

General Biology I BIOL150 Course Outcome Guide (COG)

Course:	BIOL 150 General Biology I	Credits:	4	Date Updated	April 2016
Course Description:	A two-semester sequenced study of the fundamental topics of biology. Emphasis on cellular biology. Topics include chemistry of life, cell biology, molecular genetics, genetics, cellular respiration, photosynthesis, simple life forms at the cellular level, and evolution and ecology. 1. Understand cellular and viral structure and function. 2. Understand fundamental biochemical principles. 3. Understand rudimentary classical genetics. 4. Understand rudimentary molecular genetics and have a familiarity with various DNA technologies. 5. Use knowledge about mechanisms of cellular and molecular processes. Co-requisite BIOL 150L General Biology I Lab				
Concepts and Issues	Process Skills	Assessment Tasks	Intended Outcomes		
			Course	General Education or Program	Institutional
1. Chemistry of Life Including Atoms Molecules Bonding and Viruses and HIV. 2. Cell Biology Structure and Function Eukaryotic Prokaryotic 3. Molecular Biology- transcription and translation. 4. Molecular mechanisms of Cancer	Study effectively Use scientific instruments safely and appropriately including microscopes, centrifuges, spectrometers. Know Atomic structure, bonding, Molecular Structure and how this leads to chemical properties and biological functions. Know the role of biological molecules in living organisms. Describe DNA structure and replication including the enzymes involved. Discuss enzyme structure, function and	1. Complete assignments of readings and worksheets, lab worksheets (“portfolio”), term paper, study guides, movies and worksheets. 2. Lecture and lab quizzes. 3. Lecture and lab exams with objective and subjective questions. 4. Lab attendance and participation.	1. Demonstrate the safe appropriate use of scientific instruments such as a microscope, centrifuge, spectrometer and restriction enzymes. 2. Differentiate factual information from opinion and pseudo-science by practicing methods used by biological scientists 3. Practice the application of biological information to solve problems and in life	1. Students will use reasoning skills to analyze and solve problems. 2. Students will apply health-related knowledge to physical and mental well-being.	1. Students will use reasoning skills to analyze and solve problems. 2. Students will apply health-related knowledge to physical and mental well-being.

<p>5. Mitosis and Meiosis</p> <p>6. Molecular and Classical Genetics and evolution.</p> <p>7. Energetics-cell respiration and photosynthesis</p> <p>8. Ecology</p>	<p>regulation</p> <p>Know and identify the components of cells (eukaryotic & prokaryotic) and viruses also explain their functions. Understand the relationship between cell structure and function (eukaryotic and prokaryotic). Compare and contrast the eukaryotic and prokaryotic organisms.</p> <p>Describe the processes by which materials are transported across cell membranes</p> <p>Apply transcription and translation to the process of metabolism.</p> <p>Describe HIV and include the molecular mechanism of infection.</p> <p>Describe cancer causes and the molecular mechanisms.</p> <p>List and describe the steps of Meiosis and Mitosis. Compare and contrast Meiosis and Mitosis.</p>		<p>(personal and professional).</p> <p>4. Practice the application of biological information in upper level classes</p>		
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	<p>Describe the process and give examples of applications using biotechnology.</p> <p>Solve basic Mendelian and non-Mendelian genetics problems.</p> <p>Discuss, compare and contrast Cellular Respiration and Photosynthesis.</p> <p>Describe and list examples of viruses, bacterial, fungi and Protista</p> <p>Describe common infectious diseases/disorders of the human body.</p> <p>Integrate the process of evolution in the development and adaptation of living organisms.</p> <p>Discuss the basic ecology concepts.</p>				
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