MS in Chemistry

Program Overview:

The MS (Chemistry) program offers an exciting opportunity for students to take advantage of the conducive and thriving research environment to contribute effectively to the development of science. The Department of Chemistry is in pursuit to establish itself as an internationally recognized and globally competitive centre for graduate studies and research in a wide variety of chemical disciplines that include Advanced Organic synthesis, Polymer Science, Nanoscience and Nanotechnology, Materials Chemistry, Catalysis, Drug Discovery and Medicinal Chemistry.

Main Areas of Research:

- Advance Organic Synthesis
- Chemical Industries
- Advanced Nanochemistry
- Organometallic Complexes and Inorganic Industrial Chemistry
- Pharmaceutical Chemistry
- Biosynthesis of Natural Products
- Green Chemistry
- Radio & Nuclear Chemistry
- Synthetic Application of Named Reactions
- Advance Biochemistry
- Physical Chemistry of Environment
- Advance Separation Techniques
- Bioinorganic Chemistry
- Solution Chemistry
- Chemical Thermodynamics
- Liquid Crystal Chemistry
- Environmental Chemistry
- Polymer Chemistry
- Forensic Chemistry of Drugs & Biological Fluids
- Metabolic Pathways in Plants

- Immunochemistry
- Advances in Protein Chemistry
- Advanced Organic Chemistry
- Current Trends in Biochemistry
- Research Project Writing

For more information, please refer to the list of faculty members for their research field on the Department website.

Admission Requirement:

16 years of education or equivalent (e.g. B.E/BS – 4 years in the relevant field) from HEC recognized university with at least 60% marks (Annual System) or CGPA 2.5 out of 4.0 (Semester System).

GAT (General) with at least 50% marks or GAT (Subject) with at least 60% marks or HAT for the admission /scholarship in the specific program of study.

For more information on application deadlines, tests and other admission requirements, please visit the admissions section of the Graduate Studies Office.

Program Requirement:

The minimum and maximum durations of MS programs are 1.5 to 4 years respectively. Students must meet the following requirements for graduation:

- A minimum of 24 credit hours course work with a minimum CGPA of 2.5
- Successful defense of synopsis/ research proposal and its approval from Advanced Studies and Research Board (AS&RB).
- A minimum of 6 credit hours research work/ thesis.
- Thesis defense and viva.

Program Structure:

#	Course Codes	Course Title	Credit Hours
FIRST SEMESTER			
1		Core Course-I	3 + 0
2		Core Course -II	3 + 0
3		Core Course -III	3 + 0
4		Elective Course -I	3 + 0
SECOND SEMESTER			
1		Core Course -IV	3 + 0
2		Core Course -V	3 + 0
3		Elective Course -II	3 + 0
4		Elective Course -III	3 + 0

		TOTAL	**12**
THIRD SEMESTER			
1		Thesis	6 + 0
		TOTAL	**6**
		Total Courses	**24**
		Total Credit Hours	**30**

List of Core Courses:

S.No.	Course Code	Core Courses	Credit Hours
1	CHEM-500	Advance Inorganic Chemistry	3+0
2	CHEM-501	Modern Spectroscopic Techniques	3+0
3	CHEM-502	Research Methodology	3+0
4	CHEM-503	Principles of Physical Chemistry	3+0
5	CHEM-504	Advance Analytical Chemistry	3+0

List of Elective Courses:

S. No	Course Code	Course Title	Credit Hours
1	CHEM-601	Advance Organic Synthesis	3+0
2	CHEM-602	Chemical Industries	3+0
3	CHEM-603	Advanced Nano chemistry	3+0
4	CHEM-604	Spectroscopic Studies of Organic Molecules	3+0
5	CHEM-605	Organometallic Complexes & Inorganic Industrial Chemistry	3+0
6	CHEM-606	Pharmaceutical Chemistry	3+0
7	CHEM-607	Biosynthesis of Natural Products	3+0
8	CHEM-608	Green Chemistry	3+0
9	CHEM-609	Radio & Nuclear Chemistry	3+0
10	CHEM-610	Synthetic Application of Named Reactions	3+0
11	CHEM-611	Advance Biochemistry	3+0
12	CHEM-612	Physical Chemistry of Environment	3+0

13	CHEM-613	Advance Separation Techniques	3+0
14	CHEM-614	Bioinorganic Chemistry	3+0
15	CHEM-615	Solution Chemistry	3+0
16	CHEM-616	Chemical Thermodynamics	3+0
17	CHEM-617	Environmental Chemistry	3+0
18	CHEM-618	Polymer Chemistry	3+0
19	CHEM-619	Forensic Chemistry of Drugs & Biological Fluids	3+0
20	CHEM-620	Metabolic Pathways in Plants	3+0
21	CHEM-621	Immunochemistry	3+0
22	CHEM-622	Advances in Protein Chemistry	3+0
23	CHEM-623	Advanced Organic Chemistry	3+0
24	CHEM-624	Current Trends in Biochemistry	3+0
25	CHEM-625	Research Project Writing	3+0

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