CORE CURRICULUM COMPONENT APPLICATION
Texarkana College

Part I: Course Information

Course Type
☒ Existing/Restructured
☐ New Course

Course Prefix & Number: **BIOL 2306**

Texas Common Course Number (TCCN): **BIOL 2306**

Course Title: **Environmental Biology**

Course Catalog Description

Environmental Biology (lecture) (3,3,0). An interdisciplinary introduction to basic principles of environmental science with emphasis on the relationship of humans and their environment. Topics covered include basic ecological concepts, human population dynamics, climate, global warming, ozone depletion, hazardous waste, food, land, air, and water resources, biodiversity, and achieving a sustainable earth society. Recommended co-requisite: BIOL 2106

Course Prerequisites: Recommended co-requisite BIOL 2106

Available Online?
☐ Yes
☒ No

Part II: THECB Course Objectives

Learning Outcomes

Upon successful completion of this course, students will:
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.

See Attached Syllabus

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Part III: THECB Skill Objectives
1. Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. Communication Skills: to include effective development, interpretation and expression of ideas through written, oral and visual communication
3. Empirical and Quantitative Skills: to include applications of scientific and mathematical concepts.
4. Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Part IV: Course Student Learning Outcomes (SLO)
Upon successful completion of this course, students will:
Learning Outcomes
Upon successful completion of this course, students will:
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.

See Attached Syllabus

Skill Objective:	**Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
THECB Course Objective	SLO # 7. Describe environmental hazards and risks and the social and economic ramifications.
Course Student Learning Outcome	SLO # 7. Describe environmental hazards and risks and the social and economic ramifications.

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General Learning Activities	Students will participate in various field trips to local entities such as wastewater treatment plants, the New Boston landfill, local paper mills, a local superfund site—Carver Terrace, etc. Each student will submit a written report for each trip detailing insights gained from the trips, and summarizing major functions including environmental risks and benefits of each entity. (See attached field trip list, write up assignment
Assessment ***Must Include Assignment & Rubric***	Exam questions. See attached rubric.

Skill Objective:	**Communication Skills:** to include effective written, oral, and visual communication
THECB Course Objective	SLO # 5. Quantify and analyze the impact of lifestyle on the environment.
Course Student Learning Outcome	SLO # 5. Quantify and analyze the impact of lifestyle on the environment.
General Learning Activities	Students will develop a campus and city-wide recycling program creating a report detailing the steps involved in completing this task, developing a budget, drawing a map of the area indicating position of bins, etc., sample job postings for workers, sample memos to employees, a list of applicable state laws pertinent to the recycling program, and suggested training. Students will present their programs to the class. (see attached Recycling Program assignment)
Assessment ***Must Include Assignment & Rubric***	Exam questions. See attached rubric

Skill Objective:	**Empirical and Quantitative Skills:** to include applications of scientific and mathematical concepts.
THECB Course Objective	SLO # 8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.
Course Student Learning Outcome	SLO # 8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.

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General Learning Activities	Students will participate in the Texas Stream Team Initiative. In this program, students attend a workshop to gain state certification in water testing, then in groups of 2 or 3 participate in monthly monitoring of a local body of water. Stream Team members test for temperature, conductivity, pH, and dissolved oxygen, completing a Texas Stream Team Environmental Monitoring Form. They compare current readings with past, and look for trends. (see attached monitor form)
Assessment ***Must Include Assignment & Rubric***	Exam questions. See attached rubric

Skill Objective:	**Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
THECB Course Objective	SLO # 8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.
Course Student Learning Outcome	SLO # 8. Describe ecological and statistical techniques and approaches used in the study of environmental biology.
General Learning Activities	Students will participate in the Texas Stream Team Initiative. In this program, students attend a workshop to gain state certification in water testing, then in groups of 2 or 3 participate in monthly monitoring of a local body of water. Stream Team members test for temperature, conductivity, pH, and dissolved oxygen, completing a Texas Stream Team Environmental Monitoring Form. They compare current readings with past, and look for trends. (see attached monitor form)
Assessment ***Must Include Assignment & Rubric***	Exam questions. See attached rubric