

Bemidji State University

BIOL 3590: Cell Biology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Microscopic anatomy and physiological mechanisms of plant and animal cells. Gene control of cellular metabolism, mechanism of energy utilization in cells and pathways of synthesis of molecules.

Prerequisites: (BIOL 2360 or BIOL 3380) and (CHEM 2211, CHEM 2212) or consent of instructor.

B. COURSE EFFECTIVE DATES: 08/27/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Cell communication
2. Cell communities
3. Cell division cycle
4. Cell transport
5. Cellular energetics
6. Central dogma
7. Chemistry basics
8. DNA concepts
9. Gene Regulation Ch8
10. Membrane transport
11. Membranes
12. Metabolism
13. Mitochondria/chloroplasts
14. Protein regulation
15. Proteins
16. The cytoskeleton

D. LEARNING OUTCOMES (General)

1. describe extracellular and intracellular relationships in a multicellular organism and transport processes
2. categorize sub-cellular structures, organelles, and compartments and compare their functions.
3. identify the structures and functions of important categories of biomolecules
4. analyze energy flow within a biological system, and relate energy production and utilization processes.
5. connect cellular signaling pathways with cellular outcomes and functional changes.
6. differentiate features of several specific cell types.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted