

STRANDS AND STANDARDS

ENVIRONMENTAL TECHNICIAN



Course Description

Environmental Technician is extensively performance, lab and field based learning. It integrates the study of many components of our environment, including the human impact on our planet. Areas of study also include, energy concepts, earth systems, and sustainable systems.

Intended Grade Level	11-12
Units of Credit	1.0
Core Code	40.05.00.00.020
Concurrent Enrollment Core Code	N/A
Prerequisite	None
Skill Certification Test Number	N/A
Test Weight	N/A
License Type	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Environmental Technician
Endorsement 2	N/A
Endorsement 3	N/A



STRAND 1

Students will be able to understand science as a process.

Standard 1

Utilize experiments to determine results.

Standard 2

Monitor experiments.

Standard 3

Collect observations.

Standard 4

Determine the best form of communicating the results.

Standard 5

Report your findings in a scientific literacy form.

Standard 6

Read and understand the purpose of case studies.

Standard 7

Understand and demonstrate safety as it relates to working with environmental sciences.

Standard 8

Lab protocol.

STRAND 2

Students will be able to understand energy concepts.

Standard 1

Thermodynamics

Standard 2

Energy flow.

Standard 3

Matter/nutrient cycles.

Standard 4

List the different types of energy.

- Solar
- Hydroelectric
- Fossil fuels

STRAND 3

Students will be able to understand earth systems.

Standard 1

Biosphere

- Biomes
- Ecosystems
- Evolution

Standard 2

Atmosphere properties and currents.

Standard 3

Lithosphere geologic events and processes.

Standard 4

Hydrosphere

- Oceanic currents and patterns (as they relate to climate)
- Surface and groundwater flow patterns and movement
- Cryosphere

Standard 5

Nutrient cycles.

STRAND 4

Students will be able to understand and demonstrate how humans alter nature systems.

Standard 1

Understand the different types of pollution and its effects on the environment.

- Air
- Water
- Land – use/misuse

Standard 2

Understand how global climate change has effected the environment.

Standard 3

Understand how waste disposal affects the environment.

- Toxic
- MSW
- Nuclear
- Plastics
- Water treatment/sewer

STRAND 5

Students will be able to understand that environmental problems have social and cultural context.

Standard 1

Population growth and impacts.

- Demographic transitions
- Toxicology
- Education and family planning

STRAND 6

Students will be able to understand and identify sustainable systems.

Standard 1

Conservation

- Establishing sustainable practices
- Management of systems - monitoring
- Water usage
- Preserving biodiversity

Standard 2

Land use

- Forestry
- Mining
- Agriculture
- Urbanization

STRAND 7

Students will be able to understand and demonstrate applied mathematics.

Standard 1

Perform basic arithmetic functions.

- Add, subtract, multiply, and divide whole numbers
- Add, subtract, multiply, and divide fractions
- Add, subtract, multiply, and divide decimals

Standard 2

Convert fractions/decimals.

- Convert fractions to decimal equivalents
- Convert decimal values to nearest fractional equivalent
- Use decimal equivalent chart for conversions

Standard 3

Convert metric/inch measurements.

- Convert inch dimensions to metric
- Convert metric dimensions to inch
- Use metric/inch conversion chart

Standard 4

Demonstrate graphing data.

- Graph data from a table
- Read and interpret graphs

Performance Skill

Understand and demonstrate applied mathematics.

- Perform basic arithmetic functions.
- Convert fractions/decimals.
- Convert metric/inch measurements.
- Demonstrate graphing data.

STRAND 8

Students will understand the importance of career readiness skills as it relates to the workplace and outlined in the SkillsUSA Framework – Level 1.

Standard 1

Understand and demonstrate the attitude of cooperation.

- Develop awareness of cultural diversity and equality issues.
- Demonstrate effective communication with others.
- Apply team skills to a group project.
- Identify and apply conflict resolution skills.

Standard 2

Understand and demonstrate the ability of being resourceful and innovative.

- Discover self-motivation techniques and establish short-term goals.
- Measure/modify short-term goals.
- Review a professional journal and develop a three- to five-minute presentation.

Standard 3

Plan for your future career.

- Complete a self-assessment and identify individual learning styles.
- Define future occupations.
- Identify the components of an employment portfolio.
- List proficiency in program competencies.

- Complete a survey for employment opportunities.
- Create a job application.
- Assemble your employment portfolio.
- Employability skills: evaluate program comprehension.

Standard 4

Understand and demonstrate the ability to manage a project.

- Apply team skills to a group project.
- Observe and critique a meeting.
- Demonstrate business meeting skills.
- Explore supervisory and management roles in an organization.
- Identify and apply conflict resolution skills.
- Demonstrate evaluation skills.
- Manage a project and evaluate others.