Course number: **BIOL 2406**

Course title: **Environmental Biology**

Semester hours: **4**

**Foundational Component Area**

A. The course “focus[es] on describing, explaining, and predicting natural phenomena using the scientific method.”

*In this course, students are taught to utilize the scientific method as a way to describe the components of the natural world, explain how these components of the environment function and analyze man’s impact of and predict outcomes based on observed data. This is accomplished in laboratory and classroom activities, and demonstrations field trips and assignments. Students are taught to conduct observations, generate hypotheses, collect data, analyze data, to draw conclusions and make predictions.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies,* *laboratory reports*

B. The course “involve[s] the understanding of interactions among natural phenomena and implications of scientific principles on the physical world and on human experiences.”

*This course is based in a man’s interaction to the natural world. Students are required to understand how these natural systems operate under normal conditions and how man’s interactions affect the abiotic and biotic systems. Additionally, students understand how changes in certain natural and human phenomena can bring about major changes in affecting organisms, human health, ecosystem dynamics and global homeostasis.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies, laboratory reports*

**Core Objectives**

A. Critical Thinking, Aspect 3: “Students will analyze information effectively.”

*Throughout the semester, students are required to analyze course information examining similarities and differences between and relationships among the different levels of organization in natural (from atoms to ecosystems). An example of the effective analysis of information can be observed in the understanding of trophic levels provided in lecture and laboratory exercises. Students produce their own data and analyze it effectively to determine the trophic level of specific organisms.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies, laboratory reports*

B. Critical Thinking, Aspect 4: “Students will evaluate information effectively.”

*Throughout the semester, students are required to evaluate information by evaluating the relationships of biotic and abiotic data. Numerous laboratory and lecture assignments require students to evaluate data by producing graphs. This process allows students to evaluate the information visually and determine the relationship and causation of variables.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies, laboratory reports*

C. Critical Thinking, Aspect 5: “Students will synthesize information effectively.”

*The students are expected to be able to synthesize information throughout the course and make informed conclusions using the scientific method. An example would be, the analysis of environmental carrying capacity. Students are required to synthesize the information from data provided or collected in lecture and laboratory activities and make conclusions regarding the carrying capacities of different species under changing environmental conditions.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies, laboratory reports*

D. Communication, Aspect 1: “Students will demonstrate effective development, interpretation, and expressions of ideas through written communication.”

*Numerous examples of written communication can be illustrated in the course. Essays are assigned in lecture and laboratory write-ups and activities that require students to develop, interpret, and synthesis of specific environmental processes and human impact on the environment. Graphs, cycles, and chemical equations are also utilized in the course. Students analyze specific case studies and write critiques on impact and understanding.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, Essays, laboratory reports*

E. Communication, Aspect 3: “Students will demonstrate effective development, interpretation, and expressions of ideas through visual communication.”

*As part of the course, students are required to produce labeled drawings and diagrams of multiple environmental relationships. A prime example of this would be the multi-week laboratory activity that students conduct assembling a green-building community. Visual aids must be clear, easily understood, and well-developed. Numerous graphs are produced in this course as well as food chains, food webs, trophic levels, and environmental cycles*

Assessment: *Laboratory and Lecture exams, Homework Assignments, case studies, laboratory reports*

F. Empirical and Quantitative Skills, Aspect 1: “Students will demonstrate effective manipulation of numerical data or observable facts”

*Students are required to demonstrate effective manipulation of numerical data and/or observations in a number of ways and throughout the semester. An example of this can be witnessed in activities and assignments in lab and in lecture such as trophic energy levels, population growth models, carrying capacity calculations, predator prey relationships and human/organismal life table activities.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, laboratory reports*

G. Empirical and Quantitative Skills, Aspect 2: “Students will demonstrate effective analysis of numerical data or observable facts”

*As part of the course, students are expected to be able to analyze numerical or observational data based on scientific inquiry. An example of this can be witnessed in activities and assignments in lab and in lecture such as trophic energy levels, population growth models, carrying capacity calculations, predator prey relationships and human/organismal life table activities. In each case data collected and or provided are analyze to make informed conclusions based on the information they have been learning. This occurs with both numerical data and observations.*

*Assessment: Laboratory and Lecture exams, Homework Assignments, laboratory reports*

H. Empirical and Quantitative Skills, Aspect 1: “Students will demonstrate effective use of numerical data or observable facts to reach informed conclusions”

*As part of the course, students are expected to be able to reached informed conclusions based on data analyzed. An example of this can be witnessed in activities and assignments in lab and in lecture such as trophic energy levels, population growth models, carrying capacity calculations, predator prey relationships and human/organismal life table activities. Most often data collected and students are required to analyze the data and make informed conclusions based on the information they have been learning. This occurs with both numerical data and observations.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, laboratory reports*

I. Teamwork: “Students will demonstrate the ability to consider different points of view and to work effectively with others to support shared purpose or goal.”

*The laboratory portion of the course is based on a collaborative learning environment. This is accomplished by breaking the students into small groups and those small groups working together to accomplish a shared goal (all laboratory exercises are conducted as small group work). This allows students to consider multiple points of view and understand how the scientific relates to the human experience.*

Assessment: *Laboratory and Lecture exams, Homework Assignments, laboratory reports*

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| |  | | --- | | NORTH CENTRAL TEXAS COLLEGE  COURSE SYLLABUS | |

*The North Central Texas College (NCTC) Course Syllabus provides the following as required by the Texas Higher Education Coordinating Board (THECB): (1) a brief description of the course including each major course requirement, assignment and examination; (2) the learning objectives for the course; (3) a general description of the subject matter of each lecture or discussion; and (4) any required or recommended readings. Contact information for the instructor is also provided. The Course Syllabus also provides institutional information to indicate how this course supports NCTC’s purpose and mission. Information specific to a particular section of the course will be included in the Class Syllabus and distributed to enrolled students.*

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| --- | --- | --- | --- |
| Course Title: Environmental Biology | | | |
| Course Prefix & Number: BIOL 2406 | | Section Number: 400 | Term Code:  2017 SP |
| Semester Credit Hours: 4 | | Lecture Hours: 3 | Lab Hours: 1 |
| Course Description:  An introduction to basic ecological principles and techniques. Aquatic and terrestrial communities will be studied with emphasis upon biotic interrelationships and the effects of pollution upon various biotic communities. Topics covered in lecture include: 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 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. The laboratory will combine experimental studies with field investigations. | | | |
| Course Prerequisite(s): | | | |
| Course Type:   - **Academic General Education Course** (from Academic Course Guide Manual but not in NCTC Core)   - **Academic** **NCTC Core Curriculum Course**   - **WECM Course** | | | |
| Name of Instructor: | **Larry Legg** | | |
| Campus: | **NCTC Corinth Campus** | | |
| Telephone Number: | **Contact me via email** | | |
| E-mail Address: | **llegg@nctc.edu** | | |
| Office Hours: | TBA | | |

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| Name of Chair/Coordinator: | **Doug Elrod, Ph.D.** |
| Office Location: | **NCTC Corinth, # 351** |
| Telephone Number: | **940-498-6232 x6291** |
| E-mail Address: | daelrod@nctc.edu |

**REQUIRED OR RECOMMENDED COURSE MATERIALS**

**Required text: Principals of Environmental Science, Inquiry & Applications, 8th Edition, Cunningham and Cunningham, 2017**

**COURSE REQUIREMENTS, EVALUATION METHODS AND GRADING CRITERIA**

|  |  |  |
| --- | --- | --- |
| **# of Graded Course Elements** | **Graded Course Elements** | **Percentage of grade** |
| 3 | Lecture Homework Assignments | 15% |
| 12 | Lecture Participation/Quizzes (drop lowest 2) | 10% |
| 3 | Lecture Exams (15% each, multiple choice, short answer and diagram labeling) | 45% |
| 1 | \*\*Optional Comprehensive Final Exam (multiple choice, short answer, and diagram labeling) | \*\*15% |
| 12 | Laboratory Assignments (drop lowest 2) | 10% |
| 1 | Position paper | 20% |
| **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.**

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| ***Participation: 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. The required textbook is a valuable resource of information and students will be expected to keep up with its reading. A Daily grade will be taken in the form of pop quizzes, discussion participation, and homework assignments. 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! Lecture quizzes are un-announced and will be given to ensure that the textbook is being read and these cannot be made up. 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.***  ***If a student misses more than 9 hours of instruction he/she can be dropped from the class.***  ***Exams: There will be 3 regular exams and 1 optional comprehensive final offered during the course of the semester. Students are expected to take exams on the date given. Make-up exams will not be offered. If the student cannot take the exam on the date assigned, please notify the instructor within 24 hours. The comprehensive final exam will be offered to all students and will replace their lowest exam grade or missed exam. Exams will be multiple choice, completion, and short answer/essay. Since the goal of this course is to engage students in active discussions utilizing critical thinking skills, there will not be adequate class time to cover all the course material in lecture format. Note however, that approximately 60 -80% of the tested material will come from the brief verbal lectures, class discussions and PowerPoint lectures. The remaining material will come from the required textbook readings. Students wishing to achieve an “A” in this course will need to read and study the textbook!***  *The last day to drop a class with a “W” is***April 6, 2017.**  ***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.*** |

**INSTITUTIONAL LEARNING GOALS**

 A quality general education curriculum in all associate degree programs.

 Quality freshman and sophomore level courses in arts and sciences which parallel the lower division offerings of four-year colleges and universities.

 Quality technical programs leading directly to careers in semi-skilled and skilled occupations, and quality technical education programs up to two years in length leading to certificates and associate degrees.

 Quality programs and services in support of adult literacy and basic skills development as a mean of workforce enhancement and expanding access to higher education.

**PROGRAM PURPOSE STATEMENT**

NCTC seeks to implement its goal of offering quality general education curriculum in all associate degrees by offering a core of general education courses designed to help students achieve academic, career and lifelong goals. Acquiring knowledge, thinking critically, and utilizing the methodologies of various disciplines exposed students to experiences that serve to advance their personal growth. The chief focus of the General Education Core Curriculum at NCTC is to emphasize Exemplary Educational Objectives and Basic Intellectual Competencies.

**DEPARTMENTAL PURPOSE STATEMENT**

The purpose of the Science Department is to provide instruction in the areas of chemistry and biology as these disciplines relate to the overall mission of NCTC, and to provide a qualified, competent faculty, and staff to ensure that the delivery of the instruction of these courses is consistently of high quality.

**STATEMENT OF SKILLS AND KNOWLEDGE EXPECTED OF NCTC GRADUATES**

NCTC seeks to implement its goal of offering a core of general education courses designed to help students achieve academic, career and lifelong goals. The chief focus of the General Education Core Courses at NCTC is to emphasize basic intellectual competencies and broad intellectual perspectives.

**FOUNDATIONAL COMPONENT AREA: Life and Physical Science**

The course focuses on describing, explaining, and predicting natural phenomena using the scientific method and involves the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

**ACGM LEARNING OUTCOMES**

Upon successful completion of this course, students will:

**LECTURE**

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**

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.

**Core Objectives**

* Critical Thinking, Aspect 3: “Students will analyze information effectively.”
* Critical Thinking, Aspect 4: “Students will evaluate information effectively.”
* Critical Thinking, Aspect 5: “Students will synthesize information effectively.”
* Communication, Aspect 1: “Students will demonstrate effective development, interpretation, and expressions of ideas through written communication.”
* Communication, Aspect 3: “Students will demonstrate effective development, interpretation, and expressions of ideas through visual communication.”
* Empirical and Quantitative Skills, Aspect 1: “Students will demonstrate effective manipulation of numerical data or observable facts.”
* Empirical and Quantitative Skills, Aspect 2: “Students will demonstrate effective analysis of numerical data or observable facts.”
* Empirical and Quantitative Skills, Aspect 3: “Students will demonstrate effective use of numerical data or observable facts to reach informed conclusions.”
* Teamwork: “Students will demonstrate the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

**GENERAL DESCRIPTION OF SUBJECT MATTER FOR EACH LECTURE/DISCUSSION**

|  |  |
| --- | --- |
| **Topic** | **General Description of Subject Matter** |
| **Understanding the environment** | **Overview of the study of environmental science** |
| **Environmental systems** | **Understanding connections, cycles, flows and feedback loops in the environment** |
| **Evolution, Species Interactions, and Biological communities** | **Understanding the importance of species diversity, habitats, species interactions, community stability, and disturbances** |
| **Human populations** | **Why are we concerned about human population growth, the relationship between human population and environmental impact, changes in human population growth** |
| **Biomes and Biodiversity** | **The major biomes, vertical stratification, the importance of specific habitats (coral reefs, estuaries, etc), what is biodiversity, what are its benefits** |
| **Environmental Conservation: Forests, Grasslands, Parks, and Nature Preserves** | **What are the threats to global habitats such as forests and grasslands, and what are some steps to protect them?** |
| **Food and Agriculture** | **Why does hunger persist in the world? What are our primary food crops? What is the green revolution and what are GMOs? What are the environmental costs of industrial farming** |
| **Environmental Health and Toxicology** | **What is “risk”, what are the connections between our health and ecology, the dose-response relationship, what risk is “acceptable” and to whom?** |
| **Air: Climate and Pollution** | **Learn the layers of the atmosphere, what is the “greenhouse effect”, what do we know about climate change, what are some strategies to minimize climate change** |
| **Water: Resources and Pollution** | **Where does our water come from and where does it go after we use it? Water shortages and conservation** |
| **Environmental Geology and Earth Resources** | **Causes of earthquakes, volcanoes, environmental costs of oil and gas drilling , consumption of resources** |
| **Energy** | **Dominant sources of energy, and why; coal, peak oil, nuclear, renewable energy** |
| **Solid and Hazardous Waste** | **Components of the waste stream and where does it go; ocean dumping problems, toxic and hazardous waste, bioremediation, Superfund** |
| **Economics and Urbanization** | **What are the environmental problems associated with large cities, what is smart growth and new urbanism, free ecological services** |
| **Environmental Policy and Stability** | **What is environmental policy and how is it formed, what are the landmark environmental laws in the US, what is citizen science?** |

**BASIC INTELLECTUAL COMPETENCIES FOR THIS COURSE**

 READING – Reading at the college level means the ability to analyze and interpret a variety of printed materials – books, articles and documents. A core curriculum should offer student the opportunity to master both general methods of analyzing printed materials and specific methods for analyzing the subject matter of individual disciplines.

 WRITING – Competency in writing is the ability to produce clear, correct, and coherent prose adapted to purpose, occasion, and audience. Although correct grammar, spelling, and punctuation are each a sine qua non in any composition, they do not automatically ensure that the composition itself makes sense or that the writer has much of anything to say. Students need to be familiar with the writing process including how to discover a topic and how to develop and organize it, how to phrase it effectively for their audience. These abilities can be acquired only through practice and reflection.

 SPEAKING – Competence in speaking is the ability to communicate orally in clear, coherent, and persuasive language appropriate to purpose, occasion, and audience. Developing this competency includes acquiring poise and developing control of the language through experience in making presentations to small groups, to large groups, and through the media.

 LISTENING – Listening at the college level means the ability to analyze and interpret various forms of spoken communication.

 CRITICAL THINKING – Critical thinking embraces methods for applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies. Problem solving is one of the applications of critical thinking, used to address an identified task.

 COMPUTER LITERACY – Computer literacy at the college level means the ability to use computer-based technology in communicating, solving problems, and acquiring information. Core-educated students should have an understanding of the limits, problems, and possibilities associated with the use of technology, and should have the tools necessary to evaluate and learn new technologies as they become available.

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| **Last day to Withdraw** | For the Fall 2016 semester, the last day to withdraw from a course with a “W” is **April 6, 2017.** |
| **Student Rights & Responsibilities** | NCTC Board policy *FLB (Local) Student Rights and Responsibilities* states that each student shall be charged with notice and knowledge of the contents and provisions of the rules and regulations concerning student conduct. These rules and regulations are published in the Student Handbook published in conjunction with the College Catalog. All students shall obey the law, show respect for properly constituted authority, and observe correct standards of conduct. |
| **Cell phone use** | Cell phone use in class will not be tolerated and must be silenced and preferably turned off during class time. Your full attention is needed in class for your success; therefore, those that use electronic devices for non-class activities may be asked to leave at the discretion of the instructor. |
| **Scholastic Integrity** | 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. If this occurs the student will be given a zero. Please take care of restroom needs PRIOR to the start of any exam; you will not be allowed to leave the room during the exam for any reason unless you have completed and turned in your exam. |
| **NCTC Tobacco-free policy** | NCTC restricts the use of all tobacco products including 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**. |

**STUDENT SUPPORT SERVICES**

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| --- | --- |
| **ACCESS**  **(Disability Support)**  **Disability**  **Accommodations** | North Central Texas College is committed to both the spirit and letter of federal equal opportunity legislation, including the Americans with Disabilities Act (ADA) and section 504 of the Rehabilitation Act of 1973.  NCTC is required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability.  It is the student’s responsibility to provide disability documentation to the ACCESS Office which authorizes accommodations for students with disabilities.  The [ACCESS Office](http://www.nctc.edu/Student_Services/Access/ACCESSProgram.htm) is located in room 170 on the Corinth Campus and room 110 of the Administration (100) Building on the Gainesville Campus.  Students can also call 940-668-7731 ext. 4321 or 940-498-6207.    The Office for Students with Disabilities (OSD) provides accommodations for students who have a documented disability. A disability is anything that can interfere with learning, such as a learning disability, psychological challenge, physical illness or injury. Accommodations may include extra time on tests, tests in a distraction reduced environment, volunteer note taker in class, etc. On the Corinth Campus go to room 170 or call 940-498-6207. On the Gainesville Campus go to room 110 in the Administration (100) Building or call 940-668-7731 ext. 4321. North Central Texas College is 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). |
| **Student Success Center** | The Student Success Center is designed to help all students at NCTC develop tools to achieve their academic goals. The center links students to FREE tutoring, including a Writing Center, a Math Lab, and free online tutoring in the evening. The program helps students acclimate to college by providing students free interactive workshops about Time Management, Study Skills, Test Anxiety, and much more. For more information, please visit your nearest [Student Success Center](http://www.nctc.edu/Student_Services/Access/AcademicandStudentSupportServices.htm). |
|  | **Early Alert and NCTC CARES**  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](mailto: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. |
| **Financial Aid, Scholarships, and Veterans Services** | The Financial Aid Office is responsible for administering a variety of programs for students who need assistance in financing their education. The first step for financial aid is to complete a FAFSA. For more information, please visit your nearest [Financial Aid Office](http://www.nctc.edu/Student_Services/FinAid/finaid.html). Check out The College Blue Book: Scholarships and Fellowships. |

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week |  | Week of | Lecture | Reading | Homework | Lab |
| 1 | T/R | 17-Jan | Syllabus; Ecological Concepts | Ch. 1 |  | Scientific Method |
| 2 | T/R | 24-Jan | Ch. 1&2 | Ch. 2 |  | Web Evaluation |
| 3 | T/R | 31-Jan | Ch. 3 Evolution, Species Interactions, Communities | Ch. 3 |  | Nutrition |
| 4 | T/R | 7-Feb | Ch. 5 Biomes & Biodiversity | Ch. 5 |  | Food Webs |
| 5 | T/R | 14-Feb | Ch. 6 Environmental Conservation  Ch. 4 Human Populations | Ch. 6; Ch. 16 pg. 382 |  | Sampling |
| 6 | T | 21-Feb | Ch. 6 (cont.) Review |  | HW 1 Due | Biodiversity; Invasive Species |
|  | **R** | **23-Feb** | **Exam 1** |  |  |  |
| 7 | T/R | 27-Feb | Ch. 7 Food & Agriculture | Ch. 4; Ch.7 |  | Cemetery Exercise |
| 8 | T/R | 7-Mar | Ch. 7 Food & Agriculture (cont.) |  |  | Marine Fisheries; Soil |
| 9 | T/R | 14-Mar | **SPRING BREAK** |  |  |  |
| 10 | T/R | 21-Mar | Ch. 14 Solid & Hazardous Waste  Ch. 8 Environmental Health & Toxicology | Ch. 14; Ch. 16 pgs. 382-3; Ch. 8 |  | Consumption |
| 11 | T | 28-Mar | Ch. 12 Geology & Earth Resources | Ch. 12 | HW 2 Due | Review |
|  | **R** | **30-Mar** | **Exam 2** |  |  |  |
| 12 | T/R | 4-Apr | Ch. 11 Water | Ch. 11; Ch. 16 pg. 382 |  | Field Trip  Water Quality |
| 13 | T/R | 11-Apr | Ch. 9 Climate | Ch. 9 |  | Climate Change |
| 14 | T/R | 18-Apr | Ch. 10 Air Pollution  Ch. 13 Energy | Ch. 10; Ch. 16 pgs. 381-2; Ch. 13 |  | Air Quality |
| 15 | T/R | 25-Apr | Ch. 13 Energy (cont.)  Ch. 15 Economics and Urbanization & Review | Ch. 15; Ch. 16 pgs. 383-399 | HW 3 Due | Energy & Urbanization |
| 16 | **T** | **2-May** | **Exam 3** |  |  |  |
|  | R | 4-May | Position Paper Presentations |  |  |  |
| 17 | T/R |  | **COMPREHENSIVE FINAL EXAM** |  | FINALS | FINALS |