

Integrated Science Course Descriptions

- BIO 103** **Environmental Science** **3 credits**
A topic-oriented course which examines the interrelated problems of population, food-supply and demand, pollution, and water resources. It is intended to provide the information required for making intelligent choices about issues that are scientific, social, political, and economic in nature.
- BIO 120** **General Biology I** **3 credits**
Introduction to biological phenomena designed to acquaint the student with biological principles and their application to living systems. Emphasis is on structure and function at the molecular-cellular level of organization in plants and animals. Also includes an analysis of the basic principles of inheritance as seen in various living forms.
- BIO 121** **General Biology I Laboratory** **2 credits**
An introduction to the experimental nature of the science of biology. Laboratory exercises demonstrate physical, physiological, and biochemical processes that are important to life. The diversity of life is explored by observing both living and prepared specimens from the Kingdoms of Protista, Monera, Fungi, and Plantae and by correlating form with function.
- BIO 122** **General Biology II** **3 credits**
A continuation of BIO 120. The course is an introduction to biology at the organismal and population levels. Topics include physiology, development, ecology, evolution and animal behavior. BIO 120 is not a pre-requisite.
- BIO 123** **General Biology II Laboratory** **2 credits**
Continuation of BIO 121 with laboratory exercises emphasizing evolution, population growth, survey of Kingdom Animalia, mammalian structure and function, and fundamentals of vertebrate embryology. BIO 121 is not a pre-requisite.
- BIO 270** **Genetics** **3 credits**
Prerequisite: BIO 120.
The study of heredity. The course covers Mendelian genetics, molecular and biochemical genetics, quantitative inheritance and population genetics.
- BIO 420** **Evolution** **3 credits**
Prerequisite: BIO 270.
A discussion of organic evolution. Evidence of evolution, mechanisms driving evolution, population genetics, and forces causing biological diversity are emphasized.
- BIO 448** **Ecology** **3 credits**
Prerequisite: BIO 120, 122 and CHM 107, 108.
An overview of the biological and physical processes found in ecosystems. Also included are factors affecting biological population structures, interactions and evolution.
- CHM 103** **Chemistry in Society** **3 credits**
This course is designed for the non-science major with no previous college-level science background. It includes an introduction to chemistry as well as several current chemical topics of significant societal concern.
- CHM 107** **General Chemistry I** **3 credits**
Stoichiometry, thermochemistry, states of matter, selected properties of the elements, solutions, atomic and molecular structure.
- CHM 110** **Chemistry I Laboratory** **1 credit**
Basic laboratory techniques are introduced including the qualitative analysis of the common inorganic cations and anions.

CHM 108	General Chemistry II	3 credits
Chemical thermodynamics and equilibria, kinetics, electrochemistry and redox, nuclear reactions, solutions, and selected properties of the elements.		
CHM 111	Chemistry II Laboratory	2 credits
Classical quantitative analysis via titrimetric, gravimetric and instrumental procedures.		
CHM 227	Organic Chemistry I	3 credits
<i>Prerequisite: CHM 108.</i>		
The first semester of a two-semester general course covering the theoretical aspects as well as the practical application of organic chemistry. The structure and properties of organic compounds are the basis for understanding stereochemistry, spectroscopy, and the chemistry of saturated aliphatic and alicyclic compounds.		
CHM 228	Organic Chemistry I Lab	2 credits
<i>Prerequisite: CHM 111</i>		
The more common laboratory techniques of organic and inorganic chemistry are illustrated with experiments involving the isolation, characterization and purification of compounds. Emphasis is placed on the concept of chemical reactions and the physical, chemical and spectroscopic tools available to the chemist.		
CHM 229	Organic Chemistry II	3 credits
<i>Prerequisite: CHM 227</i>		
A continuation of CHM 227 into aromatic, electrocyclic and carbonyl chemistry, followed by a survey of carbohydrate, amino acid and some other natural product chemistry.		
CHM 230	Organic Chemistry II Lab	2 credits
<i>Prerequisite: CHM 228</i>		
More comprehensive and sophisticated experiments in chemistry as a continuation of CHM 228.		
CHM 387	Quantitative Analysis	3 credits
<i>Prerequisite: CHM 108 and CHM 111.</i>		
Analytical applications of multi-step equilibria, electrochemistry and modern chemical separation techniques.		
CHM 470	Basic Biochemistry	3 credits
<i>Prerequisite: CHM 229</i>		
An introduction to structure-function relationships of biomolecules, including amino acids, proteins, carbohydrates, lipids, and nucleic acids. Also an introduction to metabolism, including glycolysis, Krebs cycle and oxidative phosphorylation. Physiological applications of biochemistry will be stressed.		
GEO 211	World Regional Geography	3 credits
Introduces the more modern concepts in and of regional geography and the importance of geography as an influence on world events. The world will be studied as regions and the natural, political, and economic reasons and interactions making these regions viable entities. Care is taken to study examples of western, eastern, and third world regions.		
PHY 108	History of the Universe	3 credits
Provides students with an understanding of the role the scientific process has in explaining the history of the universe. The role of experimental observation in the development of scientific theories will be discussed, as well as the philosophical nature of scientific theory. Students learn how physical principles are used to develop a coherent picture of natural sciences. The course discusses astronomical observations, the life cycles of planets and stars, and cosmology. Emphasis is also placed on earth science topics, including the structure and formation of geological features of the Earth and other planets in the solar system.		

PHY 130 **General Physics I** **3 credits**
Study of mechanics, fluids, heat, vibrations and waves. Emphasis will be placed on applications in the biological and medical sciences.

PHY 131 **General Physics I Laboratory** **1 credit**
Laboratory to accompany PHY 130.

PHY 132 **General Physics II** **3 credits**
Continuation of PHY 130 covering electricity and magnetism, optics, and modern physics. Emphasis will be placed on applications in the biological and medical sciences.

PHY 133 **General Physics II Laboratory** **1 credit**
Laboratory to accompany PHY 132.