

Scheme of Studies
MPhil and PhD Chemistry

**MIRPUR UNIVERSITY OF SCIENCE AND
TECHNOLOGY (MUST), MIRPUR
AZAD JAMMU & KASHMIR**

**SCHEME OF STUDIES FOR MASTER OF PHILOSOPHY IN
CHEMISTRY**

Duration:	4-8 Semesters
Courses:	24 credits
Thesis:	06 credits
Seminar:	01 credits
Total:	<u>31 Credits</u>

SCHEME OF STUDIES FOR DOCTOR OF PHILOSOPHY IN CHEMISTRY

Duration:	Semesters
Courses:	18 credits
Thesis:	50 credits

Seminar-I:	01 Credit
Seminar-II:	01 Credit
Total:	<u>70 Credits</u>

M.Phil. and Ph.D. COURSE CODES

I. Physical Chemistry

CHM-701	Physical Chemistry of Polymers (Cr. 3)
CHM-702	Advanced Quantum Chemistry (Cr. 3)
CHM-703	Electrode Process (Cr. 3)
CHM-704	Magnetic Resonance Spectroscopy (Cr. 3)
CHM-705	Advanced Chemical Kinetics (Cr. 3)
CHM-706	Advanced Molecular Spectroscopy (Cr. 3)
CHM-707	Advanced Photochemistry (Cr.3)
CHM-708	Advanced Surface Chemistry (Cr. 3)
CHM-709	Advanced Solution Chemistry (Cr. 3)
CHM-710	Chemistry of Advanced Materials (Cr. 3)
CHM-711	Advanced Statistical Mechanics (Cr. 3)
CHM-712	Solid State chemistry (Cr. 3)
CHM-713	Colloid Chemistry (Cr. 3)
CHM-714	Advanced Nuclear and Radiation Chemistry (Cr. 3)
CHM-715	Applied Chemical Thermodynamics (Cr. 3)
CHM-716	Electroanalytical Methods and Techniques (Cr. 3)
CHM-717	Special Topics in Physical Chemistry (Cr. 3)
CHM-718	Physical Chemistry of Environment (Cr.3)
CHM-719	Special Topics in Physical Chemistry (Cr. 3)
CHM-720	Polymer Physics (Cr. 3)

II. Inorganic Chemistry

CHM-721	Multinuclear NMR Spectroscopy (Cr. 3)
CHM-722	Inorganic Electronic Spectroscopy (Cr. 3)
CHM-723	Kinetics and Mechanisms of Inorganic Reactions (Cr. 3)
CHM-724	Organo-transition Metal Chemistry (Cr. 3)
CHM-725	Bio-Inorganic Chemistry (Cr. 3)
CHM-726	Physical Methods in Inorganic Chemistry (Cr. 3)
CHM-727	Inorganic Material Chemistry (Cr. 3)
CHM-728	Catalysis (Cr. 3)
CHM-729	Special Topics in Inorganic Chemistry (Cr. 3)
CHM-730	Advanced Material Chemistry (Cr. 3)

III. Organic Chemistry

CHM-741	Protecting Groups in Organic Synthesis (Cr. 3)
CHM-742	Organic Synthesis-Retrosynthetic Approach (Cr. 3)
CHM-743	Advanced Stereochemistry (Cr. 3)
CHM-744	Physical Organic Chemistry (Cr. 3)
CHM-745	Nuclear Magnetic Resonance in Organic Chemistry (Cr. 3)
CHM-746	Advances in Chromatographic Techniques (Cr. 3)
CHM-747	Chemistry of Isoprenoids and Steroids (Cr. 3)
CHM-748	Chemistry of Glycosides (Cr. 3)
CHM-749	Biosynthesis of Natural Products (Cr. 3)
CHM-750	Chemistry of Organometallic Compounds (Cr. 3)
CHM-751	Reactive Intermediates in Organic Chemistry (Cr. 3)
CHM-752	Advanced Heterocyclic Chemistry (Cr. 3)
CHM-753	Advanced Mass Spectrometry (Cr. 3)
CHM-754	Organic Photochemistry (Cr. 3)
CHM-755	Organic Polymer Chemistry (Cr. 3)
CHM-756	Pericyclic Reactions (Cr. 3)
CHM-757	Advanced Stereoselective Synthesis (Cr. 3)
CHM-758	Modern Name Reactions in Organic Synthesis (Cr. 3)
CHM-759	Special Topics in Organic Chemistry (Cr. 3)

CHM-760 Advanced Natural Product Chemistry (Cr. 3)

IV. Analytical Chemistry

CHM-761 Frontiers Nanomaterials for Bio-applications (Cr. 3)

CHM-762 Advanced Analytical Instrumental Techniques (Cr. 3)

CHM-763 Advanced Thermal Analysis (Cr. 3)

CHM-764 Water and Soil Chemistry (Cr. 3)

CHM-765 Analysis and Characterization of Polymers (Cr. 3)

CHM-766 Advanced Atomic Spectroscopy (Cr. 3)

CHM-767 Atmospheric Chemistry (Cr. 3)

CHM-768 Chromatographic Methods of Analysis (Cr. 3)

CHM-769 Special Topics in Analytical Chemistry (Cr. 3)

CHM-770 X-Ray Methods of Analysis (Cr. 3)

CHM-771 Applied Industrial Processes (Cr. 3)

CHM-772 Special Topics in Analytical Chemistry (Cr. 3)

CHM-773 Diffraction Methods of Analysis (Cr. 3)

V. Biochemistry

CHM-781 Biochemistry of Disease (Cr. 3)

CHM-782 Advances in enzyme structure and function (Cr. 3)

CHM-783 Fermentation and Biotransformation (Cr. 3)

CHM-784 Fundamentals of Molecular Biology (Cr. 3)

CHM-785 Metabolomics (Cr. 3)

CHM-786 Metabolic regulations (Cr. 3)

CHM-787 Biological Oxidations (Cr. 3)

CHM-788 Lab Techniques in Biochemistry (Theory + Lab Work) (Cr. 3)

CHM-789 Biostatistics (Cr. 3)

CHM-790 Research Methodology and scientific writing (Cr. 3)

CHM-791 Techniques in Molecular Biology (Cr. 3)

CHM-792 Special Topics in Bio Chemistry (Cr. 3)

CHM-793 Forensic Chemistry (Cr. 3)

