MESABI RANGE COMMUNITY & TECHNICAL COLLEGE – VIRGINIA/EVELETH

Course Outline

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

Number of Credits: **3** | **Number of Lecture Credits:** **3**
Semester(s) Offered: | **Number of Lab Credits:** | **Number of Lab Hours:**
Class Size: **40** | **Number of Studio/Demonstration/Internship Credits:**
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:

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
3. __X__ 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
9. __X__ 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:

Body	Representative Signatures	Date
Curriculum Committee	Donnie Gordon	February 2, 2004
Faculty Association	Roger Hoffman	February 11, 2004
Academic Affairs Standards Committee	Kim Giermann	February 18, 2004
Chief Academic Officer	Dr. Jill Peterson	February 18, 2004

Distribution: Original – Administrative Office, Library, Learning Center, Records, Student Services, Curriculum Committee Chair