

COURSE OUTLINE

Revision: Carey Schroyer, April 2008

DEPARTMENT:	Academic Programs
CURRICULUM:	The Natural World
COURSE TITLE:	Majors Cellular
COURSE NUMBER:	BIOL& 211
TYPE OF COURSE:	Academic Transfer
Special Requirement Met:	Mathematics/Quantitative Reasoning
AREA(S) OF KNOWLEDGE:	The Living World
COURSE LENGTH:	1 quarter
CREDIT HOURS:	5
LECTURE HOURS:	33
LAB HOURS:	44
CLASS SIZE:	27
PREREQUISITES:	1 quarter of college chemistry or Instructor's permission

COURSE DESCRIPTION:

A three-quarter sequence that introduces biology in preparation for advanced study in areas of biological science such as medicine, dentistry, cell biology, microbiology, or veterinary medicine. BIOL& 211 is the initial course in the Biology 200 series. Emphasis on cellular biology, including cell structure, organization, metabolism, energetic, and the gene, including molecular, chromosomal, Mendelian and microbial genetics. Lab included.

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STUDENT LEARNING OUTCOMES ADDRESSED:

1. Communication - Read and listen actively to learn and communicate.
2. Computation - Apply quantitative skills for personal, academic and career purposes.
3. Human Relations - Use social interactive skills to work in groups effectively. Learn to work in teams with others to achieve goals in the laboratory.
4. Critical Thinking and Problem Solving - Think critically in evaluating information, solving problems and making decisions.
5. Technology - Select and use appropriate technological tools for academic and career tasks.
6. Personal Responsibility - Be motivated and able to continue learning and adapt to change. Be aware of environmental issues.
7. Information Literacy - Access and evaluate information from a variety of sources and contexts, including technology.

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Describe the scientific process, including the scientific method, hypothesis testing, the various ways science is done, the implications of the fact that science is a human endeavor, and the limits of science.
2. Understand basic chemical principles and become familiar with basic biological molecules and their role in cellular structure.
3. Understand and explain basic cellular and sub cellular structures and their role in cellular homeostasis and the cellular life cycle.
4. Understand and explain the metabolic processes of photosynthesis and respiration.
5. Understand and explain the genetic code (DNA); how it is translated into proteins; how genetic information is stored and passed on from generation to generation.
6. Explain evolution by natural selection, and present evidence for evolution.
7. Understand and utilize the concepts of Mendelian and non-Mendelian genetics.
8. Correctly use and care for a microscope, collect, analyze and interpret data, present in graphical form, and write a lab report.
9. Explain electrophoresis, spectrophotometry, chromatography, and other techniques commonly used to study this material.

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TOPICAL OUTLINE:	APPROX. HOURS
I. Scientific Method	7
II. Chemistry and biological molecules	10
III. Cell structure and cell cycle	12
IV. Metabolism	12
V. Respiration and Photosynthesis	12
VI. Mendelian and non- Mendelian genetics	12
VII. Molecular genetics	12
Total hours	77

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SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1	1,2,3,4,5,6,7	Communication - Read and listen actively
SLO 1.2	8	Communication - Speak and write effectively
SLO 2.1		Computation - Use mathematical operations
SLO 2.2	7	Computation - Apply quantitative skills
SLO 2.3		Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills
SLO 3.1	8,9	Human Relations - Use social interactive skills to work in groups effectively
SLO 3.2	6	Human Relations - Recognize the diversity of cultural influences and values
SLO 4.1	1,2,3,4,5,6,7	Critical Thinking and Problem Solving -
SLO 5.1	9	Technology - Select and use appropriate technological tools
SLO 6.1	1 – 9	Personal Responsibility - Be motivated and able to continue learning and adapt to change
SLO 6.2		Personal Responsibility - Value one's own skills, abilities, ideas and art
SLO 6.3		Personal Responsibility - Take pride in one's work
SLO 6.4		Personal Responsibility - Manage personal health and safety
SLO 6.5	1,5,8	Personal Responsibility - Be aware of civic and environmental issues
SLO 7.1		Information Literacy - Access and evaluate information
SLO 7.2	1,6,7	Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society

PREPARED BY: Carey Schroyer
DATE: April 2008