WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Aquatic Ecology
Course Number: 00365
Course Prerequisites: None

Course Description: This course will study the complex interactions within the aquatic ecosystem. An emphasis will be placed on the identification and classification of Pennsylvania aquatic species. The basic principles of Aquatic resource management and protection as well as aquatic resource are also discussed. Students will develop skills in making informed decisions and taking constructive actions. Relevant lab activities will be incorporated throughout, utilizing scientific inquiry and appropriate technology.

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: Pennsylvania Envirothon; Allegheny College Creek Connections; PA Fish and Boat Commission; U.S. Environmental Protection Agency; FishMap

Curriculum Document

WCSD Board Approval:

Date Finalized:	4/2/2025
Date Approved:	5/5/25
Implementation Year:	2024-2025

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

- Abiotic Factors
- Biotic Factors

Marking Period 2

- Community
- Aquatic Resource Issues
- Aquatic Resource Management and Protection

Marking Period 3

- Abiotic Factors
- Biotic Factors

Marking Period 4

- Community
- Aquatic Resource Issues
- Aquatic Resource Management and Protection

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Explain the characteristics common to all organisms.	SCI.9-12.BIO.A.1.1	MP1, MP2 MP3, MP4
Describe relationships between structure and function at biological levels or organization.	SCI.9-12.BIO.A.1.2	MP1, MP2 MP3, MP4
Describe how the unique properties of water support life on Earth.	SCI.9-12.BIO.A.2.1	MP1, MP2 MP3, MP4
Describe the levels of ecological organization (i.e., organism, population, community, ecosystem, biome, and biosphere).	SCI.9-12.BIO.B.4.1.1	MP1, MP2 MP3, MP4
Describe the characteristic biotic and abiotic components of aquatic and terrestrial ecosystems.	SCI.9-12.B.4.1.2	MP1, MP2 MP3, MP4
Describe interactions and relationships in ecosystems.	SCI.9-12.BIO.4.2	MP1, MP2 MP3, MP4
Describe how energy flows through an ecosystem (e.g., food chains, food webs, energy pyramids).	SCI.9-12.BIO.4.2.1	MP1, MP2 MP3, MP4
Describe how matter recycles through an ecosystem (i.e., water cycle, carbon cycle, oxygen cycle, and nitrogen cycle).	SCI.9-12.BIO.B.4.2.3	MP1, MP2 MP3, MP4
Describe how ecosystems change in response to natural and human disturbances (e.g., climate changes, introduction of nonnative species, pollution, fires).	SCI.9-12.BIO.B.4.2.4	MP2, MP4
Describe the effects of limiting factors on population dynamics and potential species extinction.	SCI.9-12.BIO.B.4.2.5	MP2, MP4
Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.	SCI.3.4.9-12.A	MP2, MP4
Apply research and analytical skills to evaluate the conditions and motivations that lead to conflict, cooperation, and change among individuals, groups, and nations.	SCI.3.4.9-12.B	MP2, MP4
Analyze and interpret how issues, trends, technologies, and policies impact watersheds and water resources.	SCI.3.4.9-12.C	MP1, MP2 MP3, MP4
Apply research and analytical skills to systematically investigate environmental issues ranging from local issues to those that are regional or global in scope.	SCI.3.4.9-12.D	MP1, MP3
Plan and conduct an investigation utilizing environmental data about a local environmental issue.	SCI.3.4.9-12.E	MP1, MP3
Evaluate and communicate the effect of integrated pest management practices on indoor and outdoor environments.	SCI.3.4.9-12.F	MP1, MP2 MP3, MP4
Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources.	SCI.3.4.9-12.G	MP1, MP3
Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps of inconsistencies in the account.	LA.CC.3.5.11-12.A	MP1, MP2 MP3, MP4

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	LA.CC.3.5.11-12.C	MP1, MP3
Integrate and evaluate multiple resources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.	LA.CC.3.5.11-12.G	MP1, MP2 MP3, MP4
Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating of challenging conclusions with other sources of information.	LA.CC.3.5.11-12.H	MP1, MP3
Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	LA.CC.3.5.11-12.I	MP2, MP4
Write arguments focused on discipline-specific content.	LA.CC.3.6.11-12.A	MP2, MP4
Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.	LA.CC.3.6.11-12.A.1	MP2, MP4
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	LA.CC.3.6.11-12.B	MP1, MP2 MP3, MP4
Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulation implications or the significance of the topic).	LA.CC.3.6.11-12.B.5	MP1, MP2
Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	LA.CC.3.6.11-12.G	MP2, MP4
Draw evidence from informational texts to support analysis, reflection, and research.	LA.CC.3.6.11-12.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, and 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: CER responses, chapter tests, culminating tasks, and projects