Bemidji State University

BIOL 2360: Genetics

A. COURSE DESCRIPTION

   Credits: 4
   Lecture Hours/Week: *.*
   Lab Hours/Week: *.*
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None

   Fundamental principles of heredity in plants, animals, and microorganisms. Includes both classical and molecular genetic approaches to studying organisms. Prerequisites: BIOL 1211 and BIOL 1212.

B. COURSE EFFECTIVE DATES: 11/17/1997 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

   1. Mitosis and meiosis
   2. Mendelism
   3. Mendelism extensions
   4. Mendel and chromosomes
   5. Chromosomal variation
   6. Linkage, crossing over, and chrom. mapping
   7. Microorganism genetics
   8. DNA and mol. structure of chromosomes
   9. Replication
   10. Transcription
   11. Translation
   12. Mutation and repair
   13. Gene definition
   14. Techniques of molecular genetics
   15. Genomics
   16. Molecular genetics applications
   17. Transposable elements
   18. Mitochondria and chloroplasts
   19. Gene expression in prokaryotes
   20. Gene expression in eukaryotes
   21. Cancer
   22. Population genetics
   23. Evolutionary genetics
D. LEARNING OUTCOMES (General)
   1. predict patterns of inheritance and identify deviations and their causes in those patterns
   2. understand the chromosomal theory of inheritance
   3. break down the flow genetic material in a cell
   4. compare and contrast genetic processes in prokaryotic and eukaryotic cells
   5. analyze how mutation at the molecular level drives evolutionary change

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted