

# Minnesota State University Moorhead

## BIOL 111: Cell Biology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Fundamental concepts of the structure, function and reproduction of cells. Lab included.

### B. COURSE EFFECTIVE DATES: 06/01/1995 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Basics of Biological Chemistry.
2. Basics of Water Chemistry.
3. Basics of Carbon Chemistry.
4. Macromolecules.
5. -Structure, Function, Organelles, Cytoskeleton, Protein Trafficking and Origins.
6. Membrane Structure.
7. Metabolism.
8. Cellular Respiration.
9. Photosynthesis.
10. Origins of Mitochondria and Chloroplasts--Endosymbiosis.
11. Cell Communication.
12. Cell Cycle.
13. Meiosis.
14. Classical Genetics.
15. Chromosomal Inheritance.
16. Molecular Inheritance.
17. Central Dogma of Molecular Biology.
18. Biotechnology.
19. DNA.
20. Genetic Basis of Development.

**D. LEARNING OUTCOMES (General)**

1. To build scientific vocabulary specifically focusing on cell biology terminology.
2. To learn basics of cell structure and how those various structures lead to different functions.
3. To understand cellular reproduction (cell cycle, DNA replication, mitosis and meiosis).
4. To provide the opportunity for students to read and interpret groundbreaking classic literature in the field of cell biology.
5. To assist students in understanding complex concepts in cell biology.
6. To communicate outcomes from class research effectively in writing and the construction of tables and figures.
7. To prepare students with strong knowledge base for advanced biology courses.

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

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted