

BIO 120: Human Ecology
COURSE SYLLABUS

COURSE DESCRIPTION

A study of the interrelationships among humans, other organisms, and the environment, including principles of energy and matter, resource use, biogeochemical cycling, trophic structures, sustainability and environmental impacts by humans

Course Credits: 3

Contact Hours: 45

Course Duration: Calendar start and finish dates are determined by the student's **Enrollment Notification**.

This course contains 3 Modules:

Module Name	Credit Hours
Module 1 BIO 1201: Human Ecology Principles	1
Module 2 BIO 1202: Population Dynamics	1
Module 3 BIO 1203: Pollution Impacts	1
Total Credit Hours:	3

Module 1 BIO 1201: Human Ecology Principles- In this module, students will be introduced to the basic scientific principles, biogeochemical cycles, biodiversity, natural selection, sustainability, and conservation.

Module 2 BIO 1202: Population Dynamics- In this module, students will be introduced to population dynamics and interrelationships among organisms in food webs and human impacts on the environment.

Module 3 BIO 1203: Pollution Impacts- In this module, students will learn more regarding human impacts on ecosystems. Topics covered include agriculture; toxic risks; air, waste, and water pollution; and waste management.

Prerequisites/Co-requisites

None.

Course Module Schedule/Calendar

Modularized, competency-based courses and modules with a facilitated, flexible learning pace enable you to determine your rate of progress through the course, in your own way, when and where you want to work on it.

Sample/Suggested Course Schedule/Calendar

Weeks 1-4: Complete Module 1

Weeks 5-8: Complete Module 2

Weeks 9-15: Complete Module 3

Week 16: Review and take Final Post-Test

This is only a suggested calendar for the course to give you a typical timeline for completion; students may progress through the modules at their own rate to complete the course within the start and end dates shown on the Enrollment Notification.

Instructor Information

To access and view instructor contact information, select **Meet Your Instructor** from the menu on the left when you access the course in Blackboard.

Course Communication

If you need to schedule a phone conference or an in-person visit with your instructor, click the Email Your Instructor link in the menu option to email your instructor (select all instructors) about making an appointment. List your course and section in the subject line of your email and adhere to netiquette rules while communicating with your instructor. Your instructor is here to guide you through the content and answer any questions you may have. Responses are generally given within 24-48 hours during the business week. The instructor's profile provides contact and other information. If you have questions about the course, please do not hesitate to contact the instructor. If you are having technical problems with the course, be sure to contact the Blackboard Help desk, click Help and Support on the menu or click the Help Tab at the top of the Blackboard page.

KCTCS Email information: <http://kctcs.edu/en/email.aspx>

You are required to use your KCTCS email account when communicating with the instructor and other students in this course.

GENERAL EDUCATION COMPETENCIES

Students should prepare for twenty-first century challenges by gaining:

A. Knowledge of human cultures and the physical and natural worlds through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts.

B. Intellectual and practical skills, including:

- inquiry and analysis
- critical and creative thinking
- written and oral communication
- quantitative literacy
- information literacy
- teamwork and problem solving

C. Personal and social responsibility, including:

- civic knowledge and engagement (local and global)
- intercultural knowledge and competence
- ethical reasoning and action
- foundations and skills for lifelong learning

D. Integrative and applied learning, including synthesis and advanced accomplishment across general and specialized skills.

COURSE INFORMATION

Upon completion of this course you will be able to:

1. Analyze information using the Scientific Method.
2. Demonstrate critical thinking about concepts of ecology and integrate that knowledge into practical application.
3. Describe interrelationships among producers, consumers and decomposers and their environment.
4. Describe human use and impacts on the environment.
5. Describe environmental and resource issues and possible resolutions.

Learner Competencies and Outcomes for Module 1 BIO 1201: Human Ecology Principles

Upon completion of this course module, the student will be able to:

Unit 1 Identify environmental problems, their causes and sustainability;

Unit 2 Apply the scientific method;

Evaluate the changes that matter, energy, and systems can undergo;

Unit 3 Demonstrate comprehension of ecosystems, what they are and how they work; and

Unit 4 Describe the importance and occurrence of biodiversity and evolution.

Course Outline for Module1 BIO 1201: Human Ecology Principles

Unit 1 Environmental Causes, Their Problems, and Sustainability

- Explain the principles of sustainability.
- Understand how ecological footprints are affecting the earth.
- Identify why we have environmental problems.
- Define an environmentally sustainable society.

Unit 2 Science, Matter, Energy, and Systems

- Know the process scientist undergo.
- Explain what matter and energy are and what changes they can undergo.
- Identify the responses systems provide to change.

Unit 3 Ecosystems: What they are and how do they work?

- Discuss how the earth's life support systems work and the major components of an ecosystem.
- Distinguish between what happens to energy and matter in an ecosystem.
- Give examples of how scientists approach the study of ecosystems.

Unit 4 Biodiversity and Evolution

- Describe what biodiversity is, why it is important, and what factors affect it.
- Understand the roles that species can play in their ecosystem and provide examples.
- Know how the earth life forms change over time.

Learner Competencies and Outcomes for Module 2 BIO 1202: Population Dynamics

Unit 1 Describe species interactions, ecological succession and population controls;

Unit 2 Analyze human populations, their structure, and impact of urbanization;

Unit 3 Apply knowledge of climate, biomes, and biodiversity; and

Unit 4 Identify sustaining biodiversity by saving species, ecosystems, and ecosystem services.

Course Outline for Module 2 BIO 1202: Population Dynamics

Unit 1 Species Interactions, Ecological Succession, and Population Control

- Identify how species interact in their ecosystem.
- Understand and provide examples of limitations on population growth and models of population growth rates.
- Explain how communities and ecosystems respond to changing environmental conditions.

Unit 2 Human Population and Urbanization

- Understand how many people the earth is capable of supporting and what or why limits are imposed.
- Describe and provide examples of the factors that influence human population size and how age structures affect growth and make future prediction of growth from population age structures.
- Identify ways to slow population growth.
- Discuss the major urban resource and environmental problem and the effects of transportation on these problems.
- Explain how cities can become more sustainable and livable.

Unit 3 Climate and Biodiversity

- Describe the factors that influence the climate.
- Understand the difference between climate and weather.
- Identify the major types of terrestrial, marine, and freshwater ecosystems and how humans are affecting them.

Unit 4 Sustaining Biodiversity

- Understand the role humans play in the loss of species and ecosystems services and why we should try to sustain them.
- Explain how humans accelerate species extinction and degradation of ecosystem services and how we can sustain them.
- Identify the major threats to ecosystems.
- Provide examples of how we can manage and sustain forests, grasslands, parks and nature reserves, and aquatic biodiversity.
- Explain the ecosystem approach to sustaining ecosystems.

Learner Competencies and Outcomes for Module 3 BIO 1203: Pollution Impacts

Unit 1 Evaluate food production and environmental impacts;

Unit 2 Apply knowledge of solid and hazardous waste management;

Demonstrate understanding of our water resources and water pollution;

Unit 3 Analyze air pollution sources, climate change and impacts, and ozone depletion;

Unit 4 Apply knowledge of energy resources, uses, and possible resolutions; and

Evaluate environmental health hazards, human health, and risk assessment.

Course Outline for Module 3 BIO 1203: Pollution Impacts

Unit 1 Food Production and the Environment

- Recognize the issues surrounding food security and how food security can be improved..
- Explain the ways food is produced and the environmental problems that arise from industrial food production and how we can produce food more sustainably.
- Know the different approaches to pest management and how we can make it a more sustainable practice.

Unit 2 Solid and Hazardous Waste and Water Resources and Pollution

- Explain the problems related to solid and hazardous wastes, how are we dealing with wastes, the advantages and disadvantages to burning versus burying solid waste, and how we should be dealing with waste.
- Provide reasons why refusing, reducing, reusing and recycling are important and why it is not done more.
- Identify the ways we can make the transition to a more sustainable low-waste economy.
- Understand the available water resources, how freshwater supplies can be increased and use the existing freshwater supplies more sustainably.
- Explain the sources of and how we can deal with water pollution.

Unit 3 Air Pollution, Climate Change, and Ozone Depletion

- Explain the nature of the atmosphere and atmospheric characteristics.
- Identify the major air pollution problems and how we can deal with them.
- Understand the ways that the climate is changing and how this might change earth's future.
- Provide ways that we can slow the projected climate change.
- Understand how the ozone layer has been depleted in the stratosphere and what we can do about it.

Unit 4 Energy Resources and Environmental Health Hazards and Human Health

- Explain net energy and energy efficiency; identify the importance in identifying the appropriate energy resource for an activity.
- Identify the advantages and disadvantages of fossil fuels, nuclear power, and renewable energy resources.
- Identify the health hazards that humans face and our routes of exposure.

- Know types of biological and chemical hazards humans encounter and how we can evaluate, perceive, and avoid the worst of them.

GRADING CRITERIA

This course contains 3 modules. The contents and grading for each module are listed below. The grades for each module will be averaged based on grade received and the credit hour to determine the final score.

Course Components, Assignments, Quizzes

This course will be evaluated on the homework assignments, chapter tests and the final Post-Test. You will take a Pre-Test to evaluate your knowledge of the course materials. Homework assignments and quizzes will make up 40% of the grade and the module Post-Test will make up 60% of the module grade.

Assignments: There are one to two graded assignments per unit. The assignments allow for up to three attempts per question set prior to submission. The average score across all attempts made for each question set will be added to the grade book.

Students must select "Grade it Now" within the question set in order to view the grade and the correct/incorrect responses. You will have the option to make up to three attempts per question set. You are not required to attempt the question sets three times. The average grade will continuously calculate for all items in which "Grade It Now" has been selected.

When you are finished with the assignment, by either making all three attempts under each question set or when you are satisfied with your grade, click on the **"I'm done, grade assignment now"** button.

Quizzes: There is one quiz per unit. Time allowed : 45 minutes (Estimated time: 35 minutes). The questions will not be the same or in the same order each time you take this test. The next unit within the module will become available upon the first quiz attempt. Students are encouraged to pass each Unit Quiz with 70% or more before moving to the next unit within the module. You may take this test up to three times to acquire a score of 70% or greater. The quiz is timed, must be taken in one sitting, and will auto-submit. You will have a one-time view of the questions after you take the quiz. The highest score will be the grade recorded in the grade center for this quiz.

Module Pre-Test

Each module requires the completion of a Module Pre-Test. This will allow you to see what areas you are strong in and what areas need additional work. It is expected that you will have little or no knowledge of the questions being asked (and that is OK).

- It is timed (75 minutes) and you only have one attempt to complete the Pre-Test. The Pre-Test will auto-submit and auto-grade at the end of the allowed time.
- Be sure you complete the Pre-Test before submitting or closing the test window and that you have set aside enough time to complete the test prior to starting it.
- Once you complete the Pre-Test, the module content will become available to you.

Additionally, in **each module** you will have the opportunity to demonstrate Credit for Prior Learning through the module Pre-Test.

If you complete the Module Pre-Test with the determined Credit for Prior Learning score, you will have the option of proceeding to the Post-Test for the module. In order to achieve Credit for Prior Learning you must

score 80% on the module Pre-Test and 90% on the Credit for Prior Learning. If you do not achieve the required scores, you will be directed to the first learning activity and begin working through the module content.

All Pre-Tests ARE NOT calculated in the overall grade for each module or for the overall grade of the course.

Credit for Prior Learning

KCTCS Online open-entry course modules are based on the goal that students will demonstrate mastery of content. Through KCTCS Online, students have the opportunity to receive credit for prior learning. To receive this credit, students must demonstrate mastery of the course module competencies through the following steps:

- Take the Pre-Test. The Pre-Test may only be taken once. If the score on the Pre-Test meets a level of pre-determined competency, the student will have the option to immediately take the Post-Test.
- If the student demonstrates mastery of competencies on the Post-Test, a final grade will be awarded and the student will receive credit for the course. The final grade is based upon the actual score earned on the Post-Test along with any other assignments affecting the final course grade.
- If the student does not demonstrate mastery of competencies on the Post-Test, the student must remain enrolled in the course module until successfully completing all of the course module requirements and the Post-Test, or until the end date of the course module- whichever comes first. Upon the end date of the course module, the student will receive a final grade earned based on completed assignments and Post-Test scores.

Module Post-Test

Students are required to score 70% or greater of the total points. If the score is below 70% of the total points on the Module Post-Test, the student will be directed to restudy the module materials in order to master subject topics, prior to reattempting the Post-Test. Students will have three tries to successfully pass the Module Post-Test; however, the last score will be used. The Final Post-Test of each module is worth 60% of your overall grade for the module. In order to achieve credit for prior learning, students must score a 80% on the Pre-Test and 90% on the Credit for Prior Learning.

Summary of Tasks

Course Item	Estimated Time (minutes)	Points Possible
Syllabus Quiz	20	
Module 1 BIO 1201 Human Ecology Principles		
BIO 1201 Pre-Test	75	
Unit 1 Assignment	60	40
Unit 1 Quiz	45	30
Unit 2 Assignment	60	49
Unit 2 Quiz	45	30
Unit 3 Assignment	60	60
Unit 3 Quiz	45	30
Unit 4 Assignment	60	26
Unit 4 Quiz	45	30

BIO 1201 Post-Test	75	50
Module 2 BIO 1202 Population Dynamics		
BIO 1202 Pre-Test	75	
Unit 1 Assignment	60	38
Unit 1 Quiz	45	30
Unit 2 Assignment	60	47
Unit 2 Quiz	45	30
Unit 3 Assignment	60	55
Unit 3 Quiz	45	30
Unit 4 Assignment 1	60	41
Unit 4 Assignment 2	60	40
Unit 4 Quiz	45	30
BIO 1202 Post-Test	75	50
Module 3 BIO 1203 Pollution Impacts		
BIO 1203 Pre-Test	75	
Unit 1 Assignment	60	59
Unit 1 Quiz	45	30
Unit 2 Assignment 1	60	72
Unit 2 Assignment 2	60	46
Unit 2 Quiz	45	30
Unit 3 Assignment	60	52
Unit 3 Quiz	45	30
Unit 4 Assignment 1	60	60
Unit 4 Assignment 2	60	35
Unit 4 Quiz	45	30
BIO 1203 Post-Test	75	50

All assignments, projects, and assessments will be graded within 24-48 hours of submission. See [Final Grading Calculation](#) for how the score received for this module will calculate into the final grade for the full course.

Final Grading Calculation

This course is presented as a full (or parent) course with chunks of content called modules (since these modules can be taken separately). You will receive a score for each module. This score based on the credit hour (or weight) of each module will determine your final grade for the full (or parent) course.

The percentage score received for each module will be multiplied by the credit hours of the module to give a total module percentage. Each of the total module percent scores will be added together then divided by the total credit hour of the full (or parent) course to obtain a final percentage score for the course. Based on where the final percentage score falls on the grade scale will determine the final letter grade to be posted for the student.

Module	Percentage Score Received for each Module	Credit Hours	Total Percentag
BIO 1201 Human Ecology Principles		X 1.0	
BIO 1202 Population Dynamics		X 1.0	+
BIO 1203 Pollution Impacts		X 1.0	+
	Total Credit Hours>	3	
	Final Percentage Score>	=	

Grading Scale

The following grading scale will be used to assess your overall average for all course-related assignments and tests.

A - 90 – 100%

B - 80 – 89.9%

C - 70 – 79.9%

D - 60 - 69.9%

E - 59.9% or below

POLICIES

Plagiarism Statement

Plagiarism and cheating are serious academic offenses. The KCTCS regulations pertaining to plagiarism and cheating can be found in Sections 2.3.1.1, 2.3.1.2, and 2.3.1.3 of the KCTCS Code of Student Conduct. Penalties for violation of these policies can be found in Section 2.3.2.1 and 2.3.2.2.

Disability Statement

The Kentucky Community and Technical College System would like to help students with disabilities achieve their highest potential in academic studies. In order to receive accommodations on assignments or examinations, proper documentation must first be provided to the Office of Disability Services at your home campus. You must then self-identify and conference with the Director of Disability Support Services or Manager of Disability Services to begin receiving accommodations in the course/module. For more information, contact the office of Disability Services.

Financial Aid

Financial aid for the KCTCS Online program functions differently than financial aid for courses on campus or online through Distance Learning. Please contact the KCTCS Online Student Services Help Desk for more information.

Dropping a Course

The student can receive an A, B, C, D, E, or W in this module. For information about how dropping this

course will affect your grade and future financial aid, please view your academic calendar in Student Self-Service or contact the KCTCS Online Student Services Help Desk for more information.

Help and Support

Blackboard Support Center

The Blackboard Support Center can help provide support via Frequently Asked Questions, email, chat, and phone regarding Blackboard 24 hours a day, 7 days a week.

Student Services

The KCTCS Online Student Services Help Desk provides Frequently Asked Questions, email, chat, and phone service 24 hours a day, 7 days a week. Student Services staff can help you with any question you have about the application process, financial aid, registering for classes, tuition payments, and other student services.

Course-Specific Questions

If you have a specific question about the course or the content, please contact your instructor as soon as possible. Your instructor's contact information is under the "Meet Your Instructor" link on the course menu. Please allow 24-48 hours for your instructor to respond to your questions.

Starfish

Starfish is a student support tool that can help you succeed in your course. Your instructor can raise flags if there's a concern about your progress, give you kudos for good performance, or make to-do items for you that will help you succeed. You can also use Starfish to schedule appointments with your instructor or your Virtual Student Success Coach. Be sure to click on "Starfish" from the navigation menu in Blackboard to learn more and to create your student profile

INSTRUCTIONAL MATERIALS

Required eResources

- **Environmental Science** , 15th Edition © 2014, G. Tyler Miller and Scott E. Spoolman
- Power Point Presentations, Glossary Terms, Videos and more

(These resources are available in your Blackboard course)

Software Requirements

Students will need to make sure appropriate software and plug-ins are installed on your computer. Be sure to review, and if necessary, install appropriate software and plug-ins listed in the software section of the **Start Here** area in the Blackboard module shell.