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| NORTH CENTRAL TEXAS COLLEGECOURSE SYLLABUS |

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| Course Title: **Environmental Biology**  |
| Course Prefix & Number: **BIOL 2406** | Section Number:  **399** | Semester: Spring 2017 |
| Semester Credit Hours: **4** | Lecture Hours: **48** | Lab Hours: **32** |
| 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. This laboratory-based course accompanies Biology 2306, Environmental Biology. Laboratory activities will reinforce 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): None |
| Required or Recommended Course Materials:Cunningham, W. P., & Cunningham, (2016). Principles of Environmental Science: Inquiry and Application 9th ed.). New York: McGraw Hill.  |

**INSTRUCTOR INFORMATION**

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| Name of Instructor: | Belinda H. Anderson |
| Campus/Office Location: | Bowie Campus Room 132 |
| Telephone Number: | 940-872-4002 ext. 5217 |
| E-mail Address: | banderson@nctc.edu |
| Office Hours: | Monday12:30-3Wednesday 10:30-3 or online H10-12  |

**GRADING CRITERIA**

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| **Graded Course Elements** | **Point Values** |
| Exams 3@ 180 points each | 540 points |
| Lab Grades | 320 Points |
| Lecture Discussions | 140 Points |
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| **TOTAL** | **1000 Points** |

**STUDENT LEARNING OUTCOMES**

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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. |
| LABORATORY LEARNING OUTCOMES |
| 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. |

**ATTENDANCE POLICY**

Absences exceeding 9 contact hours of lecture and or laboratory of BIOL 2406 may result in 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.

**TENTATIVE SCHEDULE**

Last day to withdraw from a course with a “W” is April 6, 2017

Spring Break is March 13-18, 2017

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| **Date** | **Topic** | **Chapter/ Module** |
| 1/17-1/20 | Introduction and General Overview | 1 / Module 1 |
| 1/23-1/27 | Environmental Systems  | 2/ Module 2 |
| 1/30-2/3 | Evolution, Species Interactions, Biological Communities | 3/ Module 3 |
| 2/6-2/10 | Human Population  | 4/Module 4 |
| 2/13-2/17 | Biomes and Biodiversity | 5/ Module 5/ **Exam 1** |
| 2/20-2/24 | Conservation/ slum tourism | 6/ Module 6 |
| 2/27-3/3 | Food and Agriculture | 7/ Module 7 |
| 3/6-3/10 | Health and Toxicology | 8/ Module 8 |
| 3/13-3/17 | SPRING BREAK |  |
| 3/20-3/24 | Climate and Air Pollution  | 9-10/ Module 9 |
| 3/27-3/31 | Water | 11/ Module 10/ **Exam 2** |
| 4/3-4/7 | Geology  | 12/ Module 11 |
| 4/10-4/14 | Energy | 13/ Module 12 |
| 4/17-4/21 | Solid Waste | 14/ Module 13 |
| 4/24-4/28 | Economics and Urbanization, Policy and Sustainability | 15-16 |
| 5/1-5/5 |  **Exam 3, Lab Final** | Module 15 |
| 5/8-5/12 | **FINAL EXAM WEEK** |  |

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| - No student’s grades will be discussed with any individual other than the student. Grades will not be given out over the phone.-Makeup work and exams **may** be given at the discretion of the instructor.-Scholastic dishonesty shall constitute a violation of college rules and regulations and is punishable as prescribed by Board policies. Scholastic dishonesty shall include, but not be limited to cheating on a test, plagiarism, and collusion. See the Student Handbook for more information.**Lab Grades**Your labs will consist primarily of videos you must watch and complete a quiz over. There will also be some discussion boards, surveys and a power point presentation that you will be responsible for. There will be a comprehensive lab final the last week of class that will cover the information learned in lab only. The following is a tentative outline of the lab material for each. As you can see, there is no Module 1 lab. Your labs will start the second week of classes and are structured this way to correspond with the subject we will be covering in lecture that week. You will be assigned your power point presentation earlier in the semester but will be given two weeks at the end of the semester to complete it. Module 13 will be due April 28.

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| Module 2 | Microscope Study | Quiz | 10pts. |
| Module 3 | Vermiculture Study | Quiz | 10pts |
| Module 4 | Ecological Footprints | Quiz | 10pts |
| Module 5 | Climate Change/Biomes | Quiz | 10pts |
| Module 6 | National Park Contest | Discussion/Vote | 20pts |
| Module 7 | How We Eat | Survey | 10pts |
| Module 8 | Light Pollution | Survey | 10pts |
| Module 9 | Landfill Tour | Quiz | 10pts |
| Module 10 | Waste Water Treatment Tour | Quiz | 10pts |
| Module 11 | Agrihood  | Discussion | 10pts |
| Module 12 | Slum Tourism | Discussion | 10pts |
| Module 13 | Environmental Topic | Power Point Presentation | 100pts |
| Module 14 | Continuation of Module 13 | Power Point Presentation | Due April 28  |
| Module15 | Comprehensive Lab Final | Multiple Choice | 100pts |

The lab Modules (2-14) are worth a total of 220 points. The lab final will be worth 100 points and will consist of multiple choice questions over the topics and information learned in lab this semester. The total points you can earn for lab is 320 points. |

**DISABILITY SERVICES (OSD)**

The Office for Students with Disabilities (OSD) provides accommodations for students who have a documented disability. 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**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Communication

X Mathematics

 Life and Physical Science

 Language, Philosophy & Culture

 Creative Arts

 American History

 Government/Political Science

 Social and Behavioral Sciences

 Component Area Option

**REQUIRED CORE OBJECTIVES**

x Critical Thinking

 Communication

 Empirical and Quantitative

 Teamwork

x Personal Responsibility

x Social Responsibility

**COURSE TYPE**

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

XAcademic 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

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| Name of Chair/Coordinator:  | Doug Elrod, Ph.D. |
| Office Location: | Corinth Campus 351 |
| Telephone Number: | (940) 498-6291 |
| E-mail Address: | daelrod@nctc.edu |