

BIO-TECHNOLOGY BIOL 271 Course Outcome Guide (COG)

Course:	BIOL 271 Bio-Technology	Credits:	3	Date Updated	April 2016
Course Description:	Prerequisite: C or higher in BIOL 150 or instructor approval. This is a laboratory oriented course to gain experience in the various techniques to be studied. Topics include isolation of chromosomal and plasmid DNA, electrophoresis, and tissue culture.				
Concepts and Issues	Process Skills	Assessment Tasks	Intended Outcomes		
			Course	General Education or Program	Institutional
1. Isolation and Purification of Plasmid and Chromosomal DNA 2. Determination of the DNA concentration. 2. Molecular Biology transcription Translation DNA replication 3. Electrophoresis 4. Restriction, Ligation and Transformation 5. Polymerase Chain Reaction (PCR) 6. Northern, Southern and Western blots 7. Tissue Culture	Use scientific procedures and instruments safely and appropriately including microscopes, pipettes, centrifuges, spectrometers. Demonstrate how to Safely make and use common lab chemicals. Describe the process and give examples of applications using biotechnology. Explain the function of each chemical in the experiment. Discuss the results of Electrophoresis Know Atomic structure, bonding, Molecular Structure and how this leads to chemical properties and biological	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 procedures and instruments such as a microscope, pipette, centrifuge, and spectrometer. 2. Demonstrate how to safely make and handle lab chemicals, such as restriction enzymes. 2. Differentiate factual information from opinion and pseudo-science by practicing methods used by biological scientists 3. Practice the application of biological	1. Students will use reasoning skills to analyze and solve problems.	1. Students will use reasoning skills to analyze and solve problems.

	<p>functions. Know the role of biological molecules in living organisms.</p> <p>Describe DNA structure and replication including the enzymes involved.</p> <p>Discuss enzyme structure, function and regulation Apply transcription and translation to the process of metabolism.</p> <p>Integrate the process of evolution in the development and adaptation of living organisms.</p>		<p>information to solve problems and in life (personal and professional).</p> <p>4. Practice the application of biological information in upper level classes</p>		
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