

Master of Science (M.Sc.) in Chemistry – Analytical Chemistry

Duration: 2 Years (4 Semesters)

Program Type: Postgraduate Degree Program

Note: Subject codes vary among universities. The following is a standard university-style syllabus with commonly used subject codes.

Semester I

Subject Code	Subject Name
ACH101	Advanced Inorganic Chemistry
ACH102	Advanced Organic Chemistry
ACH103	Physical Chemistry
ACH104	Analytical Chemistry-I
ACH105P	Analytical Chemistry Laboratory-I
ACH106	Mathematical Methods for Chemists

Key Topics

- Chemical Bonding and Coordination Chemistry
 - Reaction Mechanisms in Organic Chemistry
 - Thermodynamics and Chemical Kinetics
 - Fundamentals of Analytical Chemistry
 - Error Analysis and Data Treatment
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Semester II

Subject Code	Subject Name
ACH201	Spectroscopic Methods of Analysis
ACH202	Separation Techniques
ACH203	Instrumental Analysis
ACH204	Environmental Analytical Chemistry
ACH205P	Analytical Chemistry Laboratory-II
ACH206	Research Methodology

Key Topics

- UV-Visible Spectroscopy
 - IR, NMR and Mass Spectrometry
 - Chromatographic Techniques
 - Electrophoresis
 - Environmental Monitoring and Analysis
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Semester III

Subject Code	Subject Name
ACH301	Advanced Instrumental Techniques
ACH302	Electro analytical Methods
ACH303	Pharmaceutical Analysis
ACH304	Industrial Analytical Chemistry
ACH305P	Advanced Analytical Laboratory
ACH306	Seminar & Literature Review

Key Topics

- Atomic Absorption Spectroscopy (AAS)
 - ICP-OES and ICP-MS
 - Voltameters and Paleography
 - Drug Analysis and Validation
 - Industrial Quality Control
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Semester IV

Subject Code	Subject Name
ACH401	Advanced Environmental Analysis
ACH402	Food and Forensic Analysis
ACH403	Quality Assurance and Validation
ACH404	Chemo metrics and Data Analysis
ACH405	Dissertation / Major Project
ACH406	Viva Voce