Course Outline

Course Title: GENETICS
Semester Course Prefix and Number: BIOL 2556
Old Quarter Course Prefix and Number: 
Submitted By: Biology Dept.
Approval Date: February 2004
Revision Date: 

Number of Credits: 3
Number of Lecture Credits: 3
Number of Lab Credits: 
Number of Lab Hours: 
Number of Studio/Demonstration/Internship Credits: 
Class Size: 40

Negotiated by AASC on (February 18, 2004)

Course Purpose Code:

0 – Developmental Courses
1 – Non-transferable, General Education
2 – Technical course related to career programs
3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
4 – Other college course not considered a part of general education (MNTC) e.g. computer science, health, physical education
X 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements.
9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This course provides an introduction to genetics including topics in transmission, molecular, and population genetics. Special emphasis will be placed on the social impact and ethical considerations of advances in genetic research.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s): Biol 1551 or instructors consent
Reading Prerequisite: College Level Reading
Composition Prerequisite: 
Mathematics Prerequisite: Math 0093(Beginning Algebra) or Equivalent CPT Score

Career Programs and Transfer Majors Accessing this Course:
Biology Majors, Biotechnology, Allied Health, Forensic Science

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable: Notes: No more than two goals may be met by any one course. (Curriculum Committee review and the Chief Academic Officer’s approval are required).

0. None
1. Communications
2. Critical Thinking
X 3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
X 9. Ethical and Civic Responsibility
10. People and the Environment
Learning outcomes, including any relevant competencies listed in the Minnesota Transfer Curriculum:
Outcomes include knowledge of/ability to:
* Understanding of patterns of inheritance
* Critically Analyze Inheritance Problems
* Correlate DNA Structure to Function and Protein Synthesis
* Predict genotypic and phenotypic frequencies in simulated populations
* Gene regulation
* Impact of genetic diseases on society
* Advances in genetic research and ethical considerations of the same.

MTC Outcomes:

Goal 3: Natural Science
1) Demonstrate understanding of scientific theories,
2) Formulate and test hypotheses by performing simulations,
3) Evaluate societal issues from a natural science perspective.

Goal 9: Ethical and Civic Responsibility
1) Examine, articulate and apply students own ethical views,
2) Analyze and reflect on the ethical dimensions of legal, social, and scientific issues,
3) Recognize the diversity of political motivations and interests of others.

Student Assessment Methods:
Tests (multiple choice/essay format), Discussion, Quizzes, Projects/Papers, CATs

Use of instructional technology (includes software, interactive video and other instructional technologies):
CD-Roms, Internet

Outline of the major course content:
DNA/Chromosome Structure and Function (including genes), Mendelian and Non-Mendelian Inheritance, molecular genetics, genetic manipulation techniques, population genetics, applications to human health and diseases, bioethical considerations of genetic research and gene therapy.

Additional special information (special fees, directives on hazardous materials, etc.)

Transfer Information: (Please list colleges/majors that accept this course in transfer.)
St.Cloud State, MN State-Mankato, Bemidji State, UMD, LSC

Approvals:

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<tr>
<th>Body</th>
<th>Representative Signatures</th>
<th>Date</th>
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<tbody>
<tr>
<td>Curriculum Committee</td>
<td>Donnie Gordon</td>
<td>February 2, 2004</td>
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<tr>
<td>Faculty Association</td>
<td>Roger Hoffman</td>
<td>February 11, 2004</td>
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<tr>
<td>Academic Affairs Standards Committee</td>
<td>Kim Giermann</td>
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<tr>
<td>Chief Academic Officer</td>
<td>Dr. Jill Peterson</td>
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