

B.Sc. Hons./Research Computational Chemistry (4 Year) NEP

Semester-Wise Programme structure for B.Sc. (H) Chemistry [4 year]

| S.No. | Year 1 | | Year 2 | | Year 3 | | Year 4 | | |
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| | Semester 1 | Semester 2 | Semester 3 | Semester 4 | Semester 5 | Semester 6 | Semester 7 | Semester 8 (Hons.) | Semester 8 (Hons. with research) |
| 1 (MAJOR) | Organic Chemistry-I (Basics & Hydrocarbons) [CU:4; L-4, P-0] {MCC} | Physical Chemistry-I (States of Matter & Ionic Equilibrium) [CU:4; L-4, P-0] {MCC} | Organic Chemistry-II (Functional Groups-I) [CU:4; L-4, P-0] {MCC} | Physical Chemistry-II (Chemical Thermodynamics & equilibrium) [CU:6; L-4, P-2] {MCC} | Physical Chemistry-III (Phase Equilibria & Chemical Kinetics) [CU:6; L-4, P-2] {MCC} | Inorganic Chemistry-IV (d and f block elements) [CU:6; L-4, P-2] {MCC} | Physical Chemistry-V (Quantum Chemistry & Photochemistry) [CU:4; L-3, P-1] {MCC} | Introduction to Heterocyclic Chemistry [CU:4; L-3, P-1] {MCC} | Introduction to Heterocyclic Chemistry [CU:4; L-3, P-1] {MCC} |
| | Inorganic Chemistry-I (Atomic Structure & Chemical Bonding) [CU:4; L-3, P-1] {MCC} | Computational Chemistry-I (Basic Computational Chemistry) [CU:4; L-3, P-1] {MCC} | Computational Chemistry-II (Computational Methods in Chemistry) [CU:4; L-3, P-1] {MCC} | Inorganic Chemistry-II (s and p Block Elements) [CU:6; L-4, P-2] {MCC} | Organic Chemistry-III (Functional Groups-II) [CU:6; L-4, P-2] {MCC} | Physical Chemistry-IV (Electrochemistry) [CU:4; L-4, P-0] {MCC} | Organic Chemistry-V (Advanced Organic Synthesis) [CU:4; L-3, P-1] {MCC} | Computational Chemistry-III [CU:4; L-3, P-1] {MCC} | Analytical Chemistry-III [CU:4; L-3, P-1] {MCC} |
| | | | | | Inorganic Chemistry-III (Nuclear Chemistry) [CU:4; L-4, P-0] {MCC} | Organic Chemistry-IV (Organic Spectroscopy) [CU:6; L-4, P-2] {MCC} | Inorganic Chemistry-V (Organometallic Chemistry) [CU:4; L-3, P-1] {MCC} | Organo-photochemistry [CU:4; L-3, P-1] {MCC} | |
| 2 (MINOR) | Chemical foundations of Cosmetology [CU:4; L-3, P-1] {MC} | Green Chemistry-I [CU:4; L-3, P-1] {MC} | Green Chemistry-II [CU:4; L-3, P-1] {MC} | Green Chemistry-III [CU:4; L-3, P-1] {MC} | Foundation of Industrial chemistry: From Theory to Applications [CU:4; L-3, P-1] {MC} | Green Chemistry-IV [CU:4; L-3, P-1] {MC} | | | Foundations of Research and Ethics [CU:2; L-2, P-0] {MCC} |
| | | | | | Water Chemistry and Remediation [CU:2; L-2, P-0] {MC} | Chemistry of Biomolecules [CU:2; L-2, P-0] {MC} | Fundamentals of Polymer Chemistry/Natural Products/Inorganic Materials for Industrial significance [CU:8; L-6, P-2] {CC} | Instrumental Analysis/Solid State Chemistry/Medicinal Chemistry [CU:4; L-3, P-1] {CC} | |
| 3 (MDC) | Mathematics for Chemists [CU:3; L-2, P-1] {MDC} | Physics for Chemists [CU:3; L-3, P-0] {MDC} | MOOC Courses [CU:3; L-3, P-0] {MDC} | | | | | | Cages and Clusters [CU:4; L-4, P-0] {MC} |

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| 4 (SEC) | Chemistry Lab skills-I [CU:3; L-0, P-3] {SEC} | Chemistry Lab skills-II [CU:3; L-0, P-3] {SEC} | Chemistry Lab skills-III [CU:3; L-0, P-3] {SEC} | Introduction to Intellectual Property Rights [CU:3; L-3, P-0] {SEC} | | | | | RESEARCH [CU:6; PS-6] {IL} |
| 5 (VAC) | Behavioral Science (PSY101) [CU:1, L-1] {VAC} | Behavioral Science (PSY101) [CU:1, L-1] {VAC} | | | | | | | |
| | Environmental Studies (ENV101) [CU:2, L- 2] {AEC} | Environmental Studies (ENV101) [CU:2, L- 2] {AEC} | | | Summer Internship [CU:4] | | | | |
| 6 (AEC) | Introduction to French Culture & Language (FOL101)/ Introduction to German Culture & Language (FOL102) [CU:1, L-1] {AEC} | Introduction to French Culture & Language (FOL101)/ Introduction to German Culture & Language (FOL102) [CU:1, L-1] {AEC} | | | | | | | |
| | Punjabi (INL101)/ History and Culture of Punjab for BSc (INL102) [CU:1, L- 1] {AEC} | Punjabi (INL101)/ History and Culture of Punjab for BSc (INL102) [CU:1, L- 1] {AEC} | Introduction to Communication Skills [CU:2, L- 2] {VAC} | Professional Etiquette and Presentation Skills [CU:2, L- 2] {VAC} | | | | | |
| | 23 | 23 | 20 | 21 | 22 + 4 | 22 | 24 | 20 | 20 |