

**BIOLOGY A Section 8513
INTRODUCTION TO BIOLOGY
Kareen Martin**

This is an **hybrid** class, which means some contents will be presented when the class meet each **Tuesday from 6:45 to 8:15pm in MSA 003** and others will be **posted online each Thursdays**.

Contact:

- **email:** martink@wlaac.edu
- **Office hours:** Tuesdays 5:30 to 6:45 in MSB 211
- **Private message on the Etudes Message board**

Course description:

This course covers the major principles of biology. The lecture will include basic biological molecules, cell structure and function, energy acquisition, the mechanisms of heredity, gene expression and the organization of the bodies of plants and ecosystems. This course is designed for students who are not biology majors.

Grading:

Your grade will be based upon the following scores:

| | |
|---------------------|-------------------|
| 4 Exams | 400 points |
| 10 Quizzes | 100 points |
| 4 Assignments | 100 points |
| Written Assignment | 100 points |
| Total points | 700 points |

- **EXAMS (100 points each)**
 - 4 exams will be administered.
 - Exams will consist of objective-type questions (true/false, multiple choice) and small written answers.
 - They will all be posted on **Sept 24th, Oct 24th, Nov 14th and Dec 10th**.
 - Missed Exam: All exams must be taken on the day decided by the instructor. **NO MAKE UP EXAMS** will be given for any reason. Any exam that is missed will receive a zero on it.

- **QUIZZES (10 points each)**
 - There will be a quiz for each week, except on exam week, which means there will be 10 quizzes.
 - Quizzes will be posted on Thursdays. You will have from Thursday to Sunday night to take them only. There are **NO MAKE UP** quizzes.
 - They will consist of true/false, multiple choice.
 - They will be timed to 10 minutes and you will be able to take them twice, the best score between the 2 will be kept. The questions however may be different in both quizzes.

- **ASSIGNMENTS (25 points each).**

- There will be 4 assignments posted on Thursday Sept 12th, Thursday Oct 3rd, Thursday Oct 24th and Thursday Nov 14th.
- Assignments will be posted on a Thursday. **You will have until the following Thursday night to complete these assignments.**
- Assignments could be activities such as small written essays, participation into a discussion. **Any plagiarism will result in a zero**
- My four criteria for grading a discussion are as follows:
 - **When Initially posted** - worth a maximum of 3 points
 - **Fulfilled Responding Responsibilities** - worth a maximum of 3 points
 - **Frequency of Posts** (at least 3 times including your post)- worth a maximum of 3 points
 - **Content of Posts** - worth a maximum of 11 points.

- **WRITTEN ASSIGNMENT (100 points)**

- A writing assignment will be given during the course of the class. Details are given under the module "Written Assignment"
- This assignment should be 3 to 4 pages long, double space. It will be worth 100 points.
- **NO PLAGIARISM, Any plagiarism will result in a zero.** The assignment must be submitted in the antiplagiarism website *turnitin*. For the definition of plagiarism refer to the module "Written Assignment"
- **The written assignment is due November 19th.** Assignment posted later won't be accepted.

Grading policy:

The grade scale for the entire course will be assigned using a percentage system:

| A | B | C | D | F |
|---------|--------|--------|--------|-----------|
| 89-100% | 76-88% | 60-75% | 50-59% | below 50% |

Religious holidays:

If you are going to miss an exam due to religious holidays, inform me **in writing** within the first 2 weeks of class. You will need to provide the appropriate verifications from your religious leader. We will meet and discuss the arrangements.

ADA Accommodations:

If you require accommodations as per ADA, you must register with the college' disabled student services and inform me (in writing) prior to the end of the 2nd week of class.

Recommendations for succeeding in this class:

Study and review each day. Here are some suggestions:

- every time you study, spend at least 10 minutes reviewing previous lessons (this is the secret to long term memory)
- prepare note cards and use them to help you review
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STUDENT LEARNING OUTCOMES

- Describe the characteristics of living things.
- Describe how living things are classified.
- Describe the scientific method; define the terms hypothesis, variable, experimental control.
- Describe the forces that attract atoms.
- Recognize functional groups found in biological molecules.
- Differentiate prokaryotic and eukaryotic cells.
- Describe the structures and functions of the different parts of a cell.
- Predict the movement of molecules in diffusion and osmosis.
- Define catalyst, enzyme and active site.
- Describe how ATP is used in metabolism.
- Describe the role of electron carrier transport chain in eukaryotic cells.
- Define autotroph and heterotroph.
- Compare and differentiate cellular respiration and photosynthesis.
- Compare and contrast the role and stages of meiosis and mitosis.
- Recognize the contribution of Gregor Mendel.
- Contrast genotype and phenotype.
- Compare complete dominance and incomplete dominance.
- Describe how DNA is copied and replicated.
- Name the 3 major types of RNA and tell how they function in protein synthesis.
- Explain how a cell controls gene expression.
- Define Biological evolution and discuss the four lines of evidence for evolution.
- Name the processes that occur in organisms that make variation of phenotypes possible.
- Explain the role of beneficial mutation and neutral mutation in evolution.
- Explain the function and structure of the different organs of a plant.
- Recognize the definition of these terms: community, ecosystem, habitat, niche, consumer, producer, decomposer, pioneer, carrying capacity.
- Describe the flow of energy through a community.
- Understand how to maintain biodiversity is beneficial to ourselves.

| WEEK | Presented | DATE | QUIZ | DISC | LECTURE |
|------|-------------------------------------|------------------------------------|------|--------------|---|
| 1 | Lecture <i>online</i> | Aug 27 <i>Aug 29</i> | | | INTRODUCTION: The study of life <i>The Molecules of Life</i> |
| 2 | Lecture <i>online</i> | Sept 3 <i>Sept 5</i> | 1 | | Organic Molecules <i>Cell Structure and Function</i> |
| 3 | Lecture <i>online</i> | Sept 10 <i>Sept 12</i> | 2 | Ass 1 | Membrane Structure and Function <i>Metabolism: Energy and Enzymes</i> |
| 4 | Lecture <i>online</i> | Sept 17 <i>Sept 19</i> | 3 | | Cellular Respiration <i>Photosynthesis</i> |
| 5 | Lecture <i>online</i> | Sept 24 <i>Sept 26</i> | | | EXAM 1 <i>Cell Division</i> |
| 6 | Lecture <i>online</i> | Oct 1 <i>Oct 3</i> | 4 | Ass 2 | Genetics and inheritance – Chromosomal Basis of Inheritance <i>DNA Structure and Control of Gene Expression</i> |
| 7 | Lecture <i>online</i> | Oct 8 <i>Oct 10</i> | 5 | | Biotechnology <i>Classification</i> |
| 8 | Lecture <i>online</i> | Oct 15 <i>Oct 17</i> | | | EXAM 2 <i>Evolution of Life</i> |
| 9 | Lecture <i>online</i> | Oct 22 <i>Oct 24</i> | 6 | Ass 3 | Molecular Basis of Evolution/Speciation <i>Plant Organization, Function and Reproduction</i> |
| 10 | Lecture <i>online</i> | Oct 29 <i>Oct 31</i> | 7 | | Human Organization <i>Cardiovascular System - Respiratory System</i> |
| 11 | Lecture <i>online</i> | Nov 5 <i>Nov 7</i> | 8 | | Digestive System and Nutrition <i>Lymphatic and Immune System</i> |
| 12 | Lecture <i>online</i> | Nov 12 <i>Nov 14</i> | | Ass 4 | EXAM 3 <i>Urinary System and Excretion</i> |
| 13 | Lecture <i>online</i> | Nov 19 <i>Nov 21</i> | | | Nervous, Sensory and Motor Systems WRITTEN ASSIGNMENT DUE <i>NO CLASS POSTED- THANKSGIVING</i> |
| 14 | Lecture <i>online</i> | Nov 26 <i>Nov 28</i> | 9 | | Musculoskeletal System <i>Behavioral Ecology</i> |
| 15 | Lecture <i>online</i> | Dec 3 <i>Dec 5</i> | 10 | | Population Ecology <i>Nature of Ecosystems</i> |
| 16 | Lecture | Dec 10 | | | EXAM 4 |