PhD in Chemistry

Program Overview:

The Department of Chemistry is comprised of a diverse group of researchers. The teaching and research labs are well equipped with state-of-the-art experimental facilities and equipment. Students work closely with faculty who have published research articles in highly prestigious and high impact international journals including *Advanced Materials, Journal of the American Chemical Society, Nano Letters, Liquid Crystal, Polymer Bulletin,* and *ACS Journal of Medicinal Chemistry,* among several others.

Faculty members at the Department have developed impactful international collaborations with prominent national and international research groups. These collaborations are instrumental in keeping the faculty abreast of the latest developments in the field and advanced technology platforms and high-tech equipment.

The faculty research groups are actively working to develop world-class research programs in Nanoscience and Nanotechnology, Macromolecular Chemistry, Green Synthesis/Catalysis, Renewable Energy Technologies, Drug Discovery, Medicinal Chemistry, Polymer, Analytical, Healthcare and Environmental Remediation.

Main Areas of Research:

- Photochemistry
- Advanced Physical Chemistry
- Special Topics in Physical Chemistry
- Advance Surface and Colloidal Chemistry
- Advanced Composite Materials
- Statistical Thermodynamics and Mechanics
- Colloids and Surfactants
- Polymer Chemistry
- Energy and Pollution

- Mathematics for Chemists
- Statistical Treatment of Experimental Data
- Advanced Spectroscopy
- Advanced Quantum Chemistry
- Analytical Chemistry
- Radio Analytical Methods and Quality Assurance
- Radio Kinetics of Surface Reaction
- Automation and Thermal Analysis
- Environmental Analysis
- Polymer Chemistry
- Radiation Chemistry
- Aquatic Chemistry
- Modern Chromatographic Techniques
- Tribology
- Advance Asymmetric Synthesis
- Advanced Heterocyclic Chemistry
- Advanced Stereochemistry
- Advanced Organic Reactions and Mechanism
- Modern Concepts in Organic Synthesis
- Principles of Medicinal Chemistry

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

Admission Requirement:

MS/MPhil in Chemistry (16 years of Education) from HEC recognized university with a minimum of 30 credit hours (24 credit hour graduate-level courses + 6 credit hours thesis) with CGPA 3 out of 4.
GRE (International) subject test with at least 60 percentile score or GAT subject test with minimum 60 % marks.
It is suggested to have a look at the already edited available details on the website
https://www.buitms.edu.pk/Chemistry

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 duration of PhD programs are 3 to 8 years. Students must meet the following requirements for graduation:

- Confirmation of PhD candidature
- Positive examiners, reports / addressal of reviewers comments
- Successful public defense and viva
- Publication of at least one paper in a journal as per HEC policy before the award of the PhD degree.

Program Structure:

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

1		Doctoral Dissertation	
		Total Courses	**18**
		Total Credit Hours	**18**

List of Elective Courses:

S.No.	Course Code	Course Title	Credit Hours
1	CHEM-801	Photochemistry	3
2	CHEM-802	Advanced Physical Chemistry	3
3	CHEM-803	Special Topics in Physical Chemistry	3
4	CHEM-804	Advance Surface and Colloidal Chemistry	3

5	CHEM-805	Advanced Composite Materials	3
6	CHEM-806	Statistical Thermodynamics and Mechanics	3
7	CHEM-807	Colloids and Surfactants	3
8	CHEM-808	Polymer Chemistry	3
9	CHEM-809	Energy and Pollution	3
10	CHEM-810	Mathematics for Chemists	3
11	CHEM-811	Statistical Treatment of ExperimentalData	3
12	CHEM-812	Advanced Spectroscopy	3
13	CHEM-813	Advanced Quantum Chemistry	3
14	CHEM-814	Analytical Chemistry	3

15	CHEM-815	Radio Analytical Methods and Quality Assurance	3
16	CHEM-816	Radio Kinetics of Surface Reaction	3
17	CHEM-817	Automation and Thermal Analysis	3
18	CHEM-818	Environmental Analysis	3
19	CHEM-819	Polymer Chemistry	3

Contact Information:

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