BIOL 1407-Principles of Biology I-Fall 2017

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Phone: 325-347-1122 ext 265

Learning Objectives and Nature of the Course: This course introduces the integration between structure and function of biological organization. You will be asked to use processes of science to apply principles of evolution, genetics, diversity, and ecology to living systems. Observation, experimentation, and investigation are emphasized. Biology 1407 requires a conceptual understanding of the material rather than the simple memorization and regurgitation of facts. This course will challenge you to analyze and apply information, solve problems, and make connections different from the context in which they were learned. These are critical skills in biology. This course is intended for Biology majors and minors or those for which it is a degree requirement. It is not recommended for non-majors to fulfill a general education requirement for a laboratory course.

Course Materials:
   1 Composition Notebooks, folder, pens, pencils
Lab (required): 1 Composition Notebook, Google Apps

Course Idea Objectives:
● gain factual knowledge (terminology, classifications, methods, trends)
● learn fundamental principles and theories
● learn to apply course material (to improve thinking, problem solving, and decisions)
● acquire skills in working with others as a member of a team

A successful student in Principles of Biology should be able to achieve the following course and state core related learning outcomes:
● describe, explain, and predict natural phenomena using the scientific method. CT1, EQS1, EQS2 - Assessment =in class activities, lecture exams, embedded test questions, lab quizzes, and lab activities/reports
- design an experiment and complete a written description of their design, collaboratively conduct the experiment and analyze data generated to answer some component of a given causal question and defend the reasoning for conclusions drawn in the form of a laboratory report. CS1 - Assessment = in class activities, lab quizzes, and lab activities/reports

- collect and analyze data to evaluate relevant biological/ecological scenarios/problems (i.e. apply information you have learned). EQS1 - Assessment = In class activities, lecture exams, embedded test questions, lab quizzes, and lab activities/reports

- Work effectively with others to support and accomplish a shared goal = CS1, TW2 - Assessment = in class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

- connect what she/he is learning to her/his own field (i.e. to make biology relevant to your own academic endeavors). Assessment = in class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

For state and accreditation purposes this course will assess your ability to:

- CT1 - Gather, analyze, evaluate, and synthesize information relevant to a question or issue

- CS2 - Develop, interpret, and express ideas through effective written communication

- EQS1 - Manipulate and analyze numerical data and arrive at an informed conclusion

- EQS2 - Manipulate and analyze observable facts and arrive at an informed conclusion

- TW2 - Work effectively with others to support and accomplish a shared goal

To achieve these course objectives and help maximize your learning, it is vital that you attend class, come prepared, and study the material every day (see student responsibilities.)

Methods of Assessing Objectives (what you need to study): READ ME!! The student learning outcomes will be assessed by exams, lecture activities, other out of class assignments and the laboratory. The learning objectives will be posted on the lecture presentations and available on Google Classroom. You should use the objectives along with the notes and activities/experiments from lecture AND lab to help you study.
Classroom/Email). If an assignment is mentioned/completed in class, and you are not present, it is still due on the date initially assigned. Absence is not an excuse for late work. No last minute offers of extra-credit are made in this course. This course is built with “extra credit” opportunities through homework, activities, and labs. Always attend class and strive to do your best, so that YOU may EARN the grade you want. It is your responsibility to keep up with your progress. Don’t worry, I will help you, if you just ask for clarification!

**Laboratory:** This portion of the course offers you the opportunity to explore and apply concepts to answer research questions. Success in the laboratory involves teamwork in
designing and conducting experiments, performing pre-lab and lab activities, and report writing. In addition, you will conduct activities designed to develop and improve critical thinking and problem solving skills related to the topics discussed in lectures.

**Student Responsibilities:**

**Attendance:** Missed lecture and/or lab activities cannot be made up, however they may be posted online if you have an excused/extracurricular absence. Please inform me ahead of time if you will need to be absent for any reason so that I can assign alternative lab investigations/assessments.

**Academic Honesty and the ASU Honor Code:** Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code and the ASU policies on academic dishonesty, which is contained in both print and web versions of the Student Handbook. The penalty for ANY act of dishonesty in this class, including any form of cheating or plagiarism: 1) is a grade of ZERO on the assignment and, 2) disciplinary action as warranted in accordance with university guidelines. Please do NOT jeopardize your career; it’s not worth it.

**Class Preparation, Google Classroom, and Email:** Much of your learning about biology must take place outside of the formal class meetings. You should be a frequent visitor to the course Google Classroom site. All of the material you need to prepare for class is available from the site: reading assignments for each unit, lecture presentations, homework assignments, in-class activity handouts, helpful handouts (for some concepts), and links to outside review materials (for some concepts). Since class announcements will be routinely distributed via email and Classroom, you will need to regularly check Gmail account and our course site (daily).

**Lecture:** A typical class meeting will combine mini-lectures, discussions, group activities, multimedia presentations, and other demonstrations and activities to give you an opportunity to learn biological concepts in as active a manner as possible. Each segment of the course is structured around one or more conceptual units that can be interpreted or solved by applying selected biological concepts. As a member of the class you are also invited to:

- Ask questions, no matter how naive they seem to you. I will do my best to offer you a satisfactory answer. The only stupid question is one that isn’t asked.

- Ask for help and/or clarification. Don’t suffer in silence. I can’t help you learn if I don’t know you’re confused or if my instructions are unclear.

- Use your group members as study partners! Review exam review questions or notes together. Group learning can be powerful and is often beneficial in a course like biology.
## BIO 1407 Fall 2016 Tentative Schedule

<table>
<thead>
<tr>
<th>Week/Date</th>
<th>Unit Concepts</th>
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<tbody>
<tr>
<td>Aug 28-Sept 1</td>
<td>Unit 1 – Science and Evolution: Scientific Method, Def. of Science, Lab Safety</td>
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<tr>
<td>Sept 5- Sept 8</td>
<td>Unit 1 – Origin and History of Life: What is life? When and how did life on Earth begin?</td>
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<tr>
<td>Sept 11-15</td>
<td>Unit 1 - Diversity of Life: Kingdoms Protista, Plantae</td>
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<tr>
<td>Sept 18-22</td>
<td>Unit 1 - Diversity of Life: Kingdoms Animalia, Fungi</td>
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<tr>
<td>Sept 25-29</td>
<td>Unit 1 – Biological Classification Systems: History of Classification, Speciation, Taxonomy and Systematics</td>
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<tr>
<td>Oct 2-6</td>
<td>Unit 1 - Biological Classification Systems: History of Classification, Speciation, Taxonomy and Systematics</td>
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<tr>
<td>Oct 16-20</td>
<td>Unit 2 - Ecology and Interconnectedness: Populations Dynamics and Hardy-Weinberg Equilibrium</td>
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<tr>
<td>Oct 23-27</td>
<td>Unit 2 - Ecology and Interconnectedness: Populations Dynamics and Hardy-Weinberg Equilibrium</td>
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<tr>
<td>Oct 30-Nov 3</td>
<td>Unit 2 - Ecology and Interconnectedness: Communities and ecosystems, chemical cycling, biomes, succession</td>
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<tr>
<td>Nov 6-10</td>
<td>Unit 2 – Ecology and Interconnectedness: Communities and ecosystems, chemical cycling, biomes, succession</td>
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<td>Nov 13-17</td>
<td>Unit 3 – Energy: Energy Transformation</td>
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<td>Nov 20-24</td>
<td>THANKSGIVING BREAK</td>
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<tr>
<td>Nov 27-Dec 1</td>
<td>Unit 3 – Energy: ATP, Photosynthesis</td>
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<td>Dec 4-8</td>
<td>Unit 3 - Energy: Respiration and Fermentation</td>
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<tr>
<td>Dec 11-15</td>
<td>FINAL EXAMS WEEK</td>
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**Student Information Sheet–BIOLOGY 1407**

You are required to sign and return this sheet to me. By doing so you acknowledge that you have received, read, and understand the syllabus and what is required of you to be successful in this course. The information contained in this syllabus is your guide to the rules of this course. If you do not understand what is expected of you or the impact of your actions (i.e. missing a class), you should come and see me ASAP (within the first week of class).

**YOUR NAME (PRINT):**

(Note: If you prefer to go by your middle name or a nickname, please indicate that in parentheses. Ex. Joseph Student (Joe))

I acknowledge that I have received and accept the responsibility for the information in the class syllabus. I also acknowledge that I have read and will abide by the Mason ISD/ASU Honor Code.

**NAME (signature):**

**DATE:**

Parent/Guardian Form

I ________________________________ the parent/guardian of

__________________________________________________________ have read the course syllabus and understand what is required of my student in this course. I have read the honor code and district requirements and understand that my student is expected to follow the expectations outlined in this document.

__________________________________________________________ Date ____________

*(Parent/Guardian Signature)*