

Programme Outcomes for PG

PO1: Critical Thinking: Inculcate critical thinking to carry out scientific investigation objectively . Formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.Critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

PO2: KnowledgeSkill: Equip the student with skills to analyse problems, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof .Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems , rather than replicate curriculum content knowledge .

PO3: Scientific CommunicationSkills:Imbibe effective scientific and / or technical communication in both oral and writing. Ability to show the importance of the subject as precursor to various scientific developments since the beginning of the civilization .

PO4: Ethics: Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in the subject concerned .Ability to identify unethical behavior such as fabrication, falsification or misrepresentation of data and adoptive objective , unbiased and truthful actions in all aspects .

PO5: Enlightened Citizenship: Create awareness to become an enlightened citizen with commitment to deliver one's responsibilities within the scope of bestowed rights and privileges

PO 6: Analytical Reasoning: Ability to evaluate the reliability and relevance of evidence;identify logical flaws and holes in the arguments of others; analyse and synthesise data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.

PO 7: Multicultural Competence: Development of a set of competencies in order to enhance and promote the growth of multicultural sensitivity within universities. Integrating multicultural awareness such as race, gender, physical ability, age, income and other social variables, and by creating an environment that is , “welcoming for all students” .

PO 8: Lifelong Learning: Ability to think, acquire knowledge and skills through logical reasoning and to inculcate the habit of self-learning throughout life, through self- paced and self- directed learning aimed at personal development, and adapting to changing academic demands of work place through knowledge/ skill development/ reskilling .

PO9: Leadership Qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination in a smooth and efficient way.

PO 10: Research Skills: Prepare students for pursuing research or careers in industry in concerned subject and allied fields. Capability to use appropriate software to solve various problems and to apply programming concepts of C++ and Mathematica/ Matlab to various scientific investigations, problem solving and interpretation

Programme Specific Outcomes for PG (MSc Chemistry)

PSO 1. Scientific Problem solving skills: Deep knowledge of the topic which can develop the problem solving skills using chemical principles.

PSO 2. Analytical skills: Develop analytical skills such as synthesizing, separating, characterizing chemical compounds and chemical reaction with the help of sophisticated instruments.

PSO 3. Research skills: Develop research skills through dissertation/Project work in different fields of chemistry such as organic, nanoscience, analytical, physical etc.

PSO 4. Learning skills on life processes: Acquire advanced level of knowledge in natural products as well as biological system from the chemistry point of view.

Syllabus (MSc Chemistry)

Sl No.	Course Name	Course Code
Semester I		
1.1	Fundamentals of Inorganic Chemistry	CHIC0003
1.2	Fundamentals of Organic Chemistry	CHOC0004
1.3	Fundamentals of Physical Chemistry	CHPC0005
1.4	Introduction to Quantum Chemistry and Group Theory	CHQG0006
1.5	Inorganic Qualitative and Quantitative Analyses and Preparations - Lab	CHIQ6002
Semester II		
2.1	Advanced Inorganic Chemistry I	CHIR0007
2.2	Advanced Organic Chemistry I	CHOG0008
2.3	Advanced Physical Chemistry I	CHAP0009
2.4	Fundamentals of Spectroscopy	CHFS0010
2.5	Introduction to Green and Environmental Chemistry	CHGC0011
2.6	Experimental Physical Chemistry - Lab	CHEQ6003
2.7	Service learning	
Semester III		
3.1	Advanced Inorganic Chemistry II	CHAI0012
3.3	Advanced Organic Chemistry II	CHAO0013
3.3	Advanced Physical Chemistry II	CHAP0014
3.4	Special Topics in Biochemistry	CHSP0015
3.5	Applied Spectroscopy	CHAP0031
3.6	Research Methodology for Chemistry	CHRM0017

3.7	Organic Qualitative Analysis and Synthesis Lab	CHQA6004
Semester IV		
Electives		
4.1.1	Materials Chemistry	CHMC0018
4.1.2	Computational Chemistry	CHCC0019
4.1.3	Food Chemistry	CHFC0020
4.1.4	* Industrial Chemistry	CHIC0021
4.1.5	Medicinal Chemistry	CHMD0022
Specialization I – Inorganic Chemistry		
4.2.1	Organometallic Chemistry	CHOC0027
4.2.2	Inorganic Rings, Clusters and Polymers	CHIP0028
Specialisation II – Physical Chemistry		
4.3.1	Recent Advances in Catalysis	CHRC0023
4.3.2	Biophysical Chemistry	CHBC0024
Specialisation III – Organic Chemistry		
4.4.1	Heterocyclic Chemistry	CHHC0025
4.4.2	Natural Products Chemistry	CHNP0026
Research Project		
4.5	Research Project	CHRP6005

Mapping of MSc (Chemistry) Courses to PO/PSO

	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PS O2	PSO 3	PSO 4
1.1	H	H	H	M		H		H			H		L	
1.2	H	H	H			H		H			H		L	
1.3	H	H	H			H		H			H		L	
1.4	H	H	H			H		H			H		L	
1.5	H	M	H	H		H		M		M	H	H	H	
2.1	H	H	H	M		H		H			H		L	
2.2	H	H	H	M		H		H			H		L	
2.3	H	H	H	M		H		H			H		L	
2.4	H	H	H	M		H		H		L	H	L	M	
2.5	H	M	H	M	M	M		H			M	L	L	
2.6	H	M	H	H		H		M		M	H	H	H	
2.7	M	M	H	L	H		H	H	H		L		L	
3.1	H	H	H	M		H		H			H		L	M
3.2	H	H	H	M		H		H			H		L	M
3.3	H	H	H	M		H		H			H		L	L
3.4	H	H	H	M		H		H			H		L	H
3.5	H	H	H	H		H		H		M	H	L	H	L
3.6	H	H	H	H	L	H		H		H	M		H	
3.7	H	M	H	M		H		M		M	H	H	M	

4.1 .1	H	H	H	M		H		H			M		M	
4.1 .2	H	H	H	M		H		H			M	M	M	
4.1 .3	H	H	H	M		H		H			M		M	L
4.1 .4	H	H	H	M		H		H			M		M	
4.1 .5	H	H	H	M		H		H			M		M	L
4.2 .1	H	H	H	M		H		H		M	M		H	
4.2 .2	H	H	H	M		H		H		M	M		H	
4.3 .1	H	H	H	M		H		H		M	M		H	
4.3 .2	H	H	H	M		H		H		M	M		H	H
4.4 .1	H	H	H	M		H		H		M	M		H	H
4.4 .2	H	H	H	M		H		H		M	M		H	H
4. 5	H	H	H	H	M	H		H		H	M	H	H	M