Eastfield College
STEM Division
BIOL 2406 – Environmental Biology
Fall 2019
August 26 – December 12 (16 weeks)

Instructor: José Flores
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Phone: 972-860-7087
Email: joseflores@dcccd.edu
Office hours: MW 9:00 – 9:30am
TR 12:30 – 2:30pm
Other times by appointment

Sections: BIOL 2406 – 41400 and 41401

Times and Locations:
Lecture: Online
Lab: Online

Prerequisites: College level ready in Reading and Writing.

Course Description: 4 Credit Hours
Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research. Laboratory activities will reinforce these concepts. (3 Lec., 3 Lab.)

Textbooks

Core Objectives:

BIOL 2406/ENVR 1401 develops the following Core Objectives:

* Critical Thinking -to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.

* Communication -to include effective development, interpretation and expression of ideas through written, oral and visual communication.

* Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
* Teamwork - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Core Objective Development Statements: BIOL 2406 develops Critical Thinking and Empirical and Quantitative Skills by requiring students to research, analyze and interpret data derived from an experimental setting and drawing a well-informed conclusion of the data through the application of sound biological concepts.

BIOL 2406 develops Teamwork and Communication by requiring students to effectively work in a small group on an assigned problem, exercise or course concept that will then be presented in a written, oral or visual format.

The project that will assess these Core Objectives will be the Human Populations Lab.

**Lecture Learning Outcomes from Texas Coordinating Board:**
1. Explain the structure and impact of biogeochemical cycles.
2. Describe energy transformations across trophic levels.
3. Illustrate abiotic/biotic interactions and symbiotic relationships.
4. Identify various types of natural resources, human impact on these resources, and common resource management practices.
5. Quantify and analyze the impact of lifestyle on the environment.
6. Depict evolutionary trends and adaptations to environmental changes.
7. Describe environmental hazards and risks and the social, economic, and political ramifications.
8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.

**Lab Learning Outcomes from Texas Coordinating Board:**
1. Be able to apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
3. Communicate effectively the results of investigations.
4. Explain the structure and impact of biogeochemical cycles.
5. Describe energy transformations across trophic levels.
Technical Skills and Software:

1) To be successful in this course you must have the following minimum technical skills:
be able to use a word processor, use e-mail, and attach files for submission.

2) Navigation of this online course can be problematic with Internet Explorer. I would recommend you to use Mozilla Firefox. If you don't have Firefox, you can download it at the following website:

3) In order to access all course documents, it is required to have the following programs. If you don't have these programs, you can download them for free from the following web addresses:

Adobe Flash 6TM or higher: http://get.adobe.com/flashplayer/

Adobe Reader 6.0.2 or higher: http://get.adobe.com/reader/

Microsoft Reader for Windows-based desktops and laptop PCs: http://www.microsoft.com/reader/uk/downloads/pc.mspx


Grade Procedure:

- 4 lecture exams -100 points each 400 points
- Lab exam 100 points
- 12 Online quizzes 120 points
- 6 lab reports 180 points
- Tree Planting Project 50 points
- Weekly homework 55 points
- Total 905 points

Final Grade Scale:

<table>
<thead>
<tr>
<th>Total points</th>
<th>Percent</th>
<th>Grade</th>
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<tbody>
<tr>
<td>905 – 805</td>
<td>100 - 89.5%</td>
<td>A</td>
</tr>
<tr>
<td>804 – 720</td>
<td>89.4 - 79.5%</td>
<td>B</td>
</tr>
<tr>
<td>719 – 629</td>
<td>79.4 – 69.5%</td>
<td>C</td>
</tr>
<tr>
<td>628 – 539</td>
<td>69.4 – 59.5%</td>
<td>D</td>
</tr>
<tr>
<td>538 – 0</td>
<td>59.4 – 0%</td>
<td>F</td>
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EXAMS
There are four exams covering three chapters each. The exams consist of multiple choice and true or false questions. The exams are based on the assigned chapter readings, the power point posted for every chapter, the web animations posted for every chapter, additional sheets and websites posted by the instructor, and when indicated on case studies. A study guide is provided for each chapter to help prepare for the test. Study guides don’t have to be turned in.

LABS
There are six labs in the class. Four of the lab reports consist of answering questions on the worksheets provided by the instructor. The Scientific method lab and the Soils lab are formal reports that require the development of an introduction, procedure, results, analysis, conclusion and references. Labs can be completed individually or with one or two partners. If you choose to work with partners, you have to turn in all the labs with those same partners, and the names of every person in the team have to be included in every lab and picture submission.

A camera is required for the labs. You have to take pictures of every step of your experiment, and your face and the face of your partners have to appear in every picture set for every lab. If you are working with partners, a picture of you with your partner doing the lab has to be submitted. Failure to follow any of these guidelines will result in a zero for the lab exercise with no exceptions.

WRITING ACROSS THE CURRICULUM:
Writing is a required part of all biology courses. You will have writing assignments determined by your instructor.

PLAGIARISM
This is the act of taking someone else’s words or ideas and using them as your own. This is academic dishonesty and will not be tolerated. You will receive a grade of zero on the assignment and you will be subjected to the disciplinary actions under academic honesty.

WITHDRAWAL POLICY
If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by November 14th, 2019. Failure to do so will result in your receiving a performance grade, usually an “F.” If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdraw) in each class dropped. For more information about drop deadlines, refer to the current printed Credit Class Schedule, contact the Admissions/Registrar’s Office at 972-860-7167 (Room C119), or contact the division office.

If you drop a class via eConnect, make sure to print a copy of the confirmation and keep the copy. In the event of a discrepancy it will be the responsibility of the student to provide documentation of having dropped the class.
INSTITUTIONAL POLICIES


The guidelines in this syllabus may be changed, deleted or amended at any time by the instructor.

Lecture Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Class Lesson</th>
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<tbody>
<tr>
<td>August 26 – September 1</td>
<td>Chapter 1: Understanding Our Environment</td>
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<tr>
<td>September 2 – 8</td>
<td>Chapter 2: Environmental Systems</td>
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<td>Lab 1: Scientific Method</td>
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<td>September 9 – 15</td>
<td>Chapter 3: Evolution, Species Interactions, and Biological Communities</td>
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<td>Exam 1: Chapters 1, 2 and 3</td>
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<td>September 16 – 22</td>
<td>Chapter 4: Human Populations</td>
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<td>Lab 2: Human Populations</td>
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<tr>
<td>September 23 – 29</td>
<td>Chapter 5: Biomes and Biodiversity</td>
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<td>September 30 – October 6</td>
<td>Chapter 6: Environmental Conservation</td>
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<td>Lab 3: Natural Area Visit</td>
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<tr>
<td>October 7 - 13</td>
<td>Midterm Exam: Chapters 4, 5 and 6</td>
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<tr>
<td>October 14 - 20</td>
<td>SPRING BREAK – NO CLASSES!</td>
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<tr>
<td>October 21 - 27</td>
<td>Chapter 7: Food and Agriculture</td>
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<td>Lab 4: Properties of Soils</td>
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<td>October 28 – November 3</td>
<td>Chapter 8: Environmental Health</td>
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<td>November 4 - 10</td>
<td>Chapter 9 and 10: Air: Climate and Pollution</td>
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<td>Lab 5: Air Quality and Pollution</td>
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<td>November 11 - 17</td>
<td>Chapter 11: Water: Resources and Pollution</td>
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<td>Exam 3: Chapters 7, 8, 9 and 10</td>
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<td>November 18 - 24</td>
<td>Chapter 13: Energy</td>
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<td>Lab 6: Water Quality</td>
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<td>April 17 – Last day to drop with a W</td>
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<td>November 25 – December 1</td>
<td>Chapter 14: Solid and Hazardous Waste</td>
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<tr>
<td>December 2 - 8</td>
<td>Lab Exam</td>
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<tr>
<td>December 9 - 12</td>
<td>Exam 4: Chapters 11, 13 and 14</td>
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Note: This schedule is tentative. Any changes will be announced ahead of time. This schedule does not include the assignment dates. Look for assignment dates and instructions on e-campus.