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| NORTH CENTRAL TEXAS COLLEGECOURSE SYLLABUS |

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| *Course Title:*  | BIOL 2406 Environmental Science  |
| *Course Prefix & Number:*  | BIOL 2406 | *Section Number:*  | 402, 403, & 404 | *Semester/Year:*  | Spring 2020 |
| *Semester Credit Hours:*  | 4 | *Lecture Hours:*  | 3 | *Lab Hours:*  | 1 |
| *Course Description (NCTC Catalog):* 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.  |
| *Course Prerequisite(s):*  |
| *Required Course Materials:**Principles of Environmental Science* 8th edition, Cunningham and CunninghamISBN 978-0078036071 |

**INSTRUCTOR INFORMATION**

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| *Name of Instructor:* | Jill Sampson, M.S.  |
| *Campus/Office Location:* | Corinth Campus |
| *Telephone Number:* | Contact me via email/ Canvas |
| *E-mail Address:* | jsampson@nctc.edu |

**OFFICE HOURS**

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| --- | --- | --- | --- | --- |
| *Monday* | *Tuesday* | *Wednesday* | *Thursday* | *Friday* |
|  |  | **9:50 -11:20 am** | **9:50 -11:20 am** |  |
| **Or by appointment** |

**STUDENT LEARNING OUTCOMES** (From Academic Course Guide Manual/Workforce Education Course Manual/NCTC Catalog

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| *At the successful completion of this course the student will be able to:* |
|  | **Lecture Learning Outcomes**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 and economic ramifications.
8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.

**Lab Learning Outcomes**Upon successful completion of this course, students will:1. 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 scientific investigations.
4. Explain the structure and impact of biogeochemical cycles.
5. Describe energy transformations across trophic levels.
6. Illustrate abiotic/biotic interactions and symbiotic relationships.
7. Identify various types of natural resources, human impact on these resources, and common resource management practices.
8. Quantify and analyze the impact of lifestyle on the environment.
9. Depict evolutionary trends and adaptations to environmental changes.
10. Describe environmental hazards and risks and the social and economic ramifications.
11. Describe ecological and statistical techniques and approaches used in the study of environmental biology.
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**GRADING CRITERIA**

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| *# of Graded Course Elements* | *Graded Course Elements* | *Percentage or Point Values* |
| 5Q & 3 ER  | Quizzes & Exam Review  | 10% |
| 3 | Lecture Exams (15% each, multiple choice) | 45% |
| 1 | \*\*Optional Comprehensive Final Exam (multiple choice, short answer, and diagram labeling) | \*\*~15% |
| 2 LA & 14 D | Laboratory Assignments & Discussions | 20% |
| 1 | Project (Position paper) | 25% |
| Total |  | 100% |

**\*\*An optional comprehensive final will be offered as a make-up for missed exams or to replace the lowest exam grade.**

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| **Grading Scale** |
|  **89.5% & up = A**  **79.5-89.4% = B**  **69.5-79.4% = C**  **59.5- 69.4% = D** **Below 59.5% = F** |

**Note – A passing grade must be earned in BOTH lecture and laboratory in order to pass the course. Passing one component but not the other will result in a failing grade overall in the course.**

**PARTICIPATION & HOMEWORK POLICY**

Students are expected to participate by attending lectures and labs, asking questions, commenting (respectfully) on subject matter, engaging in the discussions and taking appropriate notes. Homework and lab assignments are due by the stated time on the homework/ lab sheet. **No late assignments will be accepted.** They are not to be completed in class on the date they are due! If a series of discussion questions are asked to the class, participation points will be given to students that actively and thoughtfully contribute to the discussion. Students are expected to participate in all lab exercises and attend all field trips unless arrangements are made with the instructor beforehand. For group projects, labs and class work the *minimum* number of students to a group is 2. Students must work with at least one other person when directed by the instructor.

**ATTENDANCE POLICY**

Regular and punctual attendance is expected of all students in all classes for which they have registered. All absences are considered to be unauthorized unless the student is absent due to illness or emergencies as determined by the instructor. It is the student responsibility to provide documentation as to the emergency for approval and judgment by the faculty member. Approved college sponsored activities are the only absences for which a student should not be held liable and only when provided by a college official ahead of the absence. Valid reasons for absence, however, do not relieve the student of the responsibility for making up required work. Students will not be allowed to make up an examination missed due to absence unless they have reasons acceptable to the instructor. A student who is compelled to be absent when a test is given should petition the instructor, in advance if possible, for permission to postpone the exam. Student will be dropped from a class by the Registrar upon recommendation of the instructor who feels the student has been justifiably absent or tardy a sufficient number of times to preclude meeting the course’s objectives. Persistent, unjustified absences from classes or laboratories will be considered sufficient cause for College officials to drop a student from the rolls of the College. From Board Policy FC (LOCAL)

*Absences exceeding 9 contact hours of lecture and or laboratory of BIOL 2406 may result in the student being dropped from the course. It shall be at the discretion of the instructor to drop students who are absent in excess of 9 contact hours.*

Last day to withdraw from a course with a “W” is \_\_\_\_April 3, 2020\_\_\_\_\_\_\_\_.

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| If a student cannot complete all the requirements of this course due to illness or some unavoidable conflict, they must request in writing a grade of “I” (incomplete) in order to be allowed to finish the requirements at a later date. When the instructor receives the request, he/she must reply in writing to the request, explaining why the grade of “I” will or will not be assigned. |

**DISABILITY SERVICES** (Office for Students with Disabilities)

The Office for Students with Disabilities (OSD) provides support services for students with disabilities, students enrolled in technical areas of study, and students who are classified as special populations (i.e. single parents).

Support services for students with disabilities might include appropriate and reasonable accommodations, or they may be in the form of personal counseling, academic counseling, career counseling, etc. Furthermore, OSD Counselors work with students to encourage self-advocacy and promote empowerment. The Counselors also provides resource information, disability-related information, and adaptive technology for students who qualify.

If you feel you have needs for services that the institution provides, please reach out to either Wayne Smith (940) 498-6207 or Yvonne Sandman (940) 668-3300. Alternative students may stop by Room 170 in Corinth or Room 111 in Gainesville.

**CORE CURRICULUM FOUNDATIONAL COMPONENT AREA** (For classes in the Core)\_\_\_\_\_\_\_\_

 Communication

 Mathematics

X Life and Physical Science

 Language, Philosophy & Culture

 Creative Arts

 American History

 Government/Political Science

 Social and Behavioral Sciences

 Component Area Option

**REQUIRED CORE OBJECTIVES** (For classes in the Core)

X Critical Thinking

X Communication

X Empirical and Quantitative

X Teamwork

 Personal Responsibility

 Social Responsibility

**COURSE TYPE**

 Academic General Education Course (from ACGM but not in NCTC Core)

X Academic NCTC Core Curriculum Course

 WECM Course

**STUDENT HANDBOOK**

Students are expected to follow all rules and regulations found in the student handbook and published online.

**ACADEMIC DISHONESTY**

Scholastic dishonesty shall include, but is not limited to cheating, plagiarism, academic falsification, intellectual property dishonesty, academic dishonesty facilitation and collusion. Faculty members may document and bring charges against a student who is engaged in or is suspected to be engaged in academic dishonesty. See Student Handbook, “Student Rights & Responsibilities: Student Conduct ([FLB(LOCAL)]”.

Consequences for academic dishonesty may include:

1. A zero “0” for the assignment and/or Exam.

Please take care of restroom needs PRIOR to the start of any exam or quiz; you will not be allowed to leave the room during the exam/ quiz for any reason unless you have completed and turned in your exam/ quiz. Cell phones and other electronic devices need to be silenced and put away during Exams/ Quizzes.

**CELL PHONE POLICY**

Cell phones must be silenced during class time. Your full attention is needed in class for your success; therefore, if you use electronic devices for non-class activities you may be asked to leave or put them away at the discretion of the instructor. When allowed by the professor, you may use electronic devices to help you during lab or lecture group work. Cell phones and other electronic devices need to be silenced and put away during Exams/ Quizzes.

**NCTC TOBACOO-FREE POLICY**

NCTC restricts the use of all tobacco products including E-cigarettes, cigarettes, cigars, pipes and smokeless tobacco on campus property. NCTC is aware that tobacco use influences underage students, which cumulates unsightly tobacco litter and interferes with assuring clean air for all who come to NCTC. NCTC recognizes the health hazards of tobacco use and of exposure to second hand smoke. Information on a tobacco cessation program is available for students, faculty, staff who wish to stop using tobacco products. We would like to "thank you" for your help in making our campuses Tobacco-Free. For questions or concerns please contact the Office of Vice President of Student Services at 940.668.4240.

**NCTC Starfish: Connect for Success & NCTC CARES**

The NCTC Starfish: Connect for Success program has been established to assist students who are at risk of failing or withdrawing from a course. Your instructor may refer you to this program if you are missing assignments, failing tests, excessively absent, or have personal circumstances impacting your academic performance. If submitted as an Early Alert you will be notified via your NCTC e-mail address and then contacted by a Counseling and Testing advisor or counselor to discuss possible strategies for completing your course successfully.

The NCTC CARES (Campus Assessment Response Evaluation Services) Team addresses behavior which may be disruptive, harmful or pose a threat to the health and safety of the NCTC community-such as stalking, harassment, physical or emotional abuse, violent or threatening behavior, or self-harm. As a student, you have the ability to report concerning behavior, which could impact your own safety or the safety of another NCTC student. Just click the NCTC CARES Team logo posted on MyNCTC, or send an e-mail to CARESTeam@nctc.edu.  As always, if you feel there is an immediate threat to your own safety or welfare (or to another student), please call 911 immediately.

**QUESTIONS, CONCERNS, or COMPLAINTS**

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| Name of Chair/Coordinator:  | Dr. Lisa Bellows |
| Office Location: | Gainesville Science Building Office 408/ 403 |
| Telephone Number: | 940-668-4252 |
| E-mail Address: | lbellows@nctc.edu |

**Laboratory Safety Guidelines**

**Note: Students are required to provide their own gloves. Gloves can be purchased at the bookstore.**

1. Locate safety equipment and know how to use the safety equipment.
2. Do not eat or drink in the laboratory.
3. Wear appropriate attire for laboratory work. **Students cannot wear open toed shoes, e.g., sandals, “flip-flops”**
4. Monitor risk: inform the instructor if you are pregnant, taking immunosuppressive medicines, or have any medical condition that might require special precautions in the lab, such as medications that would influence your response or reflex time. Under NO circumstances should you attend a lab session while “under the influence” of any chemical substance.
5. Avoid spills: place liquids toward the center of the bench, away from the edges.
6. Labels: read labels carefully before removing substances from containers.
7. Discard used chemicals and materials into appropriately labeled containers, do not dispose of them down the sink unless specified by the instructor.
8. Broken glass: be careful handling broken glassware with bare hands. Dispose of all cracked or broken glassware in special puncture resistant containers found in the labs, not the regular trash can.
9. Report any spills, accidents, strange occurrences, or other safety incidents to the instructor.
10. Professional conduct is expected to avoid creating dangerous situations. If you have any questions concerning the safety of a procedure, consult your instructor.
11. Immediately report damaged equipment to your instructor.
12. Thoroughly wash hands with soap and water before leaving the laboratory.

**ENVIRONMENTAL BIOLOGY LECTURE & LAB SCHEDULE (tentative)**

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| Week |   | Date | Lecture | Reading  | Homework | Lab |
| 1 | T | 21-Jan | Syllabus; Ch. 1 Understanding the Environment | Ch. 1; Ch. 16 Policy |   | Sci Method  |
|   | Th | 23-Jan | Ch. 1 (cont.)  |   |   | Sci Method |
| 2 | T | 28-Jan | Ch. 2 Environmental Systems | Ch. 2 |   | Nutrient Cycles  |
|   | Th | 30-Jan | Ch. 2 (cont.)  |   |  | Nutrient Cycles |
| 3 | T | 4- Feb | Ch. 3 Evolution, Species Interactions, Communities | Ch. 3 | Sci Method research & Env. Sy. Quiz  | Food Webs  |
|   | Th | 6-Feb | Ch. 3 (cont.) |   |   | Food Webs |
| 4 | T | 11-Feb | Ch. 5 Biomes & Biodiversity  | Ch. 5 |  Food Web | Biodiversity  |
|   | Th | 13-Feb | Ch. 5 (cont.)  |   |   | Biodiversity  |
| 5 | T | 18-Feb | Ch. 6 Environmental Conservation  | Ch. 6; Ch. 16 Endangered Species |  Biomes and Biodiversity Quiz | Sampling  |
|   | Th | 20-Feb | **EXAM 1** |  |  | Sampling  |
| 6 | T | 25-Feb | Ch. 4 Human Populations | Ch. 4 |  | Human Population |
|   | Th | 27-Feb | Ch. 7 Food & Agriculture | Ch. 7 | Food & Ag Quiz | Human Population |
| 7 | T | 3-Mar | Ch. 14 Solid & Hazardous Waste |  Ch. 14; Ch. 16 Superfund Act |   | Consumption/Sampling  |
|   | Th | 5-Mar | Ch. 8 Environmental Health & Toxicology  | Ch. 8 |   | Consumption/Sampling  |
| 8 | T | 10-Mar | Spring Break |  |   |  |
|   | Th | 12-Mar | Spring Break |   |   |  |
| 9 | T | 17-Mar | Ch. 12 Geology & Earth Resources | Ch. 12 |   | GMO’s & BPA’s  |
|   | Th | 19-Mar | Ch. 12 (cont.) |  |   | GMO’s & BPA’s  |
| 10 | T | 24-Mar | **EXAM 2** |   |   | Marine Ecosystems/ Soil & Minerals  |
|   | Th | 26-Mar | Ch. 11 Water | Ch. 11; Ch. 16 Water Quality |   | Marine Ecosystems/ Soil & Minerals  |
| 11 | T | 31-Mar | Ch. 9 Climate |   |  Water Quiz | Water Quality |
|   | Th | 2-Apr | Ch. 9 Climate  | Ch. 9 |  | Water Quality |
| 12 | T | 7-Apr | Ch. 10 Air Pollution |   |  | Invasive Species/ Climate Change |
|   | Th | 9-Apr | Ch. 10 Air Pollution | Ch. 10; Ch. 16 Air Quality |  | Invasive Species/ Climate Change |
|  13 | T | 14-Apr |  Ch. 13 Energy |   Ch. 13 |  Air Pollution Quiz | Energy Consumption & Air Pollution |
|   | Th | 16-Apr | Ch. 13 Energy (cont.) |   |   | Energy Consumption & Air Pollution |
| 14 | T | 21-Apr | Ch. 15 Economics and Urbanization | Ch. 15 |  | Fossil Fuels |
|   | Th | 23-Apr | **Project Prep** |  |  | Fossil Fuels |
| 15 | T | 28-Apr | **Project Prep** |  | Project Due  | Air Quality; Energy & Urbanization |
|  | Th | 30-Apr | **EXAM 3** |   |  | Air Quality; Energy & Urbanization |
| 16 | T |   | **COMPREHENSIVE FINAL EXAM** | FINALS | FINALS | FINALS |
|  |  | 11-May |  |  |  |  |