Holy Cross College (Autonomous), Nagercoil

Kanyakumari District, Tamil Nadu.

Accredited with A^+ by NAAC - IV cycle – CGPA 3.35

Affiliated to

Manonmaniam Sundaranar University, Tirunelveli

Semester I - IV

POs, PSOs & COs

DEPARTMENT OF CHEMISTRY

2023-2026

(With effect from the academic year 2024-2025)

Programme Educational Objectives (PEOs)

PEOs	Upon completion of B.A/B.Sc. Degree Programme, the graduateswill be able to	Mapping with Mission
PEO1	apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.	**M1& M2**
PEO2	use practical knowledge for developing professional empowerment and entrepreneurship and societal services.	**M2, M3, M4 & M5**
PEO3	pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.	**M3, M4, M5 & M6**

Programme Outcomes (**POs**)

POs	Upon completion of B.Sc. Degree Programme, the graduates will be able to:	Mapping with PEOs
PO1	obtain comprehensive knowledge and skills to pursue higher studies in the relevant field of science.	**PEO1**
PO2	create innovative ideas to enhance entrepreneurial skills for economic independence.	**PEO2**
PO3	reflect upon green initiatives and take responsible steps to build a sustainable environment.	**PEO2**
PO4	enhance leadership qualities, team spirit and communication skills to face challenging competitive examinations for a better developmental career.	**PEO1 & PEO3**
PO5	communicate effectively and collaborate successfully with peers to become competent professionals.	**PEO2 & PEO3**
PO6	absorb ethical, moral and social values in personal and social life leading to highly cultured and civilized personality	**PEO2 & PEO3**
PO7	participate in learning activities throughout life, through self-paced and self-directed learning to improve knowledge and skills.	**PEO1 & PEO3**

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of B.Sc Chemistry programme, the graduates will be able to:	Mapping with POs
PSO - 1	understand the fundamentals, theories and principles of organic, inorganic and physical chemistry.	**PO1**
PSO - 2	analyze physical and chemical properties of chemical compounds and their uses.	**PO1& PO7**
PSO - 3	interpret the mechanism of various chemical reactions.	**PO3 &PO4**
PSO - 4	synthesize organic and inorganic compounds using classical and modern methods.	**PO2**
PSO - 5	design and carry out scientific experiments, record and interpret the results with accuracy	**PO1& PO4**
PSO - 6	use concepts, tools and techniques related to chemistry to other branches of science.	**PO5**
PSO - 7	develop skills in the safe-handling of chemicals and their usage in day today life.	**PO1&PO7**
PSO - 8	develop entrepreneurial skills, empowered to fulfil the professional requirement and become self-dependent.	**PO2& PO6**

Mapping of PO'S and PSO'S

POs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
PO1	S	S	S	S	S	S	S	S
PO2	S	S	M	M	S	S	M	S
PO3	M	M	M	S	S	S	S	S
PO4	S	S	S	M	M	S	M	M
PO5	S	M	M	M	S	S	S	S
PO6	M	M	M	M	S	S	S	S
PO7	S	S	S	S	S	S	S	S

Course Outcomes

SEMESTER – I

CORE COURSE – I : GENERAL CHEMISTRY – I

Course Code : CU231CC1

On the successful completion of the course, student will be able to:		
1	remember the atomic structure, periodic properties, bonding, electronic configuration and properties of compounds.	**K1**
2	understand and classify the elements in the periodic table, types of bonds, reaction intermediates, electronic effects in organic compounds and types of reagents.	**K2**
3	apply the theories to calculate energy of spectral transition, electronegativity, percentage ionic character and bond order.	**K3**
4	analyse the relationship existing between electronic configuration, bonding, geometry of molecules, structure reactivity and electronic effects	**K4**
5	evaluate the trends in periodic properties, assess the properties of elements, and explain hybridization in molecules, nature of H – bonding and organic reaction mechanisms.	**K5**

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate

SEMESTER – I

CORE LAB COURSE I : QUANTITATIVE INORGANIC ESTIMATION(TITRIMETRY) AND INORGANIC PREPARATIONS

Course Code : CU231CP1

On the successful completion of the course, student will be able to**:**		
1	explain the basic principles involved in titrimetric analysis and inorganic preparations.	**K1**
2	compare the methodologies of different titrimetric analysis.	**K2**
3	calculate the concentrations of unknown solutions in different ways and develop the skill to estimate the amount of a substance present in a given solution.	**K3**
4	assess the yield of different inorganic preparations and identify the end point of various titrations	**K4**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze

ELECTIVE COURSE I: BOTANY AND ZOOLOGY MAJOR
CHEMISTRY FOR BIOLOGICAL SCIENCES – I
Course Code : CU231EC1

On the successful completion of the course, student will be able to:		
1	remember the atomic structure, the preparation and uses of various compounds	**K1**
2	understand the efficiencies and uses of various drugs,fertilizers and fuels.	**K2**
3	explain and apply various theories behind osmosis, catalysis and chromatography	**K3**
4	differentiate the structure and uses of antibiotics, anaesthetics, antipyretics and artificial sugars.	**K4**
5	analyse various methods to separate chemical compounds	**K4**

K1 - Remember; K2 - Understand; K3 - Apply; K4 – Analyze

SEMESTER – I
ELECTIVE PRACTICAL I: CHEMISTRY PRACTICAL FOR BIOLOGICAL SCIENCES-VOLUMETRIC ANALYSIS
Course Code : CU231EP1

On the successful completion of the course, student will be able to:		
1	understand the principles of titrimetric methods.	**K1**
2	gain knowledge on the usage of standard flask, pipette and burette.	**K2**
3	design, carry out, record and interpret the results of various titrations and apply their skill in the estimation of various compounds.	**K3**
4	analyze the suitable indicators for various titrations	**K4**

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze

SEMESTER – I

NON MAJOR ELECTIVE NME I : FOOD CHEMISTRY

Course Code : CU231NM1

On the successful completion of the course, student will be able to:		
1	remember and recall the different types of adulterants in food, edible oils used in foods and beverages.	**K1**
2	understand the effect of chemicals in common food and their adverse impact on health.	**K2**
3	apply various methods to detect various adulterants in food and to determine the values of oils and fats.	**K3**
4	analyze the effects of contaminants and additives in food.	**K4**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze;

SEMESTER I

FOUNDATION COURSE: BASICS OF CHEMISTRY

Course Code : CU231FC1

On the successful completion of the course, student will be able to:		
1	remember the basic concepts of periodic classification, chemical bonding, nomenclature of organic compound, isomerism and state of matter.	**K1**
2	understand the periodic properties, types of bonding, hybridization, stereo isomerism, properties of matter and spectroscopy.	**K2**
3	apply the concepts of valence bond theory, hybridization, isomerism IUPAC nomenclature and spectroscopy to chemical compounds.	**K3**
4	analyze the periodic properties of elements, magnetic properties, characteristic of solids and types of spectroscopic techniques.	**K4**
5	evaluate quantum numbers and their significance and percentage of ionic character of compounds.	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze: **K5** – Evaluate

SEMESTER I

SPECIFIC VALUE ADDED COURSE – ARTICLES IN EVERY DAY LIFE

Course Code : CU231V01

On the successful completion of the course, student will be able to:		
1	know about oils, fats and soaps	**K1**
2	understand the methods to prepare some articles in daily use	**K2**
3	apply the prepared things in daily life	**K3**
4	remember the hazards of chemicals	**K2**
5	analyze and use the safety compounds for their use	**K4**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze

SEMESTER I

SPECIFIC VALUE-ADDED COURSE: POLYMER CHEMISTRY

Course Code: CU231V02

On the successful completion of the course, students will be able to:		
1.	to know about different polymers	**K1**
2.	understand the properties of polymers	**K2**
3.	use the methods and synthesis of polymers and plastics	**K3**
4.	analyse the properties and uses of polymers, plastics and resins	**K4**
5.	evaluate the types of polymers, methods of synthesis and applications	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** – Evaluate

SEMESTER I

SPECIFIC VALUE ADDED COURSE - CHEMISTRY OF COSMETICS

Course Code: CU231V03

On the successful completion of the course, students will be able to:		
1.	to know about different cosmetics like face creams, nailpolish, hair oil and soaps	**K1**
2.	understand the properties of different chemicals in cosmetics	**K2**
3.	predict the applications of cosmetics in daily life	**K3**
4.	analyse the properties and uses of different cosmetics	**K4**
5.	evaluate the hazards of different cosmetics	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER II

CORE COURSE II: GENERAL CHEMISTRY - II

Course Code : CU232CC1

On the successful completion of the course, students will be able to:		
1.	explain the concept of acids, bases and ionic equilibria; periodic properties of s and pblock elements, preparation and properties of aliphatic and aromatic hydrocarbons	**K1**
2.	discuss the periodic properties of s and p- block elements, reactions of aliphatic and aromatic hydrocarbons and strength of acids	**K2**
3.	classify hydrocarbons, types of reactions, acids and bases, examine the properties s and p-block elements, reaction mechanisms of aliphatic and aromatic hydrocarbons	**K3**

4.	explain theories of acids, bases and indicators, buffer action and important compounds of s-block elements	**K3**
5.	assess the application of acids, indicators, buffers, compounds of s and p- block elements and hydrocarbons	**K4**

K1 - Remember; **K2 -** Understand; **K3** – Apply; **K4**-Analyze

SEMESTER – II
CORE LAB COURSE II: ORGANIC ESTIMATION AND PREPARATION OF ORGANIC COMPOUNDS
Course Code : CU232CP1

On the successful completion of the course, student will be able to:		
1.	explain the basic principles involved in organic estimation	**K1**
2.	know the methods of preparing organic compounds.	**K2**
3.	assess the yield of different organic preparations	**K3**
4.	compare the methodologies in preparing various compounds	**K4**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4**-Analyse

SEMESTER – II
ELECTIVE COURSE II:
CHEMISTRY FOR BIOLOGICAL SCIENCES – II
Course Code : CU232EC1

On the successful completion of the course, student will be able to:		
1	remember the importance of amino acids and learn the . basic concepts of Ayurveda	**K1**
2	understand the importance of nucleic acids and vitamins	**K2**
3	know the biological functions of lipids, oils and fats	**K1**
4	understand the function and deficiency of metals in human system	**K2**
5	outline the various type of photochemical process.	**K3**

K1 - Remember; K2 - Understand; K3 - Apply

SEMESTER – II

ELECTIVE LAB COURSE II : SYSTEMATIC ANALYSIS OF ORGANIC COMPOUNDS

Course Code : CU232EP1

On the successful completion of the course, student will be able to:		
1	learn to test the organic substances	**K1**
2	identify the functional group present in the organic compounds	**K2**
3	detect the elements present	**K3**
4	distinguish between aliphatic, aromatic, saturated and unsaturated compounds	**K3**
5	analyze the given organic substance	**K4**

K1 - Remember; K2 - Understand; K3 - Apply; K4 – Analyze

SEMESTER – II

NON MAJOR ELECTIVE NME II : COSMETICS AND PERSONAL GROOMING

Course Code : CU232NM1

On the successful completion of the course, student will be able to:		
1.	remember the composition of various chemicals in cosmetic products	**K1**
2.	understand the methods of beauty treatments and their advantages and disadvantages	**K2**
3.	apply the functions of various chemicals in cosmetics	**K3**
4.	analyze the advantages and hazards of cosmetics	**K4**
5.	evaluate the quality of cosmetics on the basis of their chemical composition	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate

SEMESTER II

SKILL ENHANCEMENT COURSE SEC I: DAIRY CHEMISTRY

Course Code : CU232SE1

On the successful completion of the course, student will be able to:		
1	remember the composition of milk and its processing.	**K1**
2	understand the physio-chemical properties, pasteurization process and manufacture of milk and milk products	**K2**
3	apply the procedure for milk processing and determine the adulterants present in dairy products	**K3**
4	analyze the ingredients, nutritive values and manufacture of special milks and dairy products.	**K4**

5	evaluate fat, SNF, specific gravity, acidity, pH, surface tension, viscosity and physio-chemical properties of milk and milk products.	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate

SEMESTER I & II

Life Skill Training I: Catechism

Course Code: UG232LC1

Upon completion of this course the students will be able to		
1	understand the aim and significance of value education	**K1,K2**
2	develop individual skills and act confidently in the society	**K3**
3	learn how to live lovingly through family values	**K3**
4	enhance spiritual values through strong faith in God	**K6**
5	learn good behaviours through social values	**K6**

SEMESTER I & II

Life Skill Training I: Moral

Course Code: UG232LM1

Upon completion of this course the students will be able to:		
1	understand the aim and significance of value education	**K1, K2**
2	develop individual skills and act confidently in the society	**K3**
3	learn how to live lovingly through family values	**K3**
4	enhance spiritual values through strong faith in God	**K6**
5	learn good behaviours through social values	**K6**

SEMESTER III

CORE COURSE III : GENERAL CHEMISTRY III

Course Code: CU233CC1

On the successful completion of the course, students will be able to:		
1.	remember the classification and properties of chemical compounds	**K1**
2.	understand the basic concepts of states of matter, nuclear radioactivity and organic reactions	**K2**
3.	apply the concepts and mechanism in gases, liquids, solids, radioactivity and organic reactions	**K3**
4.	analyze the properties of gases, liquids, solids and mechanisms of chemical reactions	**K4**
5.	evaluate the kinetics of gases, crystal structure, nuclear reactions and properties of organic reactions	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER - III

CORE LAB COURSE III : ORGANIC ANALYSIS AND DETERMINATION OF PHYSICAL CONSTANTS

Course Code: CU233CP1

On the successful completion of the course, students will be able to:		
1.	remember the basic concepts of organic analysis	**K1**
2	understand the methods to identify the functional groups	**K2**
3	apply the procedure for identifying the functional groups	**K3**
4	analyse the functional groups and physical constants of organic compounds	**K4**
5	evaluate the melting and boiling points of organic compounds	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** – Analyse, **K5** - Evaluate

SEMESTER – III

ELECTIVE COURSE III: CHEMISTRY FOR PHYSICAL SCIENCES – I

Course Code: CU233EC1

On the successful completion of the course, student will be able to:		
1	gain in-depth knowledge about the theories of chemical bonding, nuclear reactions and its applications.	**K1**
2	understand the efficiencies and uses of various fuels and fertilizers.	**K2**
3	explain the type of hybridization, electronic effect and mechanism involved in the organic reactions.	**K2**
4	apply various thermodynamic principles, systems and phase rule.	**K3**
5	analyze various methods for the separation of chemical components	**K4**

K1 - Remember; K2 - Understand; K3 - Apply; K4 – Analyze

SEMESTER – III

ELECTIVE LAB COURSE III : CHEMISTRY PRACTICAL FOR PHYSICAL SCIENCES - VOLUMETRIC ANALYSIS

Course Code: CU233EP1

On the successful completion of the course, student will be able to:		
1	understand the principles of titrimetric methods.	**K1**
2	gain knowledge on the usage of standard flask, pipette and burette.	**K2**
3	design, carry out, record and interpret the results of various	**K3**

	titrations and apply their skill in the estimation of various compounds.	
4	analyze the suitable indicators for various titrations	**K4**
5	evaluate the end points of various titrations	**K5**

K1 - Remember; K2 - Understand; K3 - Apply; K4 – Analyze, K5 - Evaluate

SEMESTER III

SKILL ENHANCEMENT COURSE SEC-II: APPLIED CHEMISTRY

Course Code: CU233SE1

On the successful completion of the course, students will be able to:		
1	remember the synthesis of chemicals used in day today life	**K1**
2	understand the effects of adulteration in food	**K2**
3	illustrate the different processes of water softening and estimation of hardness of Water	**K3**
4	analyze the purity of water	**K4**
5	evaluate the composition of blood	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER – III / IV

SKILL ENHANCEMENT COURSE SEC-III: FITNESS FOR WELLBEING

Course Code: UG23CSE1

On the successful completion of the course, student will be able to:		
1	know physical, mental, and social aspects of health	**K1**
2	understand holistic health and the role of physical fitness.	**K2**
3	apply mindfulness and yoga for stress management and mental clarity.	**K3**
4	implement proper personal hygiene practices for cleanliness and disease prevention.	**K3**
5	evaluate and implement right nutritional choices.	**K5**

K1-Remember; **K2**-Understand; **K3**-Apply; **K5**-Evaluate

SEMESTER III

SPECIFIC VALUE ADDED COURSE : AGROCHEMICALS AND PESTICIDES

Course Code: CU233V01

On the successful completion of the course, students will be able to:		
1	remember the classifications of agrochemicals and pesticides	**K1**
2	understand the nature and role of fertilizers and pesticides used in agriculture	**K2**

3	apply the agrochemical and pesticide formulations and techniques in agriculture	**K3**
4	analyze the preparation and factors influencing the efficacy of fertilizers and pesticides	**K4**
5	evaluate the applications of agrochemicals and pesticides	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER III

SPECIFIC VALUE ADDED COURSE: WATER RESOURCES AND MANAGEMENT

Course Code: CU231V02

On the successful completion of the course, student will be able to:		
1	remember and recall the different sources of water pollution	**K1**
2	understand the different water treatment and purification techniques	**K2**
3	apply various methods to measure various physico-chemical parameters of water	**K3**
4	analyze the environmental, social, and economic consequences of water management	**K4**
5	determine the hardness of water and other parameters	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5**-Evaluate

SEMESTER III

SPECIFIC VALUE-ADDED COURSE: FOOD ADULTERATION

Course Code: CU233V03

On the successful completion of the course, students will be able to:		
1.	remember the classifications of agrochemicals and pesticides	**K1**
2.	understand the sources and impacts of environmental contaminants	**K2**
3.	apply various methods to detect adulterants in common food items	**K3**
4.	analyze the stability of flavours during food processing and storage	**K4**
5.	evaluate the roles and impacts of food additives	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER III/V

SELF-LEARNING COURSE: NUTRITIONAL CHEMISTRY

Course Code: CU233SL1 / CU235SL1

On the successful completion of the course, students will be able to:		
1	remember nutrients present in food	**K1**
2	understand and amino acids and proteins	**K2**
3	apply the skills to identify and prevent food poisoning	**K3**
4	analyse minerals, vitamins and enzymes	**K4**
5	evaluate blood sugar and digestion	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER IV

CORE COURSE IV: GENERAL CHEMISTRY - IV

Course Code: CU234CC1

On the successful completion of the course, students will be able to:		
1	define the terms in thermodynamics, periodic properties of transition elements and to recognize the properties of aldehydes, ketones and carboxylic acids.	**K1**
2	discuss the fundamentals in the chemistry of ethers, epoxides and carbonyl compounds and to understand the principles behind thermodynamics	**K2**
3	apply the laws of thermodynamics and to synthesise various organic compounds	**K3**
4	classify transition elements into series and to analyse the properties of ethers, acids, epoxides, halogen derivatives and thermodynamical concepts	**K4**
5	determine the thermodynamic relations and to evaluate the oxidation, reduction and other properties of organic compounds	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER - IV

CORE LAB COURSE IV : PHYSICAL CHEMISTRY PRACTICAL - I CONDUCTOMETRIC AND POTENTIOMETRIC TITRATIONS

Course Code: CU234CP1

On the successful completion of the course, students will be able to:		
1	remember the theoretical concepts of the experiments	**K1**
2	understand the concepts of conductometric and potentiometric titrations	**K2**
3	apply the principles of conductometry and potentiometry to determine the strength of unknown solutions.	**K3**
4	analyze the strength of unknown solution by potentiometric method	**K4**
5	evaluate the concentration , conductance , dissociation constant of compounds	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER – IV

ELECTIVE COURSE IV: CHEMISTRY FOR PHYSICAL SCIENCES – II

Course Code: CU234EC1

On the successful completion of the course, student will be able to:		
1	write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology	**K1**
2	explain the preparation and property of carbohydrate, amino acids and nucleic acids.	**K2**
3	apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuel cells.	**K3**
3	determine the reaction rate, order of chemical reaction	**K3**
4	analyze the various type of photochemical process and catalysis.	**K4**
5	evaluate the nature of carbohydrates, reaction rates and electroplating metals	**K5**

K1 - Remember; K2 - Understand; K3 - Apply; K4 – Analyze, K5 - Evaluate

SEMESTER – IV

ELECTIVE LAB COURSE IV: CHEMISTRY PRACTICAL FOR PHYSICAL SCIENCES: SYSTEMATIC ANALYSIS OF ORGANIC COMPOUNDS

Course Code: CU234EP1

On the successful completion of the course, student will be able to:		
1	learn to test the organic substances	**K1**
2	identify the functional group present in the organic compounds	**K2**
3	detect the elements present	**K3**
4	distinguish between aliphatic, aromatic, saturated and	**K3**

	unsaturated compounds	
5	analyze the given organic substance	**K4**

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze

SEMESTER - III / IV
SKILL ENHANCEMENT COURSE SEC - IV
DIGITAL FLUENCY
Course Code: UG23CSE2

On the successful completion of the course, students will be able to:		
1.	work with text, themes and styles	**K1**
2.	produce a mail merge	**K2**
3.	secure information in an Excel workbook	**K2**
4.	perform documentation and presentation skills	**K2, K3**
5.	add special effects to slide transitions	**K3**

K1 - Remember; **K2** - Understand; **K3** – Apply

SEMESTER – IV
ENVIRONMENTAL STUDIES
Course Code: UG234EV1

On the successful completion of the course, students will be able to:		
1.	know the different kinds of resources, pollution and ecosystems	**K1**
2.	understand the biodiversity and its constituents	**K2**
3.	use the methods to control pollution and, to conserve the resources and ecosystem	**K3**
4.	analyse the factors behind pollution, global warming and health effects for sustainable development	**K4**
5.	evaluate various water, disaster and waste management systems	**K5**

K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER IV/VI
SELF-LEARNING COURSE: CHEMISTRY OF FUELS
Course Code: CU234SL1/CU236SL1

On the successful completion of the course, students will be able to:		
1	remember the classifications of coals and lubricants	**K1**
2	understand the properties and definitions of solid, liquid, and gaseous fuels	**K2**
3	apply the skills to optimize fuel processing techniques	**K3**
4	analyze and compare renewable and non-renewable energy sources	**K4**
5	evaluate the applications of fuels in various industries	**K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyse; **K5** - Evaluate

SEMESTER III & IV
LIFE SKILL TRAINING II: MORAL
Course Code: UG234LM1

Upon completion of this course the students will be able to		
1	know the significance of life	K1
2	understand the importance of self-care	K2
3	realize the duty of youngsters in the society and live up to it	K3
4	analyse how to achieve success in profession	K4
5	develop mystical values by inculcating good thoughts	K5

K1 - Remember; K2 - Understand; K3 – Apply; K4 - Analyse; K5 – Evaluate

SEMESTER III & IV
LIFE SKILL TRAINING II: CATECHISM
Course Code: UG234LC1

Upon completion of this course the students will be able to		
1	know and understand the aim and importance of value education	**K1,K2**
2	get rid of inferiority complex and act confidently in the society	**K3**
3	live lovingly by facing loneliness and make decisions on their own	**K3**
4	develop human dignity and able to stand bravely in adversity	**K6**
5	learn unity in diversity and grow in a life of grace	**K6**

K1 - Remember **K2**-Understand; **K3**-Apply; **K6**- Create