CHEM - CHEMISTRY POST BACCALAUREATE

CHEM 1000 Survey of Chemistry (3 Credit Hours)
This course is an introduction to the principles of general, organic, and biological chemistry that are relevant to students interested in health-related and other professions. Students will gain familiarity with concepts such as: atomic theory, measurements, significant figures, dimensional analysis, chemical compounds and their bonds, molecular geometry, polarity, the mole concept, and stoichiometry, redox reactions and energetics of chemical reactions, gases, solutions, acids and bases and nuclear chemistry. This will be followed by a thorough introduction to structural formulas, chemical and physical properties of organic compounds and, finally the biochemistry of nucleic acids, carbohydrates, lipids, proteins, and metabolism. Course Learning Outcomes include: 1. Investigate the nature of matter and matter's composition 2. Describe and compute concentrations of mixtures (such as solutions, colloids, and suspensions). 3. Discuss qualitative and quantitative aspects of acids and bases and their reactions. 4. Discuss radiation, including the sources, measurement, uses, and harmful effects. 5. Examine redox reactions and the energetics of these reactions. 6. Examine the complexity of molecular interactions essential to living organisms. 7. Investigate the theory of gases 8. Discriminate structural formulas of organic compounds to name compounds, identify functional groups, or evaluate isomerism. 9. Compare structures of organic compounds and relate them to physical and chemical properties. 10. Predict products of chemical reactions based on functional groups in the reactants. 11. Analyze structures or levels of organization of carbohydrates, lipids, or proteins. 12. Describe the biological roles and chemical reactions of biomolecules. 13. Interpret the metabolic pathways that release energy from biomolecules.
Academic Level: Undergraduate

CHEM 1010 General Chemistry I (3 Credit Hours)
Online General Chemistry I is designed to give the student an introduction to general chemistry. The concepts covered in this course include components of matter, atomic theory, stoichiometry, chemical reactions and bonding, thermochemistry, gases, quantum theory, electron configuration, models of bonding, theories of covalent bonding, shapes of molecules and intermolecular forces of liquids, and solids. The course is designed to take lecture and lab concurrently for four credits. However, students have the option to take lecture only (three credits) or lab only (one credit) Course Pre Req: One semester of College Algebra.
Equivalent to DPPP 340. Additional fees may exist.
Academic Level: Undergraduate

CHEM 1010L General Chemistry I Lab (1 Credit Hours)
This lab course is designed at a level to provide an introductory-level, college general chemistry I course. An emphasis is placed on understanding the concepts within the labs and the scientific method. Since today's healthcare professionals are expected to have a general understanding of how science and the scientific method contribute to their profession, this course is designed to serve this purpose as well as provide a general chemistry lab appropriate for a number of applications. The hands-on labs will be performed in the home of the student using a designated lab kit. Course pre-req: one semester of college algebra.
Academic Level: Undergraduate

CHEM 1011 General Chemistry II (3 Credit Hours)
Online General Chemistry II is designed to give the student an introduction to general chemistry. The subjects covered in this course include mixtures, trends in the periodic table, organic chemistry, kinetics, chemical equilibrium, acid-base equilibria, thermodynamics, electrochemistry, elements in nature, chemistry of transition elements, and nuclear chemistry. The course is designed to take lecture and lab concurrently for four credits. However, students have the option to take lecture only (three credits) or lab only (one credit.) Course Pre-req: One semester of College Chemistry and College Algebra.
Equivalent to DPPP 341. Additional fees may exist.
Academic Level: Undergraduate

CHEM 1011L General Chemistry II Lab (1 Credit Hours)
This lab course is at a level for introductory level, college general chemistry II course. An emphasis is placed on understanding the concepts of the labs and the scientific method. Since today's healthcare professionals are expected to have a general understanding of how science and the scientific method contribute to their profession, this course is appropriate for students preparing for a program in the health sciences as well as those who need a working knowledge of general chemistry for a number of applications. The hands-on labs will be performed in the home of the student using a designated lab kit. Course pre-req: one semester of college chemistry with lab and second semester of college chemistry lecture.
Academic Level: Undergraduate

CHEM 1012 General Chemistry I Lect/Lab (4 Credit Hours)
Online General Chemistry I with Lab is designed to give the student an introduction to general chemistry and chemistry lab techniques. The concepts covered in this course include components of matter, atomic theory, stoichiometry, chemical reactions and bonding, thermochemistry, quantum theory, electron configuration, models of bonding, theories of covalent bonding, shapes of molecules, and gasses. Labs are performed concurrently with lecture topics, with an emphasis on reinforcing topics covered in the textbook and learning basic lab procedures. The hands-on labs will be performed in the home of the student using a designated lab kit. Course Pre Req: One semester of College Algebra.
Equivalent to CHE 110, CHE 110L. Additional fees may exist.
Academic Level: Undergraduate

CHEM 1013 General Chemistry II Lect/Lab (4 Credit Hours)
Online General Chemistry II with Lab is designed to give the student an introduction to general chemistry and chemistry lab techniques. The subjects covered in this course include properties of liquids and solids, solutions, kinetics, equilibrium, acids and bases, thermodynamics, electrochemistry, organic nomenclature, and nuclear chemistry. Labs are performed concurrently with lecture topics, with an emphasis on reinforcing topics covered in the textbook and learning basic lab procedures. The hands-on labs will be performed in the home of the student using a designated lab kit. Course Pre-req: One semester of College Chemistry and College Algebra.
Additional fees may exist.
Academic Level: Undergraduate

CHEM 1020 Organic Chemistry I (3 Credit Hours)
Online Organic Chemistry I is the first semester of organic chemistry. This course is designed to give the student, interested in the health professions, an introduction to structure, reactivity, and analysis of organic molecules. Students will be introduced to organic structures (functional groups, nomenclature, stereochemistry and conformations) and then learn carbonyl reactions (nucleophilic additions to ketones/aldehydes and nucleophilic substitution to acid derivatives). The students then apply these topics to biochemical settings. Finally, the course ends with an introduction to spectroscopic analysis. These are topics that needed for entrance exams in the health professions and will prepare students to understand important biological pathways that the student will encounter in his/her professional studies. In addition, this course will lay the groundwork for more advanced understanding of the chemical reactivity topics covered in Organic Chemistry II. The course is designed to take lecture and lab concurrently for four credits. However, students have the option to take lecture only (three credits) or lab only (one credit). Course Pre Req: Two Semesters of General Chemistry
Equivalent to DPPP 350. Additional fees may exist.
Academic Level: Undergraduate

CHEM 1020L Organic Chemistry I Lab (1 Credit Hours)
This lab course is designed at a level to provide an introductory-level college organic chemistry course for health science majors. An emphasis is placed on understanding the concept of the labs and the scientific method, since today's healthcare professionals are expected to have a general understanding of how science and the scientific method contribute to their profession. The UNE online organic chemistry faculty member provides an introduction to each laboratory, relating the lab content to the corresponding course lecture and emphasizing the relevance to the Health Sciences. The labs are thus for pre-medical, dental, PA, DPT, pharmacy, dietetics, and graduate nutrition students. Topics include separation and purification techniques and an introduction to spectroscopy. This course will introduce the student to important laboratory techniques covered on most professional entrance exams. Course pre-req: two semesters of college level general chemistry with lab.
Academic Level: Undergraduate

CHEM 1021 Organic Chemistry II (3 Credit Hours)
Online Organic Chemistry II is designed to give the student, interested in the health professions, an introduction to the second semester of organic chemistry. The goals of give the student, interested in the health professions, an introduction to the organic chemistry that a student will encounter in his/her professional studies. Students will be introduced to a wide range of organic chemistry reactions. Students will learn to predict reaction outcomes and build an understanding of how molecules are synthesized. These are topics that needed for entrance exams in the health professions. The course is designed to take lecture and lab concurrently for four credits. However, students have the option to take lecture only (three credits) or lab only (one credit).Course Pre Req: One semester of Organic Chemistry.
Equivalent to DPPP 351. Additional fees may exist.
Academic Level: Undergraduate

CHEM 1021L Organic Chemistry II Lab (1 Credit Hours)
This lab course is designed at a level to provide an introductory-level college organic chemistry course for health science majors. An emphasis is placed on understanding the concept of the labs and the scientific method, since today's healthcare professionals are expected to have a general understanding of how science and the scientific method contribute to their profession. The UNE online organic chemistry faculty member provides an introduction to each laboratory, relating the lab content to the corresponding course lecture and emphasizing the relevance to the Health Sciences. The labs are thus for pre-medical, dental, PA, DPT, pharmacy, dietetics, and graduate nutrition students. Topics include organic synthesis and analysis techniques. This course will introduce the student to important laboratory techniques covered on most professional entrance exams. Course pre-req: one semester of college level organic chemistry with lab and second semester of college level organic chemistry lecture.
Academic Level: Undergraduate

CHEM 1030 Organic Chemistry I Lab/Lecture (4 Credit Hours)
This is the first semester course of a two-semester sequence of organic chemistry. This course is designed to give the student a general understanding of how science contributes to their future profession and will prepare students for entrance exams in the health professions. In addition, this course will lay the groundwork for more advanced understanding of the chemical reactivity topics covered in Online Organic Chemistry II and/or Biochemistry courses required for health-care professions. Students will be introduced to organic structures (functional groups, nomenclature, stereochemistry, and conformations) and then learn carbonyl reactions (nucleophilic additions to ketones/aldehydes and nucleophilic substitution to acid derivatives). Finally, the course ends with an introduction to spectroscopic analysis. The corresponding laboratory experiments will introduce laboratory techniques covered on most professional entrance exams and will reinforce key classroom concepts in the context of separation and purification techniques and an introduction to spectroscopy.
Academic Level: Undergraduate

CHEM 1031 Organic Chemistry II Lab/Lecture (4 Credit Hours)
This course is designed to give the student, interested in the health professions, the depth of a second semester of organic chemistry exploring reactivity and synthesis. The goals of this course are to provide students with the logic and foundation to organic chemistry topics that will be needed in his/her professional studies. Students will be introduced to a wide range of organic chemistry reactions. Students will learn to predict reaction outcomes and build an understanding of how molecules are synthesized. The course also incorporates a laboratory experience that places an emphasis on understanding the concept of the labs and the scientific method, since today's healthcare professionals are expected to have a general understanding of how science and the scientific method contribute to their profession. The course and labs will introduce the student to important laboratory techniques covered on most professional entrance exams. Course Prerequisite: One semester of college level organic chemistry with lab.
Additional fees may exist.
Academic Level: Undergraduate

CHEM 1050 Biochemistry (4 Credit Hours)
This online course serves as an introduction to the fundamental principles of biochemistry, providing students with a comprehensive understanding of the chemical processes that occur within living organisms. Students will explore the structure, function, and regulation of biological molecules, including proteins, lipids, and carbohydrates. This course will cover topics including metabolic pathways, enzymology, metabolism, and the integration of biochemical processes in cellular functions. Topics Covered: 1) Structure and functions of proteins and enzymes. 2) Enzymes: kinetics, mechanism, and regulation 3) Bioenergetics 4) Metabolism of carbohydrates and lipids. *This course is considered an upper-level undergraduate course (300 level or above). Recommended prerequisites of Organic Chemistry I and II
Equivalent to CHEM 1005. Additional fees may exist.
Academic Level: Undergraduate