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.
BIOL& 211 Majors Cellular
April 2008

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.
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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TOPOICAL 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

REVISED BY: Carey Schroyer
DATE: April 2008
<table>
<thead>
<tr>
<th>SLO #</th>
<th>Included in Course Objective Number</th>
<th>SSCC Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 1.1</td>
<td>1,2,3,4,5,6,7</td>
<td>Communication - Read and listen actively</td>
</tr>
<tr>
<td>SLO 1.2</td>
<td>8</td>
<td>Communication - Speak and write effectively</td>
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<tr>
<td>SLO 2.1</td>
<td></td>
<td>Computation - Use mathematical operations</td>
</tr>
<tr>
<td>SLO 2.2</td>
<td>7</td>
<td>Computation - Apply quantitative skills</td>
</tr>
<tr>
<td>SLO 2.3</td>
<td></td>
<td>Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills</td>
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<tr>
<td>SLO 3.1</td>
<td>8,9</td>
<td>Human Relations - Use social interactive skills to work in groups effectively</td>
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<tr>
<td>SLO 3.2</td>
<td>6</td>
<td>Human Relations - Recognize the diversity of cultural influences and values</td>
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<tr>
<td>SLO 4.1</td>
<td>1,2,3,4,5,6,7</td>
<td>Critical Thinking and Problem Solving -</td>
</tr>
<tr>
<td>SLO 5.1</td>
<td>9</td>
<td>Technology - Select and use appropriate technological tools</td>
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<tr>
<td>SLO 6.1</td>
<td>1 – 9</td>
<td>Personal Responsibility - Be motivated and able to continue learning and adapt to change</td>
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<tr>
<td>SLO 6.2</td>
<td></td>
<td>Personal Responsibility - Value one's own skills, abilities, ideas and art</td>
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<tr>
<td>SLO 6.3</td>
<td></td>
<td>Personal Responsibility - Take pride in one's work</td>
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<tr>
<td>SLO 6.4</td>
<td></td>
<td>Personal Responsibility - Manage personal health and safety</td>
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<tr>
<td>SLO 6.5</td>
<td>1,5,8</td>
<td>Personal Responsibility - Be aware of civic and environmental issues</td>
</tr>
<tr>
<td>SLO 7.1</td>
<td></td>
<td>Information Literacy - Access and evaluate information</td>
</tr>
<tr>
<td>SLO 7.2</td>
<td>1,6,7</td>
<td>Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society</td>
</tr>
</tbody>
</table>

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