

M. Sc. (Five years integrated) course structure

	I Semester	II Semester
I Year	MA-101: Mathematics I (4) PH-101 : Mechanics (4) : English I (3) CY-101 : Stoichiometry, solutions and gases (3) SB-101 : Environmental studies (3) PH-102 : Mechanics Lab I (1.5) CY-102 : Qualitative analysis (1.5) : Biology Lab I (1.5) : IT Lab I (1.5) <p style="text-align: right;">(23 credits)</p>	MA-151 : Mathematics II (4) PH-151 : Waves, Oscillations, Sound and Light (3) CY-151 : Energetics and kinetics (3) SB-151 : Introductory Biology (3) PH-152 : Waves and Oscillations, Sound and Light Lab (1.5) CY-152 : Quantitative analysis (1.5) : Introductory Biology Lab II (1.5) : IT Lab II (1.5) <p style="text-align: right;">(19 credits)</p>
	III Semester	IV Semester
II Year	MA-201 : Mathematics III (4) PH-201 : Electricity and Magnetism (4) SB-201 : Molecules, genes and information processing (3) CY-201 : Structural chemistry (3) PH-202 : Electricity and Magnetism Lab (1.5) CY-202 : Physical chemistry Lab (1.5) : Molecules and Information Processing Lab. (1.5) <p style="text-align: right;">(18.5 credits)</p>	MA-251 : Mathematics IV (3) PH-251 : Modern Physics (4) SB-251 : Structure and function of Macromolecules (3) CY-251 : Basic organic chemistry (3) : Elective - II (3) PH-252 : Physics Lab IV (1.5) CY-252 : Identification of organic compounds Lab (1.5) : Biology Lab IV (1.5) Elective of 4 Credits from: CY-253: Introductory Supramolecular Chemistry (2) CY-254: Elementary Polymer Chemistry (2) <p style="text-align: center;">OR</p> any other Science Course (Physics/Maths/Biology) up to 4 Credits <p style="text-align: right;">(24.5 credits)</p>

	V Semester	VI Semester
III Year	CY-301 : Inorganic chemistry (3) CY-302 : Organic chemistry: Functional group transformations (3) CY-303 : Analytical chemistry (3) CY-304 : Surface and electrochemistry (3) CY-305 : Organic chemistry Lab (2) CY-306 : Analytical chemistry Lab (2) CY-307 : Open-ended Lab (2)	CY-351 : Instrumental methods of Analysis (3) CY-352 : Industrial and environmental Chemistry (3) CY-353 : Organic chemistry: Reactions and natural products (3) CY-354 : Computer programming and Numerical methods (3) CY-355 : Inorganic chemistry Lab (2) CY-356 : Industrial chemistry Lab (2) CY-357 : Open-ended Lab (2)
	(18 credits)	(18 credits)

	VII Semester	VIII Semester
	CY-401: Basic concepts and coordination chemistry (3) CY-402: Physical organic chemistry (3) CY-403: Quantum chemistry (3) - CY-404: Mathematics for chemists (3) CY-405: Inorganic Chemistry Lab: Quantitative and Qualitative analysis (3) CY-406: Organic chemistry Lab: Techniques (3) <div style="text-align: right;">(18 credits)</div>	CY-451: Main group and inner transition elements (3) CY-452: Organic reactions and mechanisms (3) CY-453: Molecular spectroscopy (3) CY-454: Chemical and Statistical thermodynamics (3) CY-455: Biological Chemistry (3) CY-456: Inorganic chemistry Lab: Synthesis (3) CY-457: Physical chemistry Lab (3) <div style="text-align: right;">(21 credits)</div>
	IX Semester	X Semester
	CY-501: Spectroscopic methods for structure elucidation (3) CY-502: Advanced organic synthesis (3) CY-503: Chemical dynamics (3) CY-504: Chemical Binding (3) CY-505: Advanced Inorganic Chemistry (3) CY-506: Organic chemistry Lab: Synthesis(3) CY-507: Instrumentation and computer applications Lab (3) <div style="text-align: right;">(21 credits)</div>	CY-551: Chemistry of materials (3) CY-552: Seminar (3) CY-553: Project (3) Electives of 6 Credits from CY-571 to 582 <div style="text-align: right;">(15 credits)</div>
IV Year		
V Year		

NOTE: The above courses are the minimum requirement for the degree. Students are encouraged to take extra electives in all semesters which will earn Extra-credits for them.