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