Minnesota State University Moorhead

BIOL 385: Molecular Biology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:
BIOL 341 - Genetics AND CHEM 210 - General Chemistry II AND CHEM 210L - General Chemistry II Lab

Corequisites: None

MnTC Goals: None

Molecular biology of the gene with emphasis on gene structure and expression in eukaryotes. Topics include current techniques used to study genomes, genes and regulation of gene expression.

B. COURSE EFFECTIVE DATES: 05/10/2004 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Genes Code for Proteins
2. Translation
3. Using the Genetic Code
4. Content of the Genome
5. Genome Sequences and Gene Number
6. Clusters and Repeats
7. Genome Evolution
8. Chromosomes
9. Chromatin
10. DNA Replication
11. Transposons, Retroviruses and Retrotransposons
12. Prokaryotic Transcription
13. Eukaryotic Transcription
14. RNA Splicing and Processing
15. Eukaryotic Transcription Regulation
16. Epigenetic Regulation

D. LEARNING OUTCOMES (General)

1. To study DNA structure and labeling nomenclature.
2. To study prokaryotic genes: structure and function.
3. To study recombinant DNA technology.
4. To study eukaryotic genes: structure and function.
5. To study genome structure.
6. Will include select topics in molecular biology: cancer, AIDS and HIV.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted