

Department of Chemistry

Programme Specific Outcome (UG)

The B Sc (Honours) in Chemistry is designed by Bodoland University in such a way that the students can acquire sufficient knowledge of Chemistry at their level. This will open the door of their higher studies in the field of Chemistry. The programme is designed with an expectation that it will generate scientific mind-set among the students. They will be interested for analytical studies and this will force them for research activities.

Course Outcomes (UG)

CO of CHY101H (CC-1): This course is designed to provide knowledge of atomic structure and chemical bonding in details.

CO of CHY102H (CC-2): From this course the students will acquire the knowledge of different state of matter and ionic equilibrium.

CO of CHY201H (CC-3): Through this course the students will learn about various organic compounds, stereo-chemistry of the molecules and mechanism of reactions.

CO of CHY202H (CC-4): From this the students will be able to know about knowledge of thermodynamics. They will also learn about colligative property.

CO of CHY301H(CC-5): Through this course the students will learn about metallurgy, s & p block elements and inorganic polymers.

CO of CHY302H(CC-6): This course will teach the students about haloalkane, alcohol, phenol and carbonyl compounds.

CO of CHY303H(CC-7) Through this course student will know about the phase rule, chemical kinetics and surface chemistry

CO of CHY304H(SEC-1): This course will provide different technique of analytical chemistry.

CO of CHY401H (CC-8): Through this course students will be able to know IUPAC nomenclature of coordination chemistry, about lanthanides and actinides and bioinorganic chemistry.

CO of CHY402H (CC-9): Through this course the students will know the heterocyclic chemistry, terpenes and alkaloids

CO of CHY403H(CC-10):Through this course student will be able to know about the conductance and electrochemistry.

CO of CHY404HR (SEC-2): The students will acquire the knowledge fuel chemistry.

CO of CHY501H (CC-11): Through this course the students learn Biochemistry and pharmaceutical chemistry.

CO of CHY502H (CC-12): From this course students will learn about quantum chemistry and molecular spectroscopy.

CO of CHY-HR(DSE-1): Through this course the students will learn about analytical method in chemistry.

CO of CHY-HR(DSE-2): Through this course students will be able to know about instrumental method in chemical analysis.

CO of CHY601H(CC-13): Through this course students will be able to know about organo metallic and Catalysis by Organometallic Compounds

CO of CHY602H(CC-14): Here students will study organic spectroscopy (UV, IR and NMR), carbohydrate and dye chemistry..

CO of CHY-H(DSE-3): Through this course students learn about the computer in chemistry.

CO of CHY-H (DSE-4): The students will prepare a dissertation by project work.

The methods followed for the measurement of Programme Specific Outcome are–

1. By providing home assignment
2. Taking periodic unit tests.
3. Arranging departmental seminars where the students give power point presentations on topics related to the syllabus
4. Revision of units with question – answer discussion.

Programme Specific Outcome (PG)

CO of CHM 101: Students will be able to explain the fundamentals of equilibrium and non-equilibrium thermodynamics, statistical mechanics, polymer chemistry and dynamic electrochemistry and solving problems.

CO of CHM 102: Students will be able to appreciate/demonstrate/explain the unique features of organic reactions mechanism, reaction intermediates, Hammett equation and stereochemistry, and solve related problems.

CO of CHM 103: Students will be able to explain/critically examine the chemistry of acid base, chemical bonding, redox reaction and solid chemistry.

CO of CHM 104: Students will be able to carry concept on UV, IR, ESR and NMR spectroscopy

CO of CHM 105: Students will be able to perform qualitative and quantitative analysis of organic compounds and mixtures, implement multi-step organic synthesis and operate common/sophisticated instruments.

CO of CHM 106: Students will be able to carry knowledge about rubber chemistry in details.

CO of CHM 201: Students will be able to describe/examine the concepts and theories of chemical kinetics, quantum mechanics, surface chemistry and catalysis.

CO of CHM 202: On the completion of the course students will acquire the detailed knowledge on photochemical, pericyclic, oxidation and reduction reactions.

CO of CHM 203: Students will be able to describe/examine the concepts of coordination chemistry, organometallic, lanthanide and actinide chemistry.

CO of CHM 204: Students will be able to explain the basic working principle of vibrational, magnetic resonance and mass spectroscopic techniques and their application to establish structure of organic molecule.

CO of CHM 205: Students will be able to carry knowledge about qualitative and quantitative analysis of mixture of metal ions, alloys etc.

CO of CHM 206: Students will be able to carry knowledge about environmental benign polymer, Method of recycling of polymer.

CO of CHM 301: Students will be able to describe and interpret the quantum chemistry and chemical bonding.

CO of CHM 302: Students will be able to explain/demonstrate the application of different analytical techniques in chemistry.

CO of CHM 303: Students will be able to demonstrate an understanding of environmental chemistry, viz. air, water and soil chemistry and identify the relationships between atmosphere, solar radiation and ozone formation.

CO of CHM 304: Students will get knowledge in nanochemistry, supramolecular chemistry and advanced NMR.

CO of CHM 305: The students will be able to carry experimental knowledge on chemical kinetics, conductance and determination of P^H

CO of CHM 306E5: Students will be able to demonstrate an understanding of supramolecular chemistry, and dendrimers.

CO of CHM401: This course will help the students to understand different methods of polymerization, their kinetics, modern characterization of polymer.

CO of CHM402: This course will help the students to understand details idea on carbohydrate, heterocyclic chemistry, porphyrin chemistry, terpene and alkaloid chemistry.

CO of CHM409: Students will learn the role of metal ions in functioning of biological systems, toxicity due to metal ions, the role in a diseases and therapy and metalloenzyme.

CO of CHM 410: Following the completion of this course, students should be able demonstrate ability to plan and strategize a scientific research problem, and implement it within a reasonable time-frame. It is expected that after completing this project dissertation, students will learn to work independently and how to keep accurate/readable record of their experimental work. In addition, students will be able to handle laboratory equipment and chemicals. Also, students will be able to utilize sophisticated instruments for analysis, data collection and interpretation. Subsequently, the students should be able to critically examine research articles, and improve their scientific writing/communication skills.

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