WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: PA Habitat and Land Ecology
Course Number: 00370
Course Prerequisites: None

Course Description: This course focuses on Pennsylvania habitats, their biotic and abiotic parts, identification, taxonomy, anatomy, physiology, growth and reproduction. The basic principles of forest habitats, habitat management, and environmental protection are discussed. Complexities of land ecology, soil types and characteristics, and landform evaluations are also studied including conservation perspectives. Relevant lab activities will be incorporated throughout, utilizing scientific inquiry and appropriate technology. Classroom studies are combined with field exercise.

Suggested Grade Level: Grades 9-12
Length of Course: One Semester
Units of Credit: .5
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG 32 Biology; CSPG 43 Environmental Education; CSPG 46 General Science 7-12
To find the CSPG information, go to CSPG
Certification verified by the WCSD Human Resources Department: ☐Yes ☐No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic
Mark Types: Check all that apply.
☒F – Final Average ☒MP – Marking Period ☒EXM – Final Exam

GPA Type: ☐ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☒ NHS-National Honor Society
☒ UGPA-Non-Weighted Grade Point Average ☒ GPA-Weighted Grade Point Average

State Course Code: 03003
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title:	n/a
Publisher:	n/a
ISBN #:	n/a
Copyright Date:	n/a
WCSD Board Approval Date:	n/a

Supplemental Materials: Envirothon website content: www.envirothonpa.org/station/forestry/ and www.envirothonpa.org/station/soils-and-land-use/ ;PA DCNR content

Curriculum Document

WCSD Board Approval:

Date Finalized:	4/2/2025
Date Approved:	2/5/2025
Implementation Year:	2025-2026

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS

Marking Period 1

- Trees
- Basic Soil Ecology Knowledge
- Forest Ecology
- Understanding Maps, Surveys, and Landforms

Marking Period 2

- Forestry Resources, Management, and Protection
- Community Forestry
- Ecological Land Use
- Decision Making and Protections of Soils and Land Ecological Systems

Marking Period 3

- Trees
- Basic Soil Ecology Knowledge
- Forest Ecology
- Understanding Maps, Surveys, and Landforms

Marking Period 4

- Forestry Resources, Management, and Protection
- Community Forestry
- Ecological Land Use
- Decision Making and Protections of Soils and Land Ecological Systems

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Explain the characteristics of life common to all organisms.	SCT.10.3.1.10.A1	MP1, MP3
Investigate the spatial relationships of organisms' anatomical features using specimens, models, or computer programs.	SCT.10.3.1.10.A8	MP1, MP3
Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	SCI.3.1.9-12.E	MP1, MP3
Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.	SCI.3.1.9-12.F	MP1, MP3
Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.	SCI.3.1.9-12.G	MP1, MP3
Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	SCI.3.1.9-12.H	MP2, MP4
Use mathematical and/or computational representations to support explanations of factors that affect carrying capacities of ecosystems at different scales.	SCI.3.1.9-12.I	MP1, MP2 MP3, MP4
Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	SCI.3.1.9-12.J	MP1, MP3
Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.	SCI.3.1.9-12.L	MP2, MP4
Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	SCI.3.1.9-12.M	MP1, MP2 MP3, MP4
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	SCI.3.1.9-12.N	MP1, MP2 MP3, MP4
Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.	SCI.3.1.9-12.O	MP2, MP4
Create or revise a simulation to test a solution to mitigate the adverse impacts of human activity on biodiversity.	SCI.3.1.9-12.V	MP2, MP4
Evaluate the evidence supporting claims that changes in environmental conditions may result in (1)increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.	SCI.3.1.9-12.X	MP1, MP2 MP3, MP4
Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.	SCI.3.4.9-12.A	MP1, MP2 MP3, MP4
Apply research and analytical skills to evaluate the condition s and motivations that lead to conflict, cooperation, and change among individuals, groups, and nations.	SCI.3.4.9-12.B	MP2, MP4

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Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.	SCI.3.4.9-12.C	MP1, MP2 MP3, MP4
Apply research and analytical skills to systematically investigate the environmental issues ranging from local issues to those that are regional of global in scope.	SCI.3.4.9-12.D	MP1, MP3
Evaluate and communicate the effect of integrated pest management practices on indoor and out door environments.	SCI.3.4.9-12.F	MP2, MP4
Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources.	SCI.3.4.9-12.G	MP2, MP4
Design and evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.	SCI.3.1.9-12.H	MP2, MP4
Analyze and interpret data on a regional environmental condition and its implications on environmental justice and social equity.	SCI.3.1.9-12.I	MP2, MP4
Explain the consequences of interrupting natural cycles.	ECL.10.4.1.10.B	MP1, MP3
Evaluate the efficiency of energy flow within a food web. Describe how energy is converted from one form to another as it moves through a food web (photosynthetic, geothermal).	ECL.10.4.1.10.C	MP1, MP3
Analyze the relationship between habitat changes to plant and animal population fluctuations.	ECL.10.4.1.10.Da	MP1, MP3
Describe how topography influences the flow of water in a watershed.	ECL.10.4.2.10.A.a	MP1, MP3
Describe how vegetation affects water runoff.	ECL.10.4.2.10.A.b	MP1, MP3
Investigate and analyze the effects of land use on the quality of water in a watershed.	ECL.10.4.2.10.A.c	MP1, MP3
Examine how human interactions impact wetlands and their surrounding environments.	ECL.10.4.2.10.B	MP1, MP3
Analyze how agricultural sciences and technologies strive to increase efficiency while balancing the needs of society with the conservation of our natural resources.	ECL.10.4.4.10.C	MP1, MP3
Evaluate the use of technologies to increase plant and animal productivity.	ECL.10.4.4.10.D	MP1, MP3
Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.	LA.CC.3.5.9-10.A	MP1, MP2 MP3, MP4
Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept/ provide an accurate summary of the text.	LA.CC.3.5.9-10.B	MP2, MP4
Follow precisely a complex multistep procedure carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	LA.CC.3.5.9-10.C	MP1, MP3
Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to 9-10 texts and topics.	LA.CC.3.5.9-10.D	MP1, MP2 MP3, MP4

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Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table of chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	LA.CC.3.5.9-10.G	MP1, MP2 MP3, MP4
Asses the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.	LA.CC.3.5.9-10.H	MP1, MP2 MP3, MP4
Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.	LA.CC.3.5.9-10.I	MP2, MP4
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	LA.CC.3.6.9-10.B	MP1, MP2 MP3, MP4
Conduct short as well as more sustained research projects to answer a question (including a self-generate question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	LA.CC.3.6.9-10.G	MP2, MP4
Draw evidence from informational texts to support analysis, reflection, and research.	LA.CC.3.6.9-10.H	MP1, MP2 MP3, MP4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include: Bell ringers, exit tickets, notice and wonderings, progress checks, quizzes, lab assignments, teacher questioning, class discussions, peer assessments, model trackers

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include: Lab reports, CER responses, chapter tests, assessments, culminating tasks, projects.