

BIO 111 – MAJOR'S BIOLOGY (3 credits)

Course Description

Examination of key biological structures, metabolic pathways of the cell and patterns of genetic inheritance as well as genetic disorders and information related to DNA and formation of proteins.

Course Format

Students should participate actively in class and work in group projects. Power point lectures will help study main biological processes and detailed analysis of genetic inheritance problems will also be addressed as a major point during the second half of the semester whereby students will thus improve in the ability of learning the material.

Course Objectives

The goal is to provide students with an indepth knowledge of cell structures and functions that will include principle metabolic pathways such as photosynthesis and respiration. Students will also learn patterns of genetic inheritance aimed to increase their understanding of basic principles of biology.

Course Evaluation

Class examinations (Midterm and Final): 70%
Homework assignments, quizzes and research papers: 20%
Class attendance and active participation: 10%

Homework and Participation

Regular attendance is required. Two unjustified absences will be allowed. Further **unjustified absences will lower the grade** half a point for each subsequent absence.

The course work will include a series of homework assignments, two research papers (one which will include a presentation), reading assignments and book quizzes after each chapter.

Required Text

“Biology: Concepts and Applications” C. Starr .Wadsworth Publishing Company

Course Outline

I. The Cellular Basis of Life

- General Concepts of Biology
- Chemical Foundations for Cells
- Carbon Compounds in Cells
- Cell Structure and Function
- Ground Rules of Metabolism
- Energy-Releasing Pathways
- Energy-Acquiring Pathways

II. Principles of Inheritance

- Cell Division and Mitosis
- Meiosis
- Observable Patterns of Inheritance
- Chromosomes and Human Genetics
- DNA Structure and Function
- From DNA to Proteins
- Control of Gene Expression
- Recombinant DNA and Genetic Engineering