



MASTER COURSE OUTLINE

Prepared By: Kathleen Duvall, Mariah Whitney

Date: May 2020

COURSE TITLE

Core Concepts in Biology

GENERAL COURSE INFORMATION

Dept.: BIOL

Course Num: 104

(Formerly:)

CIP Code: 26.0101

Intent Code:

Program Code: N/A

Credits: 2

Total Contact Hrs Per Qtr.: 22

Lecture Hrs: 22

Lab Hrs: 0

Other Hrs: 0

Distribution Designation: Specified Elective SE

COURSE DESCRIPTION (as it will appear in the catalog)

A review of the biological principles common to living organisms, this course is intended for students planning to take BIOL& 211 who have some prior biology background but would like a review of the basic biology concepts. Topics of study include, macromolecules, cell structure, membrane transport, energy and metabolism, DNA replication, gene expression, cell division, and genetics.

PREREQUISITES

Any prior biology course, high school or college-level, is highly recommended.

TEXTBOOK GUIDELINES

An open source edition of an introductory, non-majors biology text. The text used must have departmental approval.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Describe the structure and functions of carbohydrates, lipids, proteins, and nucleic acids.
2. Define what a cell is and describe cell structure and membrane structure; describe prokaryotic and eukaryotic cells, and identify the structure and functions of structures found within eukaryotic cells.
3. Name and explain the processes that move substances across membranes; describe and explain enzyme structure and function.
4. Define and explain how energy is used, transported, and produced within cells; describe the events that occur within cellular respiration.
5. Describe the structure of DNA in detail; describe the events of replication, transcription, and translation.
6. List the events that occur during each phase of mitosis and during each phase of meiosis; compare and contrast the purposes, the events, and the outcomes of mitosis and meiosis, and describe the eukaryotic cell cycle.
7. State, giving examples of both of Mendel's laws; explain simple dominance, incomplete dominance, codominance, multiple alleles, and sex-linked traits; use a Punnett square to solve simple genetic problems.

INSTITUTIONAL OUTCOMES

None

COURSE CONTENT OUTLINE

1. Macromolecules
2. Cells and Cell Structure
3. Membranes, Transport and Enzymes
4. Energy and Metabolism
5. DNA Structure, Replication, Transcription, & Translation
6. Cell Division – Mitosis and Meiosis
7. Mendelian Genetics

DEPARTMENTAL GUIDELINES *(optional)*

- A standard grade scale will be used for this course with a 2.0 grade point corresponding to 78% in overall course percentage.
- All exams are proctored. When possible, exams are held on campus. Online and hybrid courses may have exams online, but they must be proctored to ensure academic honesty.
- PO5 “Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources.” should be assessed.

DIVISION CHAIR APPROVAL

DATE