

**ENVIRONMENTAL LITERACY INSTRUCTOR
(Time-Based)**

APPENDIX A

O*NET CODE 25-3099.00

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

A. Teaching Methods and the Role of an Environmental Literacy Instructor **50**

1. Demonstrate knowledge of and are responsive to diverse learning needs, strengths, interests, and experiences of students.
2. Design instruction that reflects the multiple experiences, strengths, interests, and learning needs of students.
3. Plan and deliver instruction for individual students or groups of students.
4. Employ various teaching methods to allow for differentiation, various learning styles, and equitable access to instructional material.
5. Create opportunities for students to engage in self-directed learning.
6. Define role of instructor.

B. Understand Different Water Sources **250**

1. Explain the characteristics of water.
2. Explain the terms surface water, groundwater, wastewater, sewage, and storm water.
3. Understand the differences between salt water and fresh water, and sewage and wastewater.
4. Understand the concept of and consequences of surface water runoff, and modern storm water management systems.
5. Gain an understanding of the purpose and components of a wastewater treatment system, modern storm water management system, greywater systems, catchment systems, and living machines.

6. Identify and become aware of the problems associated with excessive ground water extraction, storm water runoff, and bottling drinking water.
7. Be aware of the water cycle – precipitation, evaporation, transpiration, and condensation.
8. Understand the importance of water for agricultural production.
9. Identify the concept of hydropower.
10. Comprehend and identify water conservation technologies.
11. Know how to measure and reduce residential water use.
12. Understand drip irrigation systems and identify their benefits.
13. Explain the concepts and benefits of native and edible landscaping.
14. Think creatively about how to design systems that can conserve, reuse, and store water used in buildings.
15. Understand the value of ecological wastewater treatment systems.

C. Waste

250

1. Recognize the processes of reusing, incineration, waste to energy incineration, resource recovery, composting, and cradle-to-grave.
2. Understand the following terms:
 - a. Organic
 - b. Inorganic
 - c. Solid waste
 - d. Decomposition
 - e. Biodegradable
 - f. Slag
 - g. Ash
 - h. Virgin resources
3. Identify the benefits and problems of landfills and incineration.
4. Understand the value of different policy approaches designed to reduce waste.
5. Learn the differences between waste management and material management approaches.

6. Identify the differences and benefits to reduce, reuse, recycle, and rot.

D. Transportation and the Environment

250

1. Become familiar with land use and transit planning processes and methodologies.
2. Understand the concept of urban sprawl and its associated problems.
3. Understand the concept of a transit system, fuel efficiency, peak oil, and transportation justice.
4. Define the terms smog, particulate matter, biofuels, biodiesel and ethanol.
5. Understand and explain the dominant role of fossil fuels in modern transportation systems.
6. Become aware of the differences and similarities between coal, oil and natural gas.
7. Understand how regional transportation planning and decision-making can impact low-income communities.

E. Energy Sources and Use

250

1. Define and identify characteristics of energy.
2. Understand the importance of coal, natural gas, and nuclear energy in modern electricity systems.
3. Explain how and why fossil fuels release carbon into the atmosphere when burned.
4. Understand the environmental and health problems associated with coal extraction, mining, and the burning of fossil fuels.
5. Define the terms: renewable energy, solar energy, wind energy, hydropower, geothermal energy, photovoltaic panel, energy efficiency, and precautionary principle.
6. Conduct a basic home energy audit.
7. Identify policy strategies that are used to change behavior and patterns of energy use.

F. Health, Food & Agriculture

250

1. Define the terms: food, nutrition, factory farm, mono-cropping, urban agriculture, pesticides, peri-urban agriculture, omnivore, and vegetarian, ect.

2. Understand and describe the health, environmental, and societal problems created by large scale animal operations and factory farming.
3. Understand the concept of “genetically modified foods” and some potential risks of Genetically Modified Organism (GMO) seeds and food production.
4. Gain an understanding of the following concepts: agricultural practices, biodiversity, crop rotation, food security, small and large scale food waste, and bioaccumulation, etc.
5. Distinguish between local, regional, and global food systems.
6. Identify how individuals can affordably increase their access to healthy foods.

G. Building Rating Systems and Products **250**

1. Explain the term built environment and natural environment and understand the differences.
2. Understand the differences between built and natural environment, and designing and constructing a building.
3. Understand and explain the concept of green building and its benefits.
4. Explain the volume and quality of materials used in construction and their alternatives.
5. Describe the benefits and problems associated with using conventional building materials. Identify the characteristics of environmentally friendly building materials.

H. Community Organization and Leadership **250**

1. Know how to distinguish advocacy and service work from community organizing work.
2. Familiarize students with the function of business incubators.
3. Understand the roles and tools of an effective community organizer. Be familiar with how organizers and leaders do outreach in the communities where they work.
4. Recognize the importance of leadership development and how organizers develop community-based leadership.

I. Financial Literacy and Social Entrepreneurship **200**

1. Understand how to be financially literate and thoughtful about how money is saved, spent, and borrowed.

2. Be able to identify, plan, and manage long/short financial goals and develop a budget.
3. Become aware of various financial services and the benefits and problems of relying on loans.
4. Become familiar with the terms entrepreneur and social enterprise.
5. Understand the difference between for-profit and a non-profit business.
6. Learn the common forms filed when starting a business.

Approximate Total Hours 2000

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>

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APPENDIX B

RELATED INSTRUCTION

Safety and the Workplace

1. Sexual Harassment Prevention Training – must comply with Section 201-g of the Labor Law

Trade Science and Theory

1. Water Cycle
2. Surface Water, Groundwater, Wastewater, Sewage, and Storm Water
3. Waste Management
4. Coal, Natural Gas, and Nuclear Energy
5. Renewable, Solar and Wind Energy
6. Agricultural Practices
7. Building Materials
8. Financial Planning
9. Community Organizations
10. Lesson Planning
11. Methods of Teaching
12. Curriculum and Instruction
13. Instructional Design for Online Learning Environment
14. Digital Learning
15. Special Needs Students (if applicable)

Other Courses As Necessary

A minimum of 144 Hours of Related Instruction are required for each Apprentice for each year.

Appendix B topics are approved by New York State Education Department.