

M.Sc. Applied Chemistry
4 Semester Course
List of Courses

Sl No	Name of the Course	Semester	Course Code	Credit	Marks in the Course	Name of the Program	Programme Code	Course outcome	Bearing on Employability/Entrepreneurship	Introduction year of new course	BoS Date	Percentage of Revision	BoS Date
1	Inorganic Chemistry	1	APC- P-1T	4	50	M.Sc. Applied Chemistry	APC	• Students will acquire an idea about the Band theory of metals, bonding in metal complexes, orbital contribution to magnetic moment, antiferromagnetism and ferromagnetism in complexes, bioinorganic chemistry, and organometallic compounds.	Students may develop their skill on basic electrical and magnetic applications which is being used in chemical and biochemical industries and also in research area based on those properties.				
2	Organic Chemistry	1	APC- P-2T	4	50	M.Sc. Applied Chemistry	APC	• Development of the concept of catalytic hydrogenation and dehydrogenation, synthon and synthetic equivalent, synthesis of bifunctional compounds, UV, IR, NMR, Mass Spectroscopy.	It may be very helpful for the students to get employed in the "Research & Development" section of any chemical industries and also the skill to handling of basic instruments on research purpose will be developed.				
3	Physical Chemistry	1	APC- P-3T	4	50	M.Sc. Applied Chemistry	APC	• This course will provide a comprehensive idea about the Rotational & Vibrational spectroscopy, photochemistry, surface chemistry and electrical properties.	Skill upon spectrochemical analysis of chemical compounds can be grown for the students in this field.				
4	Analytical Chemistry	1	APC- P-4T	4	50	M.Sc. Applied Chemistry	APC	• Students will gain an idea about the chromatography, different kinds of titrations methods, Instrumental method of analysis	Employment in "Chemical Testing laboratory" and "Research and Development" section of any respective industry can be achieved by the students.				
5	Physical Chemistry	1	APC- P-5P	4	50	M.Sc. Applied Chemistry	APC	• Students will be able to use appropriate laboratory skills and instrumentation technique to solve the laboratory problems.	Skill on basic instrumentation and testing of chemicals may be improved, providing the scope of employability in chemical based industries.				
6	Engineering Mathematics-I	2	APC- P-6T	4	50	M.Sc. Applied Chemistry	APC	• Students will acquire an idea about the system of linear equations, symmetric, skew-symmetric and orthogonal matrices, Functions of single variable, limit, continuity and differentiability, Analytic functions, Cauchy-Riemann equations, Application in solving potential problems.	It will be fruitful for the students to solve mathematical problems arising during research work in laboratory section of the respective industries.				
7	Materials Science & Engineering-I	2	APC- P-7T	4	50	M.Sc. Applied Chemistry	APC	• Development of the concept of lattice, lattice energy, symmetry, crystal class, crystal system, unit cell, diffusion, Perfect and imperfect crystals.	The skill to identify Crystalline or amorphous nature of industrial chemical compounds can be developed by the means of this course.			20	26.10.2017
8	Polymer Science & Technology I	2	APC- P-8T	4	50	M.Sc. Applied Chemistry	APC	• This course will provide an idea about the Monomer, high Polymer, Polymerization methods: addition and condensation & their kinetics, cationic and anionic polymerization & their kinetics, Synthesis, Properties and Applications, Polymer Characterization.	Students can find employability directly in the polymer based industries like Plastic, Rubber, Paint and adhesive.			25	26.10.2017

9	Thermodynamics of Materials and Quantum mechanics	2	APC- P-9T	4	50	M.Sc. Applied Chemistry	APC	• Development of the concept of first, second and third laws of thermodynamics, thermodynamics of interfaces, Postulates of Quantum Mechanics, Solutions of the one and three dimensional Schrödinger equation	It may be beneficial for the students to apply their skill into the field of thermochemistry applied in the different aspect of industries.	2018-19	26.10.2017		
10	Computational Laboratory-I	2	APC- P-10P	4	50	M.Sc. Applied Chemistry	APC	• Development of the concept of basic features of the Programming Language, MATLAB/OCTAVE/C Programming.	Skill to develop computer programing which will help to have employability in non core software companies.	2015-16	03.07.2014		
11	Engineering Mathematics-II	3	APC- P-11T	4	50	M.Sc. Applied Chemistry	APC	• Students will acquire an idea about the Gradient, divergence and curl, vector identities, first order equation (linear and nonlinear), and second order linear differential equations with variable coefficients, probability and statistics, numerical methods.	It'll be productive for the understudies to unravel numerical issues emerging amid inquire about work in research facility segment of the individual businesses.			20	26.10.2017
12	Materials Science & Engineering II	3	APC- P-12T	4	50	M.Sc. Applied Chemistry	APC	• Development of the concept of Stress-strain, thermal properties, energy band diagram for materials, magnetic materials- ferro, antiferro and ferrimagnetism, para, dia magnetism & corrosion resistance of metals.	The expertise to observe the mechanical behaviours of industrilal chemical products can be created by the implies of this course.			25	03.07.2014
13	Polymer Science & Technology II	3	APC- P-13T	4	50	M.Sc. Applied Chemistry	APC	• This course will provide an idea about the Polymer blends, long and short fibre reinforced composites, rheological parameter, Polymer compounding, Polymer Processing & testing of polymer.	Understudies can discover emloyability specif ically within the polymer based businesses like Plastic, Elastic, Paint and cement .			20	26.10.2017
14	Industrial & Environmental Pollution Management and Industrial Process Safety	3	APC-IEPM P14T	4	50	M.Sc. Applied Chemistry	APC	• During these course students will be develop their knowledge about the industrial pollution, water pollution, Solid waste management & material safety.	Amid these course students will be create their informative skill around the mechanical contamination, water contamination, Strong squander adminis tration & fabric safety.	2018-19	26.10.2017		
15	Nano-Science & Technology	3	APC- NSTP14T	4			APC	• Students will acquire an idea about the super alloys, shape memory alloys, carbon nanostructure & structural analysis of nano materials	People will find employment in the industries based on materials science concepts like super combinations, shape memory amalgams, carbon nanostructure & nano materials.	2018-19	26.10.2017		
16	Materials synthesis & Characterization	3	APC- P-14P	4	50	M.Sc. Applied Chemistry	APC	• Students will acquire an idea about the synthesis approach and characterizations tools of nano materials.	Understudies will obtain a skill of blend of both approach and characterization of nano materials which will provide him the capability to do work in R & D section of industries.			25	03.07.2014
17	Project Stage-I (Term paper focus on project & Seminar) Project Stage-II (Dissertation & Viva-voce)	4	APC- P-15P	20	250	M.Sc. Applied Chemistry	APC	• During this course students will be able to define the problems clearly and solve in a scientific way.	It may be exceptionally accommodating for the students to induce utilized within the "Research & Development" area of any chemical businesses conjointly the expertise t o taking care of of essential disobedient on inquire about reason will be developed.				

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