PROGRAMME CODE: UACH



 Criterion : II - Teaching-Learning and Evaluation
 Metric : 2.6.1 - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) - B.Sc. CHEMISTRY
 Year : 2015 - 2020



FATIMA COLLEGE (AUTONOMOUS), MADURAI – 625018

NAME OF THE PROGRAMME: B.SC. CHEMISTRY

PROGRAMME OUTCOMES:

The learners will be able to

- **PO1:** Apply acquired scientific knowledge to solve complex issues.
- PO2: Attain Analytical skills to solve complex cultural, societal and environmental issues.

PO3: Employ latest and updated tools and technologies to analyse complex issues.

PO4: Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives.

PROGRAMME SPECIFIC OUTCOMES:-

- PSO 1: Thorough understanding of all basic concepts and theories pertaining to Chemistry
- **PSO 2:** A comprehensive view of bonding, structure, reactivity and stability of chemical species.
- **PSO 3:** An overall perspective view of physical principles that govern all physical and chemical transformations.
- PSO 4: Basic knowledge about instrumentation involving UV, IR, ESR and NMR
- **PSO 5:** Hands on experience of laboratory experiments both qualitative and quantitative



- **PSO 6:** Project undertaking enables presentation of results and strengthens the learners in lab to land procedures that nurture societal need and environmental protection.
- **PSO 7:** Diversified informative sources that equip learners to enter varied fields
- **PSO 8:** Additional in-puts of using appropriate software related to Chemistry and chemical calculate.

2019 - 2020

COURSE CODE	COURSE TITLE	Course outcomes
19C1CC1	Inorganic Chemistry -I	 CO1: To comprehend the fundamental properties of atoms, molecules, and the various states of matte CO2: To classify the electronic structure of atoms and its influence on chemical properties CO3: To describe the periodic table as a list of elements arranged so as to demonstrate trends in their physical and chemical properties. CO4: To describe the difference(s) between strong acids/bases and weak acids/bases.





		CO5: To illustrate the factors affecting the strength of acid and
		bases
	A A	CO5: To acquire the knowledge of properties, characteristics
		and application of non-aqueous solvents
		CO6: To explain the atomic, physical and chemical properties of
		alkali metals
		CO7: To recognize the anomalous properties of Li and compares
		the properties Li with those other alkali metals
19C1CC2	Organic	CO1: Gain a thorough knowledge about the chemistry of
	Chemistry -I	aliphatic saturated compounds
	())	CO2: Analyze the behaviour of an organic compound through
	à	electron displacement effects.
	AIND	CO3: Describe the structure and stability of different types of
		intermediates involved in reaction mechanism.
		CO4: Know the nomenclature ,classification of alkanes, alkyl
		halides.
		CO5: To derive and familiarise the mechanisms of nucleophilic



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		substitution reactions of organic compounds.
19C1CC3	Volumetric Analysis-I	 CO1: To prepare solutions of desired concentrations . CO2: To apply the principles of volumetric analysis in acid base, permanganometry, and iodometric titrations. CO3: To compare the principles behind all types of titrations CO4: To identify suitable indicators for a particular reaction.
19C1NME	Profitable Home Industries	 CO1: Gain knowledge about the fundamental chemistry involved in dairy products, factors affecting quality, quantity of milk and metals and non-metals used in dairy industries CO2: Recognize the important nutrients present in food CO3: Learn the ingredients required for the preparation of various types of shampoos, skin powder, nail polish etc CO4: Demonstrate the preparation of some home products like candle. Detergent powder, soap oil, ink ,phenoyl and computer sambirani



19Z1ACC1	Allied	CO1: To predict the geometry of any molecule with the help of
	Chemistry-I	VB and VSEPR theory
		CO2: To construct M.O diagram for homo nuclear diatomic
		EAmolecule
		CO3: To categorize the types of organic reactions.
		CO4: To describe the chemistry of carbohydrates.
		CO5: To classify reactions involved in volumetric analysis
19N1ACC1	Allied	CO1: To predict the geometry of any molecule with the help of
	Chemistry-I	VB and VSEPR theory
	18	CO2: To construct M.O diagram for homo nuclear diatomic
	5	molecule
	(V) (INDI	CO3: To categorize the types of organic reactions.
		CO4: To describe the chemistry of carbohydrates.
	14A	CO5: To classify reactions involved in volumetric analysis
19C2CC4	Inorganic	CO1: To categorize the soft, hard and border line acids and



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		hanna
	Chemistry -II	bases.
	A A A	CO2: To predict the structure of an ionic crystal through radius – ratio rule.
		CO3: To understand the synthetic importance of organo
		metallic compounds of Al, B and Si
		CO4: To criticize the chemistry of hydrazine and hydroxyl amine
		CO5: To list out the allotropic modifications of oxygen and
		sulphur
		CO6: To draw the structure of oxoacids and oxy halides of
		sulphur
19C2CC5	Organic	CO1: Gain a basic knowledge about the chemistry of aliphatic
	Chemistry – II	unsaturated compounds like alkenes, alkynes and
	AINDI	alkadienes ,organometallics, alcohols and ethers
		CO2: Recognise different types of chemical reactions such as
		addition, elimination, substitution, oxidation and
		reduction
		CO3: Enlighten the relationship between the structure and



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		acidity and basicity of the organic compounds
		CO4: Use IUPAC nomenclature to name and draw a range of
		organic compounds with number more than 8 carbon
		Eatoms
		CO5: Describe and give reasons for the following physical
		properties of organic compounds: melting and boiling
		point and solubility
19C2CC6	Volumetric Analysis-II	CO1: To apply the principles of volumetric analysis in various
		estimations.
		CO2: To estimate the amount of calcium using permangano
	<u>હ</u>	metric method
A	A	CO3: To estimate the amount of calcium and magnesium using
	AIND	EDTA method.
		CO4: To apply the principle of Argentimetry in the estimation of
		chlorideions.
		CO5: To understand the principles behind the
		estimations of phenol & Aniline iodometrically.



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19Z1ACC2	Allied Chemistry Practicals	CO1; Describe the principles and procedures of various
	-II	titrimetric methods
		CO2: identify suitable indicators for a particular reaction
		CO3: know the various terms such as standard solution,
		normality, molality, molarity, equivalent weight and molecular weight.
		CO4: select the specific titric method to estimate the amount of analyte present in the given solution.
		CO5: Apply the expressions and equations to calculate the strength of solutions
19N1ACC2	Allied Chemistry Practicals	CO1: Describe the principles and procedures of various titri
	- II	metric methods
	AND	CO2: identify suitable indicators for a particular reaction
		CO3: know the various terms such as standard solution,
		normality, molality, molarity, equivalent weight and
		molecular weight.



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	MA	CO4: select the specific titric method to estimate the amount of analyte present in the given solution.CO5: Apply the expressions and equations to calculate the strength of solutions
19C2NME	Profitable Home Industries	 CO1: Gain knowledge about the fundamental chemistry involved in dairy products, factors affecting quality, quantity of milk and metals and non-metals used in dairy industries CO2: Recognize the important nutrients present in food CO3: Learn the ingredients required for the preparation of various types of shampoos, skin powder, nail polish etc CO4: Demonstrate the preparation of some home products like candle. CO5:detergentpowder, soapoil, ink, phenoyl and computer sambirani
19Z2ACC3	Allied Chemistry- II	CO1: To apply the rules for naming the metal complexes /



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		coordination compounds.
	A A	CO2: To recognize the applications of metal complexes in biological systems.
		CO3: To analyze the various organic compounds qualitatively
		CO4: To understand the procedure involved in detection of elements.
		CO5: To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
		CO6: To evaluate the types of catalysis and theories of catalysis
19N2ACC3	Allied Chemistry- II	CO1: To apply the rules for naming the metal complexes / coordination compounds.
	(A) KINDI	CO2: To recognize the applications of metal complexes in biological systems.
		CO3: To analyze the various organic compound qualitatively
		CO4: To understand the procedure involved in detection of elements.



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	N A	CO5: To understand the kinetics of a chemical reaction and to predict the order of a particular reactionCO6: To evaluate the types of catalysis and theories of catalysis
19Z2ACC4	Allied Chemistry Practicals- II	 CO1: Gain the knowledge of appearance, colour, physical state, and odour of organic substances. CO2: Distinguish whether the given compound is Aliphatic or Aromatic, and Saturated or Unsaturated. CO3: Perform the confirmatory test for various functional groups present in the given organic compound. CO4: Recognize the usage of apparatus and laboratory reagents. CO5: Relate the experimental observations with theory behind practicals.
19N2ACC4	Allied Chemistry Practicals-II	CO1: Gain the knowledge of appearance, colour, physical state, and odour of organic substances.CO2: Distinguish whether the given compound is Aliphatic or



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		 Aromatic, and Saturated or Unsaturated. CO3: Perform the confirmatory test for various functional groups present in the given organic compound. CO4: Recognize the usage of apparatus and laboratory reagents. CO5: Relate the experimental observations with theory behind practicals.
COURSE CODE	COURSE TITLE	COURSE OBJECTIVES
C3CC6	Organic And Inorganic Chemistry	 To interpret the concept of aromaticity and the main properties of aromatic compounds. To correlate different bond types of carbon and its hybrid orbitals.
C3CC7	Physical Chemistry-I	 Calculate mass defect, packing fraction and binding energy for any nuclei Predict the growing rate, mechanism and age of plants using radioactive elements



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C3SB1	Agricultural Chemistry	To recognise the importance of soilTo recall the names of fertilizers
P3ACC1	Allied Chemistry-I	 To comprehend the fundamental theories of Valence Bond, types of overlapping and VSEPR. To classify the shapes of covalent molecules
C4CC8	Inorganic Chemistry-III	 Get an overview about the reaction mechanism of metal complexes Know the structure and bonding of important coordination compounds
C4CC9	Physical Chemistry-I	 To calculate lattice energy of crystalline solids To distinguish order and molecularity of a chemical reaction
C4SB2	Natural And Synthetic Dyes	To know and comprehend the principle and theories of dyesTo identify the chromophoric groups and auxochrom
P4ACC2	Allied Chemistry-II	To predict the periodicity in the periodic table.To construct an electrochemical cell diagram and identifying



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		the anode, cathode.
C4CC10	Qualitative Analysis	 To identify the group cations To analyse the presence acid and basic radicals in the given mixture of acid
P4ACC3	Allied Chemistry Practicals	 To select the specific titric method to estimate the amount of analyte present in the given solution. To apply the expressions and equations to calculate the strength of solutions
C5CC11	Organic Chemistry – III	 To analyze the synthetic importance of reactive methylene compounds To generalize the characteristic features of optical isomers and geometrical isomers
C5ME1	Spectroscopy	 To identify various functional groups present in organic molecules using IR frequency. To predict the number and nature of protons/ carbons in organic molecules in 1H-NMR/ 13C-NMR spectroscopy



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C5ME2	Bio Chemistry	 To identify the various metabolic reactions To understand the importance of nucleic acids
C5SB3	Medicinal Chemistry	 To study the mechanism of drug action To determine the designing and binding of drugs with receptors
C5SB4	Nano Chemistry	 Learn about the background on Nano science . Understand the synthesis of nano materials and their application and the impact of nano materials on environment
C6CC13	Organic Chemistry-IV	 To explicate the structures of Citral, Dipentene and Camphor. To distinguish the properties of quinolin and isoquinolin
C6CC14	Physical Chemistry- IV	Calculate the cell potential for a nonstandard cell.Know the chemical reactions used in a lead-acid battery
C6ME3	Advanced Organic Chemistry	 To sketch Frontier molecular orbitals in photochemistry. To differentiate the molecular rearrangements and to solve



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C6ME5Advanced
Physical Chemistry• To understand the theories behind the spectral techniques
like MW.IR,NMR and ESR
• To study the applications of the above techniques to elucidate
the structures of moleculesC6SB5Computers in Chemistry• 1 To write programs to determine lattice energy, half-life,
normality, molarity, molarity, molality

•	To present structure	based drug	g designing in	both 2D and
			······································	

C6SB6	Green Chemistry	 To differentiate between yield and atom economy To interpret the concept of Stereo selectivity, Chemo selectivity and Regio selectivity
C6CC15	Inorganic Chemistry Practicals	Acquire the knowledge of concept of gravimetric estimations.Recognise the role of reagents in chemistry.
C6CC16	Organic Chemistry Practicals	 Recognize the usage of apparatus and laboratory reagents. Relate the experimental observations with theory behind

3D



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	-	
		practicals.
C6CC17	Physical Chemistry	• Experience in some scientific methods employed in basic and
	Practicals	applied physical chemistry
		• Developed skills in procedures and instrumental methods
		applied in analytical and practical tasks of physical
		chemistry
C6CC17	Green	• To understand green synthetic methods
	Chemistry Practicals	• To familiarise the synthesis of silver nano particle by green
		approach





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COURSE CODE	Course Title	COURSE OBJECTIVES
C1CC1	Inorganic Chemistry -I	 To comprehend the fundamental properties of atoms, molecules, and the various states of matter To classify the electronic structure of atoms and its influence on chemical properties
C1CC2	Organic Chemistry -I	 Recognize the basic practical skills for synthetic methods of alkenes, and alkyl halide Know the rules for naming different organic compounds
C1NME1	Profitable Home Industries	To interpret the hazardous chemicals used in cosmetics.To prepare the various house hold items in laboratory
Z1ACC1	Allied Chemistry-I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homonuclear diatomic molecule



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N1ACC1	Allied Chemistry-I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic molecule
C2CC3	Inorganic Chemistry -II	To categorize the soft, hard and border line acidsTo understand the synthetic importance of organometallics
C2CC4	Organic Chemistry – II	 Enlighten the relationship between the structure and acidity of the compounds Interpret the concept of resonance and stability of compounds
C2CC5	Profitable Home Industries	To interpret the hazardous chemicals used in cosmetics.To prepare the various house hold items in laboratory
Z2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction



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N2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
C2CC5	Volumetric Analysis	 To apply the principles of volumetric analysis in various estimations. To estimate the amount of calcium using permangano metric method
Z2ACC3 & N2ACC3	Allied Practicals	 Select the specific titric method to estimate the amount of analyte present in the given solution. Apply the expressions and equations to calculate the strength of solutions
C3CC6	Organic And Inorganic Chemistry	 To interpret the concept of aromaticity and the main properties of aromatic compounds. To correlate different bond types of carbon and its hybrid orbitals.



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C3CC7	Physical Chemistry-I	 Calculate mass defect, packing fraction and binding energy for any nuclei Predict the growing rate, mechanism and age of plants using radioactive elements
C3SB1	Agricultural Chemistry	To recognise the importance of soilTo recall the names of fertilizers
P3ACC1	Allied Chemistry-I	 To comprehend the fundamental theories of Valence Bond, types of overlapping and VSEPR. To classify the shapes of covalent molecules
C4CC8	Inorganic Chemistry-III	 Get an overview about the reaction mechanism of metal complexes Know the structure and bonding of important coordination compounds
C4CC9	Physical Chemistry-I	 To calculate lattice energy of crystalline solids To distinguish order and molecularity of a chemical reaction



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C4SB2	Natural And Synthetic Dyes	 To know and comprehend the principle and theories of dyes To identify the chromophoric groups and auxochromes
P4ACC2	Allied Chemistry- II	 To predict the periodicity in the periodic table. To construct an electrochemical cell diagram and identifying the anode, cathode.
C4CC10	Qualitative Analysis	 To identify the group cautions To analyse the presence acid and basic radicals in the given mixture of acid
P4ACC3	Allied Practicals	 To select the specific titric method to estimate the amount of analyte present in the given solution. To apply the expressions and equations to calculate the strength of solutions
C5CC11	Organic Chemistry – III	 To analyze the synthetic importance of reactive methylene compounds To generalize the characteristic features of optical isomers



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		and geometrical isomers
C5ME1	Spectroscopy	 To identify various functional groups present in organic molecules using IR frequency. To predict the number and nature of protons/ carbons in organic molecules in 1H-NMR/ 13C-NMR spectroscopy
C5ME2	Bio Chemistry	To identify the various metabolic reactionsTo understand the importance of nucleic acids
C5SB3	Medicinal Chemistry	 To study the mechanism of drug action To determine the designing and binding of drugs with receptors
C5SB4	Nano Chemistry	 Learn about the background on Nanoscience . Understand the synthesis of nanomaterials and their application and the impact of nanomaterials on environ
C6CC13	Organic Chemistry- IV	 To explicate the structures of Citral, Dipentene and Camphor. To distinguish the properties of quinolin and isoquinolin



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C6CC14	Physical Chemistry- IV	Calculate the cell potential for a nonstandard cell.Know the chemical reactions used in a lead-acid battery
C6ME3	Advanced Organic Chemistry	 To sketch Frontier molecular orbital in photochemistry. To differentiate the molecular rearrangements and to solve the simple problems
C6ME5	Advanced Physical Chemistry	 To understand the theories behind the spectral techniques like MW.IR,NMR and ESR To study the applications of the above techniques to elucidate the structures of molecules
C6SB5	Computers in Chemistry	 1 To write programs to determine lattice energy, half-life, normality, molarity, molality To present structure based drug designing in both 2D and 3D
C6SB6	Green Chemistry	 To differentiate between yield and atom economy To interpret the concept of Stereo selectivity, Chemo selectivity and Regio selectivity



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C6CC15	Inorganic Chemistry Practicals	 Acquire the knowledge of concept of gravimetric estimations. Recognise the role of reagents in chemistry.
C6CC16	Organic Chemistry Practicals	 Recognize the usage of apparatus and laboratory reagents. Relate the experimental observations with theory behind practicals
C6CC17	Physical Chemistry Practicals	 Experience in some scientific methods employed in basic and applied physical chemistry Developed skills in procedures and instrumental methods applied in analytical and practical tasks of physical chemistry
C6CC18	Green Chemistry Practicals	To understand green synthetic methodsTo familiarise the synthesis of silver nanoparticle
	KAI	URA



2017 - 2018

Course Code	Course Title	COURSE OBJECTIVES
C1CC1	Inorganic Chemistry -I	 To comprehend the fundamental properties of atoms, molecules, and the various states of matter To classify the electronic structure of atoms and its influence on chemical properties
C1CC2	Organic Chemistry -I	 Recognize the basic practical skills for synthetic methods of alkenes, and alkyl halide Know the rules for naming different organic compound
C1NME1	Profitable Home Industries	 To interpret the hazardous chemicals used in cosmetics. To prepare the various house hold items in laboratory



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	A	CON
Z1ACC1	Allied Chemistry- I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic molecule
N1ACC1	Allied Chemistry-I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic molecule
C2CC3	Inorganic Chemistry -II	 To categorize the soft, hard and border line acids To understand the synthetic importance of organometallics



C2CC4	Organic Chemistry – II	• Enlighten the relationship between the structure and
		acidity of the compounds
		Interpret the concept of resonance and stability of
		compounds
C2NME2	Profitable Home Industries	• To interpret the hazardous chemicals used in cosmetics.
		• To prepare the various house hold items in laboratory
Z2ACC2	Allied Chemistry- II	• To illustrate and tabulate the reactions of different
		functional groups.
	Ċh l	• To understand the kinetics of a chemical reaction and to
	FINDLY	predict the order of a particular reaction
N2ACC2	Allied Chemistry- II	• To illustrate and tabulate the reactions of different
		functional groups.
		• To understand the kinetics of a chemical reaction and to



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		predict the order of a particular reaction
C2CC5	Volumetric Analysis	 To apply the principles of volumetric analysis in various estimations. To estimate the amount of calcium using permangano metric method
Z2ACC3 & N2ACC3	Allied Practicals	 select the specific titric method to estimate the amount of analyte present in the given solution. Apply the expressions and equations to calculate the strength of solutions
C3CC6	Organic and Inorganic Chemistry	 To interpret the concept of aromaticity and the main properties of aromatic compounds. To correlate different bond types of carbon and its hybrid orbitals.
C3CC7	Physical Chemistry-I	 Calculate mass defect, packing fraction and binding energy for any nuclei Predict the growing rate, mechanism and age of plants



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		using radioactive elements
C3SB1	Agricultural Chemistry	To recognise the importance of soilTo recall the names of fertilizers
P3ACC1	Allied Chemistry-I	 To comprehend the fundamental theories of Valence Bond, types of overlapping and VSEPR. To classify the shapes of covalent molecules
C4CC8	Inorganic Chemistry- III	 Get an overview about the reaction mechanism of metal complexes Know the structure and ending of important coordination compounds
C4CC9	Physical Chemistry-I	 To calculate lattice energy of crystalline solids To distinguish order and molecularity of a chemical reaction
C4SB2	Organic Farming	 To recall the principles of health- ecology- principle of care. To understand the concepts of organic farming- world of



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		organic agriculture.
P4ACC2	Allied Chemistry-II	 To predict the periodicity in the periodic table. To construct an electrochemical cell diagram and identifying the anode, cathode.
C4CC10	Qualitative Analysis	 To identify the group cautions To analyse the presence acid and basic radicals in the given mixture of acid
P4ACC3	Allied Practicals	 To select the specific titric method to estimate the amount of analyte present in the given solution. To apply the expressions and equations to calculate the strength of solutions
C5CC11	Organic Chemistry – III	 To analyze the synthetic importance of reactive methylene compounds To generalize the characteristic features of optical isomers and geometrical isomers
C5ME1	Spectroscopy	• To identify various functional groups present in organic



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	n A	 molecules using IR frequency. To predict the number and nature of protons/ carbons in organic molecules in 1H-NMR/ 13C-NMR spectroscopy
C5ME2	Bio Chemistry	To identify the various metabolic reactionsTo understand the importance of nucleic acids
C5SB3	Medicinal Chemistry	 To study the mechanism of drug action To determine the designing and binding of drugs with receptors
C5SB4	Natural and Synthetic Dyes	 To know and comprehend the principle and theories of dyes To identify the chromophoric groups and auxochromes in dyes
C6CC13	Organic Chemistry- IV	 To explicate the structures of Citral, Dipentene and Camphor. To distinguish the properties of quinolin and isoquinolin
C6CC14	Physical Chemistry- IV	• Calculate the cell potential for a nonstandard cell.



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		• Know the chemical reactions used in a lead-acid battery
C6ME3	Advanced Organic Chemistry	 To sketch Frontier molecular orbitals in photochemistry. To differentiate the molecular rearrangements and to solve the simple problems
6ME5	Advanced Physical Chemistry	 To understand the theories behind the spectral techniques like MW.IR,NMR and ESR To study the applications of the above techniques to elucidate the structures of molecules
C6SB5	Computers In Chemistry	 To write programs to determine lattice energy, half-life, normality, molarity, molality To present structure based drug designing in both 2D and 3D
C6SB6	Green Chemistry	 To differentiate between yield and atom economy To interpret the concept of Stereo selectivity, Chemo selectivity and Regio selectivity
C6CC15	Inorganic Chemistry	Acquire the knowledge of concept of gravimetric



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	Practicals		estimations.
			Recognise the role of reagents in chemistry.
C6CC16	Organic Chemistry Practicals	·E	Recognize the usage of apparatus and laboratory reagents. Relate the experimental observations with theory behind practical's.asis
C6CC17	Physical Chemistry Practicals		Experience in some scientific methods employed in basic and applied physical chemistry Developed skills in procedures and instrumental methods applied in analytical and practical tasks of physical chemistry

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2016 - 2017

COURSE CODE	COURSE TITLE	COURSE OBJECTIVES
C1CC1	Inorganic Chemistry - I	 To comprehend the fundamental properties of atoms, molecules, and the various states of matter To classify the electronic structure of atoms and its influence on chemical properties
C1CC2	Organic Chemistry - I	 Recognize the basic practical skills for synthetic methods of alkenes, and alkyl halide Know the rules for naming different organic compounds
C1NME1	Profitable Home Industries	To interpret the hazardous chemicals used in cosmetics.To prepare the various house hold items in laboratory
Z1ACC1	Allied Chemistry - I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic



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		molecule
N1ACC1	Allied Chemistry - I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic molecule
C2CC3	Inorganic Chemistry - II	 To categorize the soft, hard and border line acids To understand the synthetic importance of rgano metallics
C2CC4	Inorganic Chemistry - II	 Enlighten the relationship between the structure and acidity of the compounds Interpret the concept of resonance and stability of compounds
C2NME2	Profitable Home Industries	To interpret the hazardous chemicals used in cosmetics.To prepare the various house hold items in laboratory



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Z2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
N2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
C2CC5	Volumetric Analysis	 To apply the principles of volumetric analysis in various estimations. To estimate the amount of calcium using permangano metric method
Z2ACC3 & N2ACC3	Allied Practicals	 select the specific titric method to estimate the amount of analyte present in the given solution. Apply the expressions and equations to calculate the strength of solutions



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C3CC6	Organic And Inorganic Chemistry	 To interpret the concept of aromaticity and the main properties of aromatic compounds. To correlate different bond types of carbon and its hybrid orbitals
C3CC7	Physical Chemistry-I	 Calculate mass defect, packing fraction and binding energy for any nuclei Predict the growing rate, mechanism and age of plants using radioactive elements
C3SB1	Pollution And Its Control Measure	To recognise the importance of clean environmentTo recall the names of pollutants
P3ACC1	Allied Chemistry-I	 To comprehend the fundamental theories of Valence Bond, types of overlapping and VSEPR. To classify the shapes of covalent molecules
C4CC8	Inorganic Chemistry-III	 Get an overview about the reaction mechanism of metal complexes Know the structure and bonding of important



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		coordination compounds
C4CC9	Physical Chemistry-I	 To calculate lattice energy of crystalline solids To distinguish order and molecularity of a chemical reaction
C4SB2	Organic Farming	 To recall the principles of health- ecology- principle of care. To understand the concepts of organic farming- world of organic agriculture.
P4ACC2	Allied Chemistry-II	 To predict the periodicity in the periodic table. To construct an electrochemical cell diagram and identifying the anode, cathode.
C4CC10	Qualitative Analysis	 To identify the group cautions To analyse the presence acid and basic radicals in the given mixture of acid
P4ACC3	Allied Practicals	• To select the specific titric method to estimate the amount of analyte present in the given solution.



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		• To apply the expressions and equations to calculate the
		strength of solutions
		8
C5CC11	Organic Chemistry – III	• To analyze the synthetic importance of reactive methylene
		Compounds
		• To generalize the characteristic features of optical isomers
		and geometrical isomers
C5ME1	Spectroscopy	• To identify various functional groups present in organic
		molecules using IR frequency.
		• To predict the number and nature of protons/ carbons in
		organic molecules in 1H-NMR/ 13C-NMR spectroscopy
C5ME2	Bio Chemistry	• To identify the various metabolic reactions
	S)	• To understand the importance of nucleic acids
C5SB3	Medicinal Chemistry	To study the mechanism of drug action
		• To determine the designing and binding of drugs with
	KAT	receptors
C5SB4	Natural And Synthetic Dyes	• To know and comprehend the principle and theories of



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		dyesTo identify the chromophoric groups and auxochromes in dyes
		uyes
C6CC13	Organic Chemistry-IV	• To explicate the structures of Citral, Dipentene and Camphor.
		• To distinguish the properties of quinolin and isoquinolin
C6CC14	Physical Chemistry-IV	• Calculate the cell potential for a nonstandard cell.
		Know the chemical reactions used in a lead-acid battery
C6ME3	Advanced Organic Chemistry	• To sketch Frontier molecular orbitals in photochemistry.
	787	• To differentiate the molecular rearrangements and to solve
	5	the simple problems
C6ME5	Advanced Physical Chemistry	• To understand the theories behind the spectral techniques
	·······································	like MW.IR,NMR and ESR
		• To study the applications of the above techniques to
		elucidate the structures of molecules
C6SB5	Computers in Chemistry	• To write programs to determine lattice energy, half-life,



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	A A	 normality, molarity, molality To present structure based drug designing in both 2D and 3D
C6SB6	Green Chemistry	 To differentiate between yield and atom economy To interpret the concept of Stereo selectivity, Chemo selectivity and Regio selectivity
C6CC15	Inorganic Chemistry Practicals	 Acquire the knowledge of concept of gravimetric estimations. Recognise the role of reagents in chemistry
C6CC16	Organic Chemistry Practicals	 Recognize the usage of apparatus and laboratory reagents. Relate the experimental observations with theory behind practical's.asis
C6CC17	Physical Chemistry Practicals	 Experience in some scientific methods employed in basic and applied physical chemistry Developed skills in procedures and instrumental methods



	applied in analytical and practical tasks of physical chemistry

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COURSE CODE	Course Title	COURSE OBJECTIVES
C1CC1	Inorganic Chemistry -I	 To comprehend the fundamental properties of atoms, molecules, and the various states of matter To classify the electronic structure of atoms and its influence on chemical properties
C1CC2	Organic Chemistry - I	 Recognize the basic practical skills for synthetic methods of alkenes, and alkyl halide Know the rules for naming different organic compounds



C1NME1	Profitable Home Industries	 To interpret the hazardous chemicals used in cosmetics. To prepare the various house hold items in laboratory
Z1ACC1	Allied Chemistry- I	 To predict the geometry of any molecule with the help of VB and VSEPR theory To construct M.O diagram for homo nuclear diatomic molecule
N1ACC1	Allied Chemistry- I	 To predict the geometry of any molecule with the help of VB and VSEPRB theory To construct M.O diagram for homo nuclear diatomic molecule
C2CC3	Inorganic Chemistry - II	To categorize the soft, hard and border line acidsTo understand the synthetic importance of organometallics
C2CC4	Organic Chemistry – II	• Enlighten the relationship between the structure and acidity of the compounds



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		• Interpret the concept of resonance and stability of compounds
C2NME2	Profitable Home Industries	 To interpret the hazardous chemicals used in cosmetics. To prepare the various house hold items in laboratory
Z2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
N2ACC2	Allied Chemistry- II	 To illustrate and tabulate the reactions of different functional groups. To understand the kinetics of a chemical reaction and to predict the order of a particular reaction
C2CC5	Volumetric Analysis	• To apply the principles of volumetric analysis in various estimations.



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		• To estimate the amount of calcium using permangano metric method
Z2ACC3	Allied Practicals	• select the specific titric method to estimate the amount of
&		analyte present in the given solution.
N2ACC3		• Apply the expressions and equations to calculate the strength of solutions
C3CC6	Organic And Inorganic Chemistry	 To interpret the concept of aromaticity and the main properties of aromatic compounds. To correlate different bond types of carbon and its hybrid orbitals.
C3CC7	Physical Chemistry- I	 Calculate mass defect, packing fraction and binding energy for any nuclei Predict the growing rate, mechanism and age of plants using radioactive elements
C3SB1	Pollution And Its Control	• To recognise the importance of clean environment



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	Measure	• To recall the names of pollutants
P3ACC1	Allied Chemistry- I	 To comprehend the fundamental theories of Valence Bond, types of overlapping and VSEPR. To classify the shapes of covalent molecules
C4CC8	Inorganic Chemistry- III	 Get an overview about the reaction mechanism of metal complexes Know the structure and bonding of important coordination compounds
C4CC9	Physical Chemistry- I	To calculate lattice energy of crystalline solidsTo distinguish order and molecularity of a chemical reaction
C4SB2	Forensic Science	To classify blood grouping in human bodyTo identify the type of poison
P4ACC2	Allied Chemistry- II	To predict the periodicity in the periodic table.To construct an electrochemical cell diagram and identifying the anode, cathode.



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 Metric : 2.6.1 – Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) – B.Sc. CHEMISTRY
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C4CC10	Qualitative Analysis	To identify the group cationsTo analyse the presence acid and basic radicals in the given
		mixture of acid
P4ACC3	Allied Practicals	 To select the specific titric method to estimate the amount of analyte present in the given solution. To apply the expressions and equations to calculate the strength of solutions
C5CC11	Organic Chemistry – III	 To analyze the synthetic importance of reactive methylene compounds To generalize the characteristic features of optical isomers and geometrical isomers
C5ME1	Spectroscopy	 To identify various functional groups present in organic molecules using IR frequency. To predict the number and nature of protons/ carbons in organic molecules in 1H-NMR/13C-NMR spectroscopy
C5ME2	Bio Chemistry	• To identify the various metabolic reactions



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		• To understand the importance of nucleic acids
C5SB3	Medicinal Chemistry	 To study the mechanism of drug action To determine the designing and binding of drugs with receptors
C5SB4	Natural And Synthetic Dyes	To know and comprehend the principle and theories of dyesTo identify the chromophoric groups and auxochromes in dyes
C6CC13	Organic Chemistry- IV	 To explicate the structures of Citral, Dependence and Camphor. To distinguish the properties of quinolin and isoquinolin
C6CC14	Physical Chemistry- IV	Calculate the cell potential for a nonstandard cell.Know the chemical reactions used in a lead-acid battery
C6ME3	Advanced Organic Chemistry	• To sketch Frontier molecular orbitals in photochemistry.



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• To differentiate the molecular rearrangements and to solve the simple problems C6ME5 Advanced • To understand the theories behind the spectral techniques like MW.IR,NMR and ESR Physical Chemistry • To study the applications of the above techniques to elucidate the structures of molecules C6SB5 Computers in Chemistry To write programs to determine lattice energy, half-life, normality, molarity, molality • To present structure based drug designing in both 2D and 3D C6SB6 Green Chemistry • To differentiate between yield and atom economy • To interpret the concept of Stereo selectivity, Chemo selectivity and Regio selectivity C6CC15 Inorganic Chemistry • Acquire the knowledge of concept of gravimetric estimations. Practicals • Recognise the role of reagents in chemistry.



C6CC16	Organic Chemistry Practicals	 Recognize the usage of apparatus and laboratory reagents. Relate the experimental observations with theory behind practical's asis
C6CC17	Physical Chemistry Practicals	 Experience in some scientific methods employed in basic and applied physical chemistry Developed skills in procedures and instrumental methods applied in analytical and practical tasks of physical chemistry

