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| NORTH CENTRAL TEXAS COLLEGECOURSE SYLLABUS |

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| *Course Title:*  | BIOL 2406 Environmental Biology |
| *Course Prefix & Number:*  | BIOL 2406 | *Section Number:*  | 400 | *Semester/Year:*  | Fall2020 |
| *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. \*Note: This course is fully online with pre-recorded lectures.  |
| *Course Prerequisite(s):*  |
| *Required Course Materials:***Lecture Book:***Principles of Environmental Science* 9th edition, Cunningham and CunninghamISBN 978-1260219715 |

**INSTRUCTOR INFORMATION**

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| *Name of Instructor:* | Amy Hoffman, M.S.  |
| *Campus/Office Location:* | I will be online **Monday through Thursday from 9am- 11am and 1pm- 3pm**. My goal is to respond to all emails within 24 hours. If you would like a video meeting please make an appointment through Canvas email or CiscoWebex. |
| *Telephone Number:* | 940-668-4290 (fastest contact is via Canvas email) |
| *E-mail Address:* | ahoffman@nctc.edu |

**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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**TENTATIVE COURSE SCHEDULE ON LAST PAGE OF SYLLABUS**

**GRADING CRITERIA**

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| *# of Graded Course Elements* | *Graded Course Elements* | *Percentage or Point Values* |
| 3 | Lecture Homework Assignments | 15% |
| 12 | Discussions/ Lecture Group Work/ Quizzes (drop lowest 2**+**) | 10% |
| 3 | Lecture Exams (15% each, multiple choice) | 45% |
| 1 | \*\*Optional Comprehensive Final Exam (multiple choice) | \*\*15% |
| 18 | Laboratory Assignments (drop lowest 2**+**) | 30% |
| Total |  | 100% |

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

**+If an assignment is REQUIRED it cannot be dropped.**

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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** |

**QUIZ/ EXAM INSTRUCTIONS**

The are several individual assignments for this course, these include: Lab Quizzes/ Assignments, Lecture Quizzes, and Lecture Exams. The Google Chrome Browser seems to work best.

***Lab Assignments/ Quizzes***

Most Labs will be handouts and will be posted in Modules. For extra help, there are Additional Resource pages with links and introduction videos to each lab throughout the course in Modules.

For Lab Quizzes students will get 2 attempts in taking each Quiz and the highest score will be kept. The time limit is 15 minutes. The quiz questions will come from a question bank, so for each attempt students will receive different questions.

***Lecture Quizzes***

Lecture Quizzes are based on the provided powerpoints and Video lectures posted in Modules. There will be one Lecture Quiz in the middle of each Unit. There are 20 multiple choice questions. Students will get 2 attempts in taking the Quiz and the highest score will be kept. The time limit is 15 minutes. The quiz questions will come from a question bank, so for each attempt students will receive different questions. The Exam Review is a great way to study for these quizzes.

***Lecture Exams***

Lecture Exams are based on the provided powerpoints, Video lectures, Lecture Quizzes, Homework, and the Lab Handouts posted in Modules. The Lecture Exam Review is a great way to study for the Lecture Exams. Each Lecture Exam is 35 multiple choice questions. Students will get 2 attempts in taking the Exam and the highest score will be kept. The time limit is 20 minutes. The exam questions will come from a question bank, so for each attempt students will receive different questions. The Lecture Exam will be available on the date(s) indicated on the syllabus and grades will be re-weighted after the Exam closes. The Final Lecture Exam can replace the student’s lowest Lecture Exam grade. If the student receives a lower grade on the Final Lecture Exam (compared to his or her other Lecture Exam grades) the Final will not hurt their grade.

**PARTICIPATION & HOMEWORK POLICY**

Students are expected to participate by asking questions, commenting (respectfully) on subject matter, engaging in the discussions and taking appropriate notes. Attendance will be taken once a week and is based on the completion of the weekly assignments.

Assignments are due by the stated time on the syllabus, Canvas, and/or the date on the worksheet. **No late assignments will be accepted.** Students are welcome to turn in assignments early.

***Group Work***

Group Work will be submitted individually. Students can work with others if they wish, but each student will need to submit their own answers. You are welcome to complete Group Work assignments on your own in an online course.

***Homework and Lab Assignments***

Homework and Lab assignments will be individual. Please do not plagiarize or submit another student’s homework assignment.

***Discussions***

There will be at least one graded Discussion for each Unit. Please comment respectfully with other students and write in complete sentences.

**SUBMISSION INSTRUCTIONS**

Due dates are indicated in Canvas, on the provided worksheet and/or on the last pages of the syllabus.

Students are only required to submit the answers to the questions (typed or handwritten). Students can still choose to download the assignment and fill in the blanks around the questions.

Students can submit assignments by clicking on the individual assignment in Canvas and uploading a picture (jpeg) or other attachment (pdf, word doc, pages). Students can also answer the questions in the text box for the assignment on Canvas.

In the event the instructor is unable to open a student’s submission of a Homework, Group Work, and/or special non-quiz Lab assignment the student must resubmit the assignment within 24 hours once the instructor has notified the student via comments on that specific assignment in Canvas. Each student is allowed **one** resubmission of **one** assignment during a semester. There will be 10 points taken off the assignment.

**ATTENDANCE POLICY**

Attendance will be taken once a week and is based on the completion of the weekly assignments. 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. Students 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 \_\_\_\_\_Nov. 2, 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. The student needs to be in good standing (passing with an A or B) to apply for an “I”. |

**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.

On the Corinth Campus, go to room 170 or call 940-498-6207. On the Gainesville Campus, go to room 110 or call 940-668-4209.  Students on the Bowie, Graham, Flower Mound, and online campuses should call 940-668-4209.

North Central Texas College is on record as being committed to both the spirit and letter of federal equal opportunity legislation, including the Americans with Disabilities Act (ADA) of 1990, ADA Amendments Act of 2009, and Section 504 of the Rehabilitation Act of 1973 (P.L. 93-112). <http://www.nctc.edu/StudentServices/SupportServices/Disabilityservices.aspx>

**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. http://nctc.smartcatalogiq.com/en/2016-2017/Catalog/North-Central-Texas-College-Student-Handbook

**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.

**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 EARLY ALERT & NCTC CARES**

For help:

NCTC main phone number: 940-668-7731

Students can TEXT NCTC at: 940-251-0701

Students can email NCTC with advising questions at: advising@nctc.edu.

The NCTC Early Alert 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 |
| Telephone Number: | 940-668-4252 |
| E-mail Address: | lbellows@nctc.edu |

**Laboratory Safety Guidelines**

***\*\*Although this course is Online, there will be a state required Safety Quiz in the Intro/Unit 1 Module.***

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)**

***\*NCTC is closed Sept. 7th for Labor Day and Nov. 25th-29th for Thanksgiving Holiday.***

*\*\*Each unit will open at specific times set by the instructor. Lecture Exams will only be open on the specific dates and times below. If there is a conflict please notify the instructor immediately and see the Attendance section of the Syllabus.*

All assignments will be graded after their due date.

Sometimes there are several assignments due the same day. It is recommended to turn in work and/or complete the work early.

**Unit 1: The Essentials**

***Open: Monday, August 24th 12:00am***

**Lecture Quiz 1: Covers Ch. 1, 2, and 3. Due: Due: Wednesday, September 16th 11:59pm**

**HW 1 Due: Friday, September 18th 11:59pm**

**Syllabus Quiz Due: Monday, August 31st 11:59pm**

**Lab Safety Quiz Due: Monday, August 31st 11:59pm**

**Environmental Intro. Discussion: Due: Monday, August 31st 11:59pm**

**Ch. 1 Understanding the Environment**

**Lab:**

**Scientific Method Lab Due: Monday, August 31st 11:59pm**

**Microscope Quiz Due: Tuesday, September 8th 11:59pm**

**Ch. 2 Environmental Systems**

**Lab:**

**Biogeochemical Cycles Lab Due: Tuesday, September 8th 11:59pm**

**Ch. 3 Evolution, Species Interactions, and Communities**

**Lab:**

**Food Webs & Sampling Due: Monday, September 14th 11:59pm**

**Ch. 5 Biomes & Biodiversity**

**Lab:**

**Biomes & Biodiversity Lab Due: Monday, September 14th 11:59pm**

**Invasive Species Lab Due: Monday, September 21st 11:59pm**

**Ch. 6 Environmental Conservation**

**GW Conservation Due: Wednesday, September 23rd 11:59pm**

**Lecture Exam 1**

***Open: Saturday, September 26th 12:00am***

 ***Closes: Sunday, September 27th 11:59pm***

**Unit 2: Human Population & Activity**

***Open: Sunday, September 27th 12:00am***

**Lecture Quiz 2: Covers Ch. 4, 7, and 14. Due: Wednesday, October 21st 11:59pm**

**HW 2 Due: Friday, October 23rd 11:59pm**

**Ch. 4 Human Populations**

**GW Population Due: Monday, October 5th 11:59pm**

**Lab:**

**Population Growth Due: Monday, October 5th 11:59pm**

**Ch. 7 Food & Agriculture**

**GW Food Survey Due: Monday, October 12th 11:59pm**

**Lab:**

**Marine Fisheries Due: Monday, October 12th 11:59pm**

**Soil Due: Monday, October 19th 11:59pm**

**Ch. 14 Solid & Hazardous Waste**

**GW Trash Due: Monday, October 19th 11:59pm**

**Lab:**

**Consumption Due: Monday, October 26th 11:59pm**

**Ch. 8 Environmental Health & Toxicology**

**Disease Discussion Due: Monday, October 26th 11:59pm**

**Toxin Discussion Due: Wednesday, October 28th 11:59pm**

**Ch. 12 Geology & Earth Resources**

**GW Geology Due: Wednesday, October 28th 11:59pm**

**Lecture Exam 2**

***Open: Saturday, October 31st 12:00am***

 ***Closes: Sunday, November 1st 11:59pm***

**Unit 3: Pollution & The Future**

***Open: Sunday, November 1st 12:00am***

**HW 3 Due: Friday, November 20th 11:59pm**

**Lecture Quiz 3: Covers Ch. 11, 9, and 10. Due: Tuesday, November 24th 11:59pm**

**Extra Credit Due: Sunday, December 6th 11:59pm**

**Ch. 11 Water Pollution**

**GW Water Due: Monday, November 9th 11:59pm**

**Lab:**

**Water Quality Pt. 1 Due: Monday, November 9th 11:59pm**

**Water Quality Pt. 2 Due: Monday, November 9th 11:59pm**

**Ch. 9 Climate**

**GW Climate Due: Monday, November 16th 11:59pm**

**Lab:**

**Climate Change** **Due: Monday, November 16th 11:59pm**

**Ch. 10 Air Pollution**

**GW Air Due: Monday, November 23rd 11:59pm**

**Lab:**

**Air Pollution** **Due: Monday, November 23rd 11:59pm**

**Ch. 13 Energy**

**Lab:**

**Energy Due: Monday, November 30th 11:59pm**

**Ch. 15 Economics & Urbanization**

**Lab:**

**Urbanization** **Due: Monday, November 30th 11:59pm**

**Urban/ Rural Discussion Wednesday, December 2nd 11:59pm**

**Required Quiz Wednesday, December 2nd 11:59pm**

**Lecture Exam 3**

***Open: Saturday, December 5th 12:00am***

 ***Closes: Sunday, December 6th 11:59pm***

**Finals**

**Final Lecture Exam**

***Open: Tuesday, December 8th 12:00am***

***Closes: Wednesday, December 9th 11:59pm***