Ph D Chemistry 3 Years (6 semesters) Program

Semester	Credit Hours		
	Theory	Research	Total
1st	10	0	10
2nd	10	0	10
3rd & 6th	0	06	06
Total	18	06	26

Eligibility: 18 years of education i.e. M.Phil./M.S. in Chemistry or equivalent in the relevant field with min. 3.00/4.00 CGPA (in semester system) or 60% (in annual system). If the CGPA/Percentage is not mentioned on the transcript, the candidate must produce equivalent weightage from the parent university. The students having strong demonstrated interest in obtaining PhD degree, but their CGPA is below 3.00 (out of 4.0 in the semester system) or 60% marks (in the annual system) in the most recent degree obtained, may be admitted to a PhD program after fulfilling the following requirements:

Shall study additional courses of 9-12 CH of level 7 taking a zero semester at admission awarding university/HEI/DAI and score minimum 3.00 out of 4.00 GPA, and Qualifying GAUS entry test GRE-Subject type (min 70% marks) and interview is mandatory to qualify for the admission in the said program.

Valid scores (60% cumulative and/or 60% percentile) in GAT/GRE General/Subject test conducted by the authorized/approved Testing and evaluation Agencies is also acceptable for the admission in program.

Program Duration: 3 Year; 6 semesters (minimum) and up to 12 semesters (06 years maximum)

Degree Requirements: 24 credit hours with the following breakup:

Course work (Two semesters) = (9 + 9 = 18) credit hours

Understanding of Quran – I (UHQ-701) & II (THQ-702) = 02 Credit hours (02 courses) (For Muslim students only).

Research Thesis (One to two semesters) = 6 credit hours

Thesis defense/viva voce examination (final)

Total Credit Hours = 26

Semester Duration: 16-18 weeks for regular semesters (1-2 weeks for examination) 8-9 weeks for summer semesters (1 week for examination)

Course Load (per semester): 09-12 credit hours for regular semesters, up-to 8 credit hours for summer semesters (for remedial/deficiency/failure/repetition courses only)

3 Credit Hours (Theory): 3 classes (1 hour each) or 2 classes (1.5 hour each) or 1 class (3 hours) per week throughout the semester

Research Publication

For award of PhD degree, a PhD researcher shall be required to publish 1st author one W category or two X category research articles.

Note: Department of Chemistry may offer summer sessions after 2nd, 4th and 6th semesters.

In case a student is unable to secure a PhD degree within the prescribed timeframe and claims for extension in duration, the university may constitute appropriate authority and determine the causes for delay. In event of force majeure i.e., delay on account of circumstance beyond the control of student, the university may grant an extension in the period of award of PhD degree in accordance with the duration limiting factor(s) and shall also take corrective measures in case the delay is caused due to process or administrative reasons.

Ph D Three Years Program
Year 1 (Two Semesters): Course Work Year
2 & 3 (Four Semesters): Ccomprihensive &Research Work

Semester – I			
Course Code	**CourseTitle**	**Credit Hours**	**Catagory**
CHEM-XXX	Elective – I	3(3-0)	Elective
CHEM-XXX	Elective – II	3(3-0)	Elective
CHEM-XXX	Elective – III	3(3-0)	Elective
UHQ-801	Understanding of Quran – I **	(0-1)	General
Total Credit Hours		**10**	
Semester – II			
CHEM-XXX	Elective – IV	3(3-0)	Elective
CHEM-XXX	Elective – V	3(3-0)	Elective
CHEM-XXX	Elective – VI	3(3-0)	Elective
UHQ-802	Understanding of Quran – II **	(0-1)	General
Total Credit Hours		**10**	
Semester – III to VI			
	Comprehensive Examinations	0	
CHEM-810	Seminar, Research Thesis / Dissertation & Final Viva Voce examination	6(0-6)	Research
Total Credit Hours		**6**	
MS Chemistry Total Credit Hours:		**26**	

ELECTIVE COURSES DETAILS FOR PhD IN CHEMISTRY PROGRAMS

COURSES OF INORGANIC/ANALYTICAL CHEMSITRY (Course code)

Advanced Spectroscopic Techniques (CHEM-702)
Solid State Chemistry (CHEM-703)
Chemistry of Organometallics (CHEM-704)
Advanced Chromatographic Techniques (CHEM-705)
Inorganic electronic spectroscopy (CHEM-706)
Kinetics and Mechanisms of Inorganic Reactions (CHEM-712)
Bioanalytical Chemistry (CHEM-713)
Metal-based drugs (CHEM-714)
Nanochemistry (CHEM-715)

Green Chemistry Techniques (CHEM-716)
Thermal Analysis (CHEM-717)
Validation of Analytical Methods (CHEM-718)
Nuclear medicine (CHEM-719)
Food, pharmaceutical and Forensic analysis (CHEM-720)
Advanced Electroanalytical Techniques (CHEM-721)
Inorganic Material Chemistry (CHEM-722)
Characterization of Natural Antioxidants and Essential Oils (CHEM-723)

COURSES OF ORGANIC CHEMSITRY (Course code)
Natural ProductsChemistry (CHEM-724)
Synthetic Applications of Named Reactions (CHEM-725)
Advanced Spectroscopy (CHEM-726)
Advanced Heterocyclic Chemistry (CHEM-727)
Organic Polymer Chemistry (CHEM-728)
Pharmaceutical Chemistry (CHEM-729)
Supramolecular Chemistry (CHEM-730)
Phytochemical Techniques (CHEM-731)
Modern Trends in Asymmetric Synthesis (CHEM-732)
Advanced Stereochemistry (CHEM-733)
PericyclicChemistry (CHEM-734)
Organic Compoundscontaining S, P & Si (CHEM-735)
Dyes and Pigments (CHEM-736)
Physical Organic Chemistry (CHEM-737)

COURSES OF PHYSICAL CHEMSITRY (Course code)
Polymers and Advanced Composite Materials (CHEM-738)
Advanced Quantum Chemistry (CHEM-739)
Advanced Photochemistry and Radiation Chemistry (CHEM-740)
Advanced Electrochemistry (CHEM-741)
Surface Chemistry (CHEM-742)
Advanced Statistical Thermodynamics (CHEM-743)
Biophysical Chemistry (CHEM-744)
Chemistry of Atmosphere (CHEM-745)
Advanced Solid State Chemistry and Characterization Techniques (CHEM-746)
Advanced Reactions Dynamics (CHEM-747)
Nanomaterials (CHEM-748)
Magnetic Spin Dynamics (CHEM-749)
Applied Nuclear Chemistry (CHEM-750)

COURSES OF APPLIED CHEMSITRY (Course code)
Environmental Impact of Chemical Industries (CHEM-751)
Nanomaterials and their applications (CHEM-752)
Chemistry of Dyes and Pigments (CHEM-753)

Pharmaceutical Chemistry (CHEM-754)
Advanced Polymer Chemistry (CHEM-755)
Agrochemicals (CHEM-756)
Physical Structure of Porous Materials (CHEM-757)
Industrial Process Chemistry (CHEM-758)
Advances in Petrochemical Industries (CHEM-759)
Coal Gasification and Liquefaction Alternative Fuels (CHEM-760)
Nuclear Fuel Processing and waste management (CHEM-761)
Alternative Energy Sources (CHEM-762)

Note: Any other course according to the availability of facilities, expertise in the institution may be offered.