elective Course - I: Chemistry In Day To Day Life	C01 [K1]: recognize the significance of chemistry involved in polymers, fuels, metals & non-metals C02 [K2]: examine the basic idea about the significance of polymers C03 [K3]: determine the hardness of water C04 [K3]: formulate the quality of tooth paste and tooth powder C05 [K4]: distinguish the differences between paints and varnishes.
23.	21UCHS31	Skill Enhancement Course - III: Computer Application In Chemistry	C01 [K1]: detail on components of computer, internet access, MS-Word and MS-Excel C02 [K1]: locate advanced resources for accessing scholarly literature from internet C03 [K2]: illustrate the various types of computers and various operations performed in MS-Word and MS-Excel C04 [K3]: apply the basic operations of spreadsheet applications and MS-Word to draw graphs and charts, tools for drawing the chemical structure C05 [K4]: examine various operations of MS-Word and MS-Excel for documentation.
SEMESTER - IV			



S.No.	Course Code	Course Name	Course Outcomes
24.	21UTAL41	பொதுத்தமிழ் - IV	<p>C01 [K1]: புதின இலக்கியவகைகளை அடையாளம் காண்பர்</p> <p>C02 [K2]: சங்க இலக்கியங்களில் உள்ள அறக்கருத்துக்களை எடுத்துரைப்பர்</p> <p>C03 [K3]: அக, புற இலக்கணங்களைக் கற்பர்</p> <p>C04 [K4]: சங்க இலக்கியங்களின் வாயிலாக மக்களின் வாழ்க்கை முறையினைப் பாகுபடுத்துவர்</p> <p>C05 [K5]: பண்டைய தமிழ் இலக்கிய ஆளுமைகளை மதிப்பிடுவர்.</p>
25.	21UENL41	Communicative English - IV	<p>C01 [K1]: relate and state ideas by listening to lectures and reading narratives</p> <p>C02 [K2]: demonstrate effective speaking skills through group discussions and answering interview questions</p> <p>C03 [K3]: apply knowledge of word power and grammar rules through drafting Memorandum, Minutes of the meetings and Agenda</p> <p>C04 [K4]: analyze tales from Shakespeare to develop language skills through literature</p> <p>C05 [K6]: construct grammatically correct and meaningful sentences for Covering letters and Resume Writing and thereby preparing students towards employability.</p>



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26.	21UCHC41	Core Course - VII: General Chemistry - IV	<p>CO1 [K1]: recognize the nucleophilic substitution reaction, condition of precipitation, properties of p-block elements and theories of acid and bases</p> <p>CO2 [K2]: explain the mechanism of organic reaction, preparation and properties of compounds of p-block elements and the concept of pH</p> <p>CO3 [K3]: present the addition and elimination reactions, gravimetric analysis, chemistry of oxoacids and reaction in non-aqueous solvents</p> <p>CO4 [K4]: discriminate S_N^1, S_N^2 and S_N^i mechanism, allotropic forms of elements and concepts of acids and bases</p> <p>CO5 [K4]: compare reactivities of different halides, the relative strength of acids and bases.</p>
27.	21UCHC4P	Core Course - VIII: Practical: Inorganic Semimicro Qualitative Analysis	<p>CO1 [K1]: arrange the cations into groups based on common ion effect and solubility product principles</p> <p>CO2 [K2]: specify the elimination of interfering anions by using suitable reagents</p> <p>CO3 [K3]: perform anion and cation analysis by following systematic procedure of semi-micro qualitative analysis</p> <p>CO4 [K4]: separate cations into different groups and carry out group analysis to confirm the cation</p> <p>CO5 [K5]: judge anions and cations present in the mixture using selective reagents.</p>



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28.	21UCHA41	Allied Course - IV: Physics - II	C01 [K1]: outline the basic concepts of relativity, atomic and crystal physics, analog and digital electronics C02 [K2]: explain the basic concepts of relativity, atomic and crystal physics, analog and digital electronics C03 [K3]: choose appropriate formulae to solve problems C04 [K4]: analyze the applicability of special theory of relativity, physical parameters of atoms, crystals, and behavior of electronic circuits C05 [K4]: inspect the applicability of special theory of relativity, physical parameters of atoms, crystals, and behavior of electronic circuits.
29.	21UCHA4P	Allied Course - IV: Practical: Physics - II	C01 [K1]: identify the concepts of physics underlying in the experiments C02 [K2]: demonstrate the concepts of physics underlying in the experiments C03 [K3]: calculate the physical parameters of a matter/electronic circuits from the experimental data C04 [K4]: analyze the experimental results C05 [K5]: evaluate the physical parameters of a matter/electronic circuits.
30.	21UCHSM41	Self-Paced Learning (Swayam Course): Introductory Organic Chemistry - I	C01 [K1]: describe the electronic structure and bonding in organic compounds C02 [K2]: explain the acid base concepts in organic compounds C03 [K3]: employ the concept of aromaticity in hydrocarbons C04 [K4]: analyse the conformations of alkanes C05 [K5]: perform the addition, substitution and elimination reactions in organic compounds.



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31.	21UCHSM42	Self-Paced Learning (Swayam Course): Quantitative Methods In Chemistry	C01 [K1]: describe the basic concepts of chemical stoichiometry, measurements and various analytical techniques C02 [K2]: explain the various definitions in chemical stoichiometry and measurements. C03 [K3]: employ softwares to linear and non-linear regression C04 [K4]: discriminate rate theory and plate theory C05 [K5]: appraise the various analytical separation techniques.
32.	21UCHN41	Non-Major Elective Course - II: Industrial Chemistry	C01 [K1]: recognize the significance of chemistry involved in polymers, fuels, cement, glass and oil C02 [K2]: explain processing of fuels, manufacturing of cement and glass and preparation of polymers C03 [K2]: explain processing of oils and fats, manufacturing of cement, glass and preparation of polymers C04 [K3]: report calorific value, saponification value, iodine value and setting of cement C05 [K4]: classify fuels, oils and fats, glasses and polymers.
33.	21UCHS41	Skill Enhancement Course - IV: Fermentation Science And Technology	C01 [K1]: identify enzymes and microbes involved in food fermentation C02 [K2]: explain various methods for fermentation and microbial growth C03 [K2]: illustrate different experimental techniques for the production of fermented food products C04 [K3]: select suitable microbial culture for the fermentation of foods C05 [K4]: analyse the different aspects of the fermentation and fermented foods.



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34.		Part V – Extension	<p>C01 [K1]: recognize the importance of community service through training and education</p> <p>C02 [K2]: interpret ecological concerns, consumer rights, gender issues & legal protection</p> <p>C03 [K3]: develop team spirit, verbal/non verbal communication and organizational ethics by participating in community service</p> <p>C04 [K4]: examine the necessity of professional skills & community-oriented services for a holistic development</p> <p>C05 [K6]: create awareness on human rights, legal rights, First Aid, Physical fitness and wellbeing.</p>
SEMESTER - V			
35.	21UCHC51	Core Course - IX: Organic Chemistry - I	<p>C01 [K1]: describe the reactions of carbonyl, nitrogen and heterocyclic compounds</p> <p>C02 [K2]: explain the stereochemistry of aliphatic and cyclic compounds and rearrangement reactions</p> <p>C03 [K3]: apply oxidizing and reducing agents in the organic synthesis and do conformational analysis in simple compound such as ethane, butane, cyclohexane and substituted cyclohexane</p> <p>C04 [K4]: examine the primary, secondary and tertiary structure of proteins</p> <p>C05 [K4]: compare the reactivity of acids, basicity of amines and optical activity in biphenyls, allenes.</p>



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36.	21UCHC52	Core Course - X: Inorganic Chemistry - I	<p>C01 [K1]: outline the basic concepts of d-block elements, f-block elements and coordination compounds</p> <p>C02 [K2]: express the various properties of transition elements, inner-transition elements and coordination compounds</p> <p>C03 [K3]: determine the crystal field stabilization energy and magnetic moments of the d^n metal complexes in octahedral and tetrahedral geometry</p> <p>C04 [K4]: examine the various theories of coordination compound, chemistry of various compounds of transition metal compounds</p> <p>C05 [K5]: predict the stability of oxidation states of various d-block elements, geometry and hybridization of various co-ordination compounds.</p>
37.	21UCHC5P	Core Course - XI: Practical: Physical Chemistry - I	<p>C01 [K1]: describe the basic concepts of thermochemistry, phase equilibrium and colligative properties</p> <p>C02 [K2]: infer physical constant by carrying out physical chemistry experiments</p> <p>C03 [K3]: calculate heat of solution and molecular weight of various chemical compounds</p> <p>C04 [K4]: construct the phase diagram for simple eutectic and compound formation</p> <p>C05 [K4]: examine molecular weight of the chemical compound by rasi and transition temperature methods.</p>



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38.	21UCHC5Q	Core Course - XII: Practical: Organic Analysis And Estimation	C01 [K2]: explain the aromatic and aliphatic nature of the organic compound C02 [K2]: interpret the different functional group through the confirmation test and its derivative formation C03 [K3]: determine the concentration of phenol, aniline by applying the principles of iodometric method C04 [K4]: differentiate the primary, secondary and tertiary nature of nitrogen through the confirmatory test C05 [K5]: examine the amount of organic compound by volumetric method.
39.	21UCHO51	Major Elective Course - I: Electrochemistry	C01 [K1]: define the terms like conductance, specific conductance and transport number C02 [K2]: outline the basic concepts in the conductance measurements and emf of the solution C03 [K3]: formulate ΔH , ΔG and ΔS of a cell reaction C04 [K4]: classify the different types of electrodes and cells C05 [K5]: evaluate pH, solubility product and conductance of the given solution.



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40.	21UCHO52	Major Elective Course - I: Photo Chemistry	<p>C01 [K1]: define the terms like electronic state, photosynthesis and excited state energy levels</p> <p>C02 [K2]: interpret the basic concepts in in electronic excitation, singlet and triplet states</p> <p>C03 [K3]: present the mechanism of photo physical and photo chemical process</p> <p>C04 [K4]: discriminate radiative and non-radiative transitions and types of photochemical reactions</p> <p>C05 [K5]: resolve the mechanism involved in photophysical pathways and photochemical reactions.</p>
41.	21UCHO53	Major Elective Course - I: Geochemistry	<p>C01 [K1]: describe the origin of elements and organic compounds through carbon cycle</p> <p>C02 [K2]: illustrate the origin of life from organic matter by various processes</p> <p>C03 [K3]: apply the basic concepts of geochemistry to understand the evolution of life and other organic matter</p> <p>C04 [K4]: analyse geochemical processes to understand the origin of material for life</p> <p>C05 [K5] : deduce different types of carbon cycles to enrich the knowledge in the formation of coal, petroleum, life and other organic matter.</p>



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42.	21UCH054	Major Elective Course - II: Bio Chemistry	<p>C01 [K1]: describe the fundamental macromolecules like lipids and amino acids enzymes</p> <p>C02 [K2]: classify various biological functions, mechanism and applications of macromolecules</p> <p>C03 [K3]: present the structure of proteins, nucleic acids and mechanism of enzyme action</p> <p>C04 [K4]: compare the structure, arrangement of atoms in each molecule</p> <p>C05 [K4]: analyze the structure, function of the molecule in bio system.</p>
43.	21UCH055	Major Elective Course - II: Environmental Chemistry	<p>C01 [K1]: recognize the composition of air, water and sources of pollution</p> <p>C02 [K2]: illustrate effects and sources accountable in the environmental pollution and their control</p> <p>C03 [K3]: present factors causing pollution and possible solution</p> <p>C04 [K4]: analyze contamination of air and water, water quality parameters and climate change</p> <p>C05 [K4]: discriminate the chemical reactions leading to the environmental issues.</p>



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44.	21UCH056	Major Elective Course - II: Nanochemistry	<p>C01 [K1]: recognize the fundamentals of nanoscience, properties, size, and mode of preparation and applications of nanoparticles</p> <p>C02 [K2]: demonstrate nanostructures, their classification and synthetic routes</p> <p>C03 [K3]: determine suitable synthetic approach for the preparation of nanoparticles and their use</p> <p>C04 [K4]: classify nanomaterials and various synthetic techniques used for their synthesis</p> <p>C05 [K4]: analyze different characteristics life surface morphology, particle size etc. by instrumentation techniques.</p>
45.	21UCHS51	Skill Enhancement Course - V: Personality Development	<p>C01 [K1]: identify the concepts and principles of basic psychological skills, time management and critical thinking</p> <p>C02 [K2]: relate the psychological skills and critical thinking skills to their real life</p> <p>C03 [K3]: present stress management, mental models, and leadership qualities</p> <p>C04 [K4]: analyse human resources with improved leadership qualities</p> <p>C05 [K4]: distinguish the effective communication, decision making and problem solving skills.</p>



S.No.	Course Code	Course Name	Course Outcomes
46.	21UCHJ51	Internship	CO1 [K2]: demonstrate the depth of expertise in coherent area of chemistry CO2 [K3]: employ technical information using scientific communications, scientific operations and procedures CO3 [K3]: develop effective oral and written communication skills in the field of chemistry CO4 [K6]: develop hands on training experience and skill in chemistry CO5 [K6]: create awareness on logistics, economic and realities of functioning in a work environment.
SEMESTER - VI			
47.	21UCHC61	Core Course - XIII: Organic Chemistry - II	CO1 [K1]: detail the structure of natural products CO2 [K2]: interpret the structure of natural products and synthetic organic compounds through UV, IR, NMR and Mass spectroscopy CO3 [K3]: determine the stereochemistry of carbohydrate and structure of organic compounds by different spectroscopic techniques CO4 [K4]: classify alkaloids, terpenoids, carbohydrate and other industrially important compounds CO5 [K4]: differentiate structure and properties of organic compounds by qualitative methods and instrumentation techniques.



S.No.	Course Code	Course Name	Course Outcomes
48.	21UCHC62	Core Course - XIV: Inorganic Chemistry - II	<p>C01 [K1]: describe the basic concepts in bioinorganic, nuclear and solid state chemistry</p> <p>C02 [K2]: explain the various concepts of nuclear, radiation and solid state chemistry</p> <p>C03 [K3]: compute the concept of nuclear reaction and radioactivity in various fields like energy production, medicine, agriculture, industry, etc.</p> <p>C04 [K4]: discriminate the crystal structure of solids, the function and structure of biomolecules</p> <p>C05 [K5]: assess the impact of radioactivity, structure and defects in solids.</p>
49.	21UCHC63	Core Course - XV: Physical Chemistry	<p>C01 [K1]: describe the terms of thermodynamics, symmetry and quantum mechanics</p> <p>C02 [K2]: explain the basic principles, concepts of thermodynamics, quantum mechanics and group theory</p> <p>C03 [K3]: apply the fundamentals to derive the expression for various thermodynamic parameters</p> <p>C04 [K4]: classify the different types of thermodynamic process and groups</p> <p>C05 [K5]: deduce group multiplication table and postulates of quantum mechanics.</p>



S.No.	Course Code	Course Name	Course Outcomes
50.	21UCHC6P	Core Course - XVI: Practical: Physical Chemistry- II	C01 [K2]: express the basic concepts of thermochemistry, phase equilibrium and colligative properties C02 [K3]: employ the fundamentals involved in the simple eutectic, compound formation and transition temperature methods C03 [K4]: examine heat of solution of chemical compounds C04 [K5]: perform the phase diagram for simple eutectic and compound formation C05 [K6]: develop the skill and tricks in the physical chemistry practical.
51.	21UCHC6Q	Core Course - XVII: Practical: Gravimetry And Complex Preparation	C01 [K2]: estimate the amount of lead, barium, calcium, copper and nickel present in the given solution by gravimetrically C02 [K2]: Interpret the various reactions involved in the gravimetry and complex preparation C03 [K3]: apply theoretical aspects of in the gravimetry and complex preparation C04 [K4]: compare and contrast gravimetry and volumetry C05 [K5]: resolve various difficulties in gravimetry and complex preparation.



S.No.	Course Code	Course Name	Course Outcomes
52.	21UCHO61	Elective Course - III: Organometallic Chemistry And Biological Role Of Metals	<p>C01 [K1]: describe the basic concepts in organometallic and biological role of metals</p> <p>C02 [K2]: express the structure of metal carbonyls, metallocenes and role of metals in medicine</p> <p>C03 [K3]: develop knowledge in the toxicology of heavy metals and the concept of hapticity in electron counting</p> <p>C04 [K4]: analyze the chemistry behind organometallic compounds and the structure of inorganic polymers</p> <p>C05 [K4]: examine the role of organometallic catalysts in polymerization reactions and the metal ions in biological reactions.</p>
53.	21UCHO62	Major Elective Course - III: Analytical Chemistry	<p>C01 [K1]: identify the analytical techniques on spectroscopy method, thermal analysis and separation techniques</p> <p>C02 [K2]: relate the spectroscopic analytical techniques to the all relevant compounds (or) substances</p> <p>C03 [K3]: formulate the structure of the compounds by these studied analytic techniques</p> <p>C04 [K4]: analyze the functional groups present in the different compounds or substances</p> <p>C05 [K4]: distinguish the properties of the compounds or substances, nature of the solubility by analytical techniques.</p>



S.No.	Course Code	Course Name	Course Outcomes
54.	21UCHO63	Major Elective Course - III: Medicinal Chemistry	<p>C01 [K1]: identify the different types of drugs, hormones and vitamins</p> <p>C02 [K2]: substitute the biological action of drugs in the human body and physiological action of hormones in the human body</p> <p>C03 [K3]: report mechanism of drug action, structure and uses of medicines and diagnostic tests</p> <p>C04 [K4]: analyse types of drug action, uses of drugs and diagnosis of disease by chemical tests</p> <p>C05 [K4]: differentiate route of administration, physiological action and biological action of drugs.</p>
55.	21UCHS61	Enhancement Course - VI: Analytical Clinical Biochemistry	<p>C01 [K1]: identify the fundamental macromolecules like lipids and amino acids enzymes</p> <p>C02 [K2]: explain the work function of biomolecules and principle and applications of analytical techniques</p> <p>C03 [K3]: employ analytical tools to identify biomolecules for the diagnosis of disease</p> <p>C04 [K4]: compare the structure, composition and result of estimation and interpretation of result</p> <p>C05 [K4]: present analytical tools used in clinical biochemistry, gene therapy, properties of enzymes and analysis of blood and urine.</p>



S.No.	Course Code	Course Name	Course Outcomes
56.	21UBTA11/ 21UBYA11/ 21UPHA31	Allied Course - I: Chemistry - I	C01 [K1]: list out the types of adsorptions, chemical bonding and various kinds of oils and fats C02 [K2]: differentiate types of chemical bonding and photophysical processes C03 [K3]: present the concepts of adsorption, photochemistry, periodicity in properties and chemical bonding C04 [K4]: distinguish between soaps and detergents, oils and fats, photochemical and thermochemical reactions, absorption and adsorption C05 [K4]: analyze hybridization and structure of compounds and quality of soaps.
57.	21UBTA1P/ 21UBYA1P/ 21UPHA3P	Allied Course - I: Practical : Volumetric Analysis	C01 [K2]: estimate oxalic acid by acidimetric and permanganometric method C02 [K3]: choose suitable indicator for carrying out volumetric estimation C03 [K4]: apply acidimetric and alkalimetric method for the quantitative volumetric estimation of acids and bases C04 [K5]: measure quantitatively the amount of inorganic compound accurately with the help of colour change of the indicator C05 [K6]: plan various volumetric procedures for the estimation of any inorganic compounds.



S.No.	Course Code	Course Name	Course Outcomes
58.	21UBTA21/ 21UBYA21/ 21UPHA41	Allied Course - II: Chemistry - II	C01 [K1]: describe catalysis, terms in electrochemistry, nuclear reactions, types of polymers and dyes C02 [K2]: illustrate the fundamental concepts of electrochemistry and nuclear chemistry C03 [K3]: make use of the various concepts of acids, bases and theory of dyes C04 [K4]: compare nuclear fission and fusion, homogeneous and heterogeneous catalysts C05 [K4]: classify polymers and dyes based on structure and properties of different types of polymers and its application.
59.	21UBTA2P/ 21UBYA2P/ 21UPHA4P	Allied Course - II: Practical : Organic Analysis	C01 [K2]: recognize the analytical procedure to identify the given organic compounds C02 [K3]: determine the saturation/unsaturation nature of given organic compounds C03 [K4]: inspect the aliphatic/aromatic and nature of given organic compounds C04 [K5]: predict elements (other than C, H and O) present in the given compound C05 [K6]: perform systematic analysis and report the functional groups present in the given organic compound.

