

POST GRADUATE DEPARTMENT OF CHEMISTRY, UNIVERSITY OF JAMMU, JAMMU

COURSE OUTCOMES (COS) OF THE PROGRAMMES OFFERED BY THE UNIVERSITY

M. SC. CHEMISTRY (1 YEAR)

COURSE SPECIFIC OUTCOMES (CSO)

S. No.	Course No.	Course Title	Course Outcome
1.	P1CHTC101	Environmental Chemistry	This course will enable the students to learn about the chemistry atmosphere, biosphere, hydrosphere, lithosphere and will to gain knowledge on air, water, soil, marine and solid waste management as well as environmental toxicology. This course will also familiarize with the green chemistry, environmental issues and analytical techniques.
2.	P1CHTC102	Nano-Chemistry	The aim of this course is to inculcate the knowledge among students related to the basics of Nano-materials, their synthesis, characterization, properties and applications. The course will have employability in the industry, research and academic fields.
3.	P1CHTC103	Bioorganic and Medicinal Chemistry	The aim of this course is to let the students understand enzymatic action, coenzymes, chemistry of vitamin B complex, co-crystals, carbohydrates metabolism, drug design, chemistry of antibiotics, mechanism of action of vitamins etc. This paper has scope of employability in medicinal chemistry and as scientist in research laboratories.
4.	P1CHTE104	Analytical Chemistry	This course is aimed to have an insight of various analytical techniques in analyzing the chemicals quantitatively. After completing this course, students will be employable in R & D divisions of Industries Research and Academic Institutes.
5.	P1CHTE105	Spectroscopy and Photochemistry in Inorganic Chemistry	This course is aimed to have an insight of various spectroscopic tools in analyzing the inorganic molecules/complexes. The ligand field photochemistry is also a part of the course. After completing this course, students will be employable in R & D divisions of Industries Research and Academic Institutes.
6.	P1CHTE106	Heuristic Approach to Organic Synthesis	On successful completion of this course, the students will gain knowledge about disconnection approach, planning the synthesis of organic compounds and natural products, photochemistry and asymmetric cycloaddition reactions. The learning from this course will help the students to get jobs in R & D laboratories, pharmaceutical industry and academics.
7.	P1CHTE107	Chemistry of Natural Products	After successful completion of this course, the student will gain knowledge about various natural products such as terpenoids, carotenoids, alkaloids, steroids, plant pigments and marine natural products, and their biosynthetic pathways.
8.	P1CHTE108	Thermodynamics and Statistical Mechanics	This course will be useful in understanding the non-equilibrium thermodynamics, transport phenomenon, thermodynamics of mixtures, statistical mechanics / thermodynamics and their applications.
9.	P1CHTE109	Chemistry of Materials and Liquids	Students will acquaint knowledge about chemistry of different materials like alloys, ceramics, composites and liquid crystals. The properties of liquids along with the various theories of liquids also form a part of discussion in this course. This course also offers employability in the field of research and development, research institutes besides academics.
10.	P1CHPE110	Practical Course in Inorganic Chemistry	This course aims to develop an understanding of synthesis, quantitative and qualitative analysis, separation of cations by Paper, Thin layer and Column chromatography. The students will also be trained to prepare and characterise the compounds using the available

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			techniques.
11.	P1CHPE111	Practical Course in Organic Chemistry	In this course, students will be trained to employ critical thinking and the scientific method to design, carry out, record and analyze the results of chemical experiments and get an awareness of the impact of chemistry on the environment and, society. This paper has scope of employability in academics and in research institution and pharmaceutical industries.
12.	P1CHPE112	Practical Course in Physical Chemistry	Students will employ critical thinking and the scientific method to design, carry out, record and analyze the results of chemical experiments and get an awareness of the impact of chemistry on the environment, society, and other cultures outside the scientific community. There will also be a course based on review of literature on any modern scientific topic.
13.	P1CHTE201	Organotransition Metal Chemistry	This course will enable the students to learn basic concepts, different bonding behaviour, synthetic and structural aspects of transition metal-carbon bond. Students will also gain the knowledge of applications of these compounds in various fields as catalyst with full understanding of their mechanism.
14.	P1CHTE202	Bioinorganic and Supramolecular Chemistry	The focus of this course is to enable the students to learn about the bioinorganic and molecular recognition and design of molecules for the beneficial of society.
15.	P1CHTE203	Chemistry of Heterocyclic Compounds	An exhaustive study of heterocyclic chemistry will be presented which will help the students to grasp its chemistry. This paper includes the different types of reaction mechanism in the preparation of different ring size heterocyclic compounds and also their biological importance. This will help students to get employability in Research and Development.
16.	P1CHTE204	Catalysis in Organic Synthesis	On successful completion of this course, the students will gain knowledge about asymmetric catalysis including organocatalysis and metal catalysis. This will train the students to perform asymmetric organic transformations. In addition, the learning from this course will help the students to get employment in industry and academia.
17.	P1CHTE205	Solid State Chemistry	The students will have an understanding of general principles of solid state reactions, preparation, methods and crystal symmetry, defects/structure of solids and their electronic, ionic conduction and magnetic properties.
18.	P1CHTE206	Polymer Chemistry	Basic aspects of polymer chemistry and their characterization, structure and properties of polymers, polymer processing and properties of commercial polymers are discussed in this course work.
19.	P1CHPE207	Project in Inorganic Chemistry	The Projects have been designed so as to provide exposure to students in various experimental aspects of Inorganic Chemistry. After completing this course, students will be employable in R & D divisions of Industries Research and Academic Institutes.
20.	P1CHPE208	Project in Organic Chemistry	The Projects have been designed so as to provide exposure to students in various experimental aspects of Organic Chemistry. After completing this course, students will be employable in R & D divisions of Industries Research and Academic Institutes.
21.	P1CHPE209	Project in Physical Chemistry	The Projects have been designed so as to provide exposure to students in various experimental aspects of Physical Chemistry. After completing this course, students will be employable in R & D divisions of Industries Research and Academic Institutes.