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NAAEE ACCREDITED

Professional Environmental Educator Certification

2016-17 Course Syllabus

Course Description

The Professional Environmental Educator Certification (PEEC) course is accredited by the North American Association for Environmental Education (NAAEE). It is based on national environmental education standards developed by NAAEE and defined in the *Guidelines for the Preparation and Professional Development of Environmental Educators* (2010) and *Excellence in Environmental Education: Guidelines for Learning (K-12)* (2010). This course is designed to equip participants with the knowledge, skills and abilities outlined in NAAEE's guidelines for professional environmental educators in order to integrate the environmental education standards outlined in the *Guidelines for Learning (K-12)* with Kentucky's Academic Standards.

The PEEC course provides information and experiences to help participants develop: 1) scientific questioning and analysis skills; 2) a foundational knowledge of the relationships between human and natural systems; 3) the ability to apply that knowledge to address environmental issues; and 4) the ability to effectively plan, teach, and evaluate environmental education experiences. Feedback from participants has indicated a preference for interactive learning, so the course instruction is designed both to convey information and to model instructional strategies. It is also designed to give participants the opportunity to learn from each other, which participants strongly agree is a major benefit of the course.

This syllabus provides an overview for course participants. The contents of the syllabus are subject to change.

Certification

Participants who complete the course receive the designation, "Certified Professional Environmental Educator." Certification must be renewed annually by completing the Continuing Education requirements listed at: <http://keec.ky.gov/EECertification/Pages/CER.aspx>.

Course Objectives

In this course, students will learn to:

1. Demonstrate the skills and understandings outlined in *Excellence in Environmental Education—Guidelines for Learning (K–12)*.
2. Describe the goals, theory, practice, and history of the field of environmental education.
3. Demonstrate the responsibilities associated with practicing environmental education.
4. Combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction.
5. Enable learners to engage in open inquiry and investigation, especially when considering environmental issues that are controversial and require students to seriously reflect on their own and others' perspectives.
6. Demonstrate the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs.



Textbooks

- *Childhood and Nature: Design Principles for Educators* (2008). Sobel, D. Stenhouse Publishers, Portland, ME.
- *Environmental Education Certification Handbook* (2016). Kentucky Environmental Education Council.
- *Project Learning Tree: Pre K-8 Environmental Education Activity Guide* (2007). American Forest Foundation, Washington, DC.
- *Project WET Curriculum and Activity Guide 2.0* (2011). Project WET Foundation, Bozeman, MT.
- *Project WILD K-12 Curriculum and Activity Guide* (2013). Council for Environmental Education, Houston, TX.

Learning Format

The learning format for the course consists primarily of hands-on/minds-on activities, demonstrations, peer teaching, reflective thinking, and class discussions. Participants are required to be active in their own learning and to be reflective about information presented in the course, their own learning, and the learning of their student populations.

Updates/Changes in Course Schedule

Workshops will be held rain or shine. Activities will be indoors and outdoors so please prepare accordingly. In cases of severe inclement weather or other unexpected circumstances that may affect the course schedule, participants will be contacted via email at the earliest possible time.

Course Work Load

Full in-class participation is expected. There is also a considerable amount of homework that includes completing reading assignments and answering associated questions; preparing for an exam; preparing for an Environmental Issues Forum and completing a reflection; designing, teaching and assessing an environmental education lesson; and developing a unit of study. Average work time outside of class is estimated at between 30-60 hours.

Attendance and Makeup Work

Participants are required to attend all workshops. Workshops are sequential and build on prior content. If a participant must miss a weekend, or a portion of a weekend due to emergency or illness, makeup homework will be assigned. If a participant does not make up the work before the assigned deadline, they will not graduate from the course. Participants that miss more than one weekend are invited to complete the course the following year that the course is offered. If a participant cannot complete the missed workshops the next time they are offered, then they must repeat the entire course in order to graduate.

Assignments

Participants are required to turn in assignments by email or Dropbox. Those participants who are unable to do so should request accommodations as soon as possible, and at least three weeks before the first workshop.



Assessment

Assessments are based on the NAAEE Core Competencies for Certification Programs, listed in detail on page 5 of the syllabus. A participant who meets the requirements of all assessments will have demonstrated all core competencies. The assessments are:

- ✓ **Readings and Essays:** Participants will be assigned approximately 12 separate readings and write short essays that answer guiding questions before each workshop. These readings will be submitted and discussed at the appropriate workshops. (Average of three readings/essays per workshop.)
(Course Objectives assessed: 2-4)
- ✓ **Environmental Literacy Exam:** This exam will be administered on the first day of Workshop 2. A study guide will be provided. On exam day, the participants will discuss the exam questions in small groups prior to the exam. After group discussion, each participant will independently complete the written environmental literacy exam, within a 2-hour time limit.
(Course Objectives assessed: 1)
- ✓ **Environmental Issues Forum:** During Workshop 2, participants will engage in an Environmental Issues Forum, a structured deliberation of a contemporary environmental issue that affects Kentucky. Each participant will research their perspective on the issue, write a critical analysis of the sources they found, and be prepared to articulate their position during the forum (2-3 pages). Participants will then reflect on the forum, and describe their personal position on the issue, in a 4-5 page paper, a PowerPoint presentation, a poster, or an equivalent product.
(Course Objectives assessed: 1-3, 5)
- ✓ **Student Teaching:** Participants will teach and be evaluated on their instruction of an environmental education lesson in a setting of their choosing. Participants will incorporate this lesson, with modifications determined through personal reflection on the experience, as well as those changes recommended by their evaluator, into their Unit of Study.
(Course Objectives assessed: 3-6)
- ✓ **Environmental Education Unit of Study:** Participants will write an environmental education instructional unit of study. Detailed instructions for this unit will be provided throughout the course. This is a culminating assessment where the lessons outlined will incorporate all the principles of teaching, learning and assessment that have been taught throughout the course.
(Course Objectives assessed: 1-6)

Course instructors will score each assessment using a rubric which will be provided to participants in advance of the assessment, except for the Environmental Literacy Exam, which is scored by an answer key. For the readings and exam, a score of 70% or above is required to pass the assessment. For the issue paper, lesson, and unit of study, a participant passes when at least 70% of the criteria are met at the “developing” or “beginning to meet criteria” level or higher. Scored rubrics will be returned to participants as they are completed by instructors.

This course is based on the principles of mastery learning. If participants do not meet the requirements on their first attempt on any of the assessments, they will be given the opportunity to review the appropriate material and resubmit the assessment. This ensures that participants complete the course with the competencies necessary to provide quality environmental education.

Along with scored assessments, all other physical student materials are returned to students. The exception is the Environmental Literacy Exam, which students will review, but will not be allowed to keep in order to maintain test security. Copies of assessments and other student records are maintained electronically on the KEEC's secure servers for eight years. Summaries of assessment results and certification status are retained permanently. Student materials are seen only by KEEC staff and course instructors, and are otherwise kept confidential except as required by Kentucky Open Records law.

Support Services

In order to assist with completing certification requirements, the KEEC will provide the following at the request of course participants:

- Accommodations for special needs
- Accommodations for participants who lack Internet access
- Mentors

Course Outline (The course content and schedule may be modified as required, e.g., change of pace, addition or omission of material, change in number and dates of exams, readings and other assignments)

	Date	Items/Assignments
2016	Prior to Nov. 3	✓ Complete readings and related writing assignments.
	Nov. 3	Workshop 1 (Day 1) ✓ Writing assignments due
	Nov. 4	Workshop 1 (Day 2)
	Nov. 5	Workshop 1 (Day 3)
	Nov. 6- Nov. 30	✓ Complete readings and related writing assignments. ✓ Research assigned environmental issue and critically analyze two sources
	Dec. 1	Workshop 2 (Day 1) ✓ Writing assignments due ✓ Environmental Literacy Exam ✓ Environmental Issues Forum
	Dec. 2	Workshop 2 (Day 2)
	Dec. 3	Workshop 2 (Day 3)
2017	Dec. 4 - Feb. 8	✓ Complete Environmental Issues Forum reflection assignment ✓ Complete readings and related writing assignments. ✓ Schedule Student Teaching
	Feb. 23	Workshop 3 (Day 1) ✓ Writing assignments due ✓ Environmental Issues Forum reflection assignment due
	Feb. 24	Workshop 3 (Day 2)
	Feb. 25	Workshop 3 (Day 3)
	Feb. 26 - March 22	✓ Student Teaching: teach and assess an environmental education lesson in your work or volunteer setting. ✓ Complete readings and related writing assignments.
	March 23	Workshop 4 (Day 1) ✓ Writing assignments due ✓ Discuss experiences in Student Teaching.
	March 24	Workshop 4 (Day 2)
	March 25	Workshop 4 (Day 3)
	April 28	✓ Environmental Education Unit of Study due
	TBA	Graduation



North American Association for Environmental Education (NAAEE) Core Competencies for Certification Programs

Note: The competencies must be demonstrated by candidates of certification programs that are accredited by the NAAEE. Kentucky is currently applying for NAAEE accreditation. The competencies are presented along with the NAAEE Guidelines for the Preparation and Professional Development of Environmental Educators.

Theme 1: Environmental Literacy

Guideline 1.1 Questioning, analysis, and interpretation skills: Developing environmental literacy depends on a willingness and ability to ask questions about the surrounding world, speculate and hypothesize, seek and evaluate information, and develop answers to questions. Environmental literacy requires a familiarity with some basic modes of inquiry, a mastery of fundamental skills for gathering and organizing information, and an ability to interpret and synthesize information and communicate explanations.

Core Competencies:

- A certified environmental educator will compare and contrast three different investigative approaches/methods/modes and apply at least one of them to an environmental topic.
- A certified environmental educator will describe two scenarios in which environmental knowledge is incomplete, and will explain how environmental knowledge continues to change as discoveries are made.
- A certified environmental educator will critically analyze two or more sources of information for accuracy and reliability.

Guideline 1.2 Knowledge of environmental processes and systems: Environmental literacy hinges on understanding the processes and systems that comprise the environment, including human systems and their influences. That understanding is based on knowledge synthesized from across the traditional disciplines (especially the natural and social sciences) and includes knowledge about the Earth as a physical system and living environment.

Core Competencies:

- A certified environmental educator will demonstrate an understanding of the processes and systems that comprise each of these concepts:
 - biological change;
 - cycles, physical processes that shape the earth, and energy flow;
 - biodiversity;
 - cultural, political, and economic systems;
 - human interactions with the environment; and
 - ecological consequences.
- A certified environmental educator will demonstrate knowledge of the certifying state and bioregion's natural and cultural histories.

Guideline 1.3 Skills for understanding and addressing environmental issues: Environmental literacy includes the abilities to learn about, evaluate, and act on environmental issues. The skills and knowledge outlined in the first two guidelines (1.1, questioning, analysis, and interpretation skills; and 1.2, knowledge of environmental processes and systems) are applied and refined in the context of these issues—the real-life dramas where



differing viewpoints and interpretations of data about environmental problems and their potential solutions are played out.

Core Competencies:

- A certified environmental educator will differentiate between an environmental event, problem, and issue.
- A certified environmental educator will identify an environmental issue and, for that issue, design a plan to:
 - Investigate, analyze, and evaluate its scope, causes, and consequences; and
 - Investigate and evaluate alternative solutions.

Guideline 1.4 Personal and civic responsibility: Environmental literacy is activated by individual commitment. Environmentally literate citizens are motivated and empowered to act on their own informed conclusions about what should be done to ensure environmental quality. In developing and applying concept-based learnings and skills for inquiry, analysis, and action, people cultivate an understanding that what they do as individuals and in groups makes a difference.

Core Competencies:

A certified environmental educator will

- Describe an environmental issue and various societal values that play a role in it;
- Articulate citizen rights and responsibilities, as well as his/her position, with respect to that issue;
- Propose and justify a course of action;
- Design a plan to carry out that action; and
- Critique that plan, to include probable outcomes and consequences.

Theme 2. Foundations of Environmental Education

Guideline 2.1 Fundamental characteristics and goals of environmental education: Educators understand environmental education as a distinct field and know its defining characteristics and goals.

- Identify the goals and objectives of environmental education as laid out in founding documents of the field such as the Belgrade Charter (UNESCO-UNEP, 1976) and Tbilisi Declaration (UNESCO, 1978), as well as in more recent definitions such as Agenda 21 (UNCED, 1992).
- Describe the broad view that environmental education takes of “environment,” incorporating concepts such as systems, interdependence, and interactions among humans, other living organisms, the physical environment, and the built or designed environment.
- Discuss environmental education as an interdisciplinary field and provide examples of ways in which it draws on and integrates knowledge from across academic disciplines.
- Identify major components of environmental literacy. Discuss influences that have contributed to the evolution of these concepts, such as work done by Charles Roth, Harold Hungerford, R. Ben Beyton, and Rick Wilke.
- Relate environmental education’s focus on environmental literacy and citizenship with the need to provide opportunities for learners to enhance their capacity for independent thinking and effective, responsible action.

Core Competencies:

- A certified environmental educator will be able to describe the goals, objectives and characteristics of environmental education that contribute to making it a distinct field.



Guideline 2.2 How environmental education is implemented: Educators understand that environmental education takes place in a variety of settings and that sources of support, program requirements, and other factors vary from context to context.

- Identify a range of individuals, organizations, and agencies delivering environmental education programs, including formal and nonformal programs. Identify efforts to link formal and nonformal programs through partnerships and other collaborations.
- Discuss how school policies, state or local mandates for environmental education, and federal legislation influence environmental education efforts.
- Describe a variety of national, regional, state, and local environmental education programs and support services, including funding sources and resources.

Core Competencies:

- A certified environmental educator will be able to identify two major national and two state EE providers and the resources they offer.

Guideline 2.3 The evolution of the field: Educators are familiar with how the field of environmental education has changed over time and continues to change.

- Discuss how educational movements, including progressive education, nature study, outdoor education, conservation education, and ecology education, contributed to the development of environmental education and how they differ from environmental education.
- Discuss how the work of bodies such as the Brundtland Commission (Brundtland, 1987), the United Nations Conference on Environment and Development (UNCED, 1992), the International Conference on Environment and Society (UNESCO 1997), and the World Summit on Sustainable Development (2002) has influenced—or might influence—environmental education.
- Describe specific findings from environmental education research and discuss their effect on how environmental education might be perceived, defined, or practiced.
- Identify current and emerging issues in the field of environmental education. For example, evaluate assertions that environmental education focuses more on advocacy rather than education and discuss how these assertions are affecting environmental educators and education programs.
- Describe how specific environmental education research findings have informed the educator's own perspective.

Core Competencies:

- A certified environmental educator will be able to explain the evolution of the field of environmental education, by citing and describing the significance or impact of two historical documents, three movements (historical and emerging), two policies, and three individuals in making the field what it is today.
- A certified environmental educator will be able to discuss how at least one current policy impacts his or her day-to-day work.

Theme 3: Professional Responsibilities of the Environmental Educator

Guideline 3.1 Exemplary environmental education practice: Educators understand their responsibility to provide environmental education that is appropriate, constructive, and aligned with the standards of the field.

- Identify ways in which environmental education can be used as a tool for meeting curriculum standards and addressing education reform goals. Identify and practice ways in which educators can enhance these links in their work.



- Assess the role of partnerships with community members and organizations, government agencies, businesses, the formal and nonformal education systems, and others in providing environmental education that is appropriate and helpful to the community.
- Model responsible, respectful, and reasoned behavior during instruction.
- Model the process of inquiry and application of environmental investigations in instruction.

Core Competencies:

- A certified environmental educator will model responsible, respectful, and reasoned behavior during two presentations and an interaction (e.g. committee meetings, activities, communications, etc.) with a local community.
- A certified environmental educator will correlate two inquiry-based lessons to national and/or state academic standards.

Guideline 3.2 Emphasis on education, not advocacy: Educators understand that their commitment as environmental educators is to provide accurate, balanced, and effective instruction—not to promote a particular view about environmental conditions, issues, or actions.

- Identify and implement instructional techniques for presenting differing viewpoints and theories in a balanced manner and identifying potential sources of bias in information.
- Differentiate among instructional materials on the basis of their factual accuracy. Select and use materials that together present a range of differing viewpoints, ethical positions, and interpretations where there are differences of opinion or competing scientific explanations. Weigh evidence regarding environmental problems based on validity of data (e.g., from scientific societies or reputable journals).
- Identify and implement instructional strategies and techniques that encourage learners to explore different perspectives, form their own opinions, and explain their beliefs.

Core Competencies:

- A certified environmental educator will illustrate with two examples what the differences are between advocacy and education.
- A certified environmental educator will identify two instructional strategies and two curriculum materials/resources (e.g. CD-ROMs, videos, posters, books, websites, etc.) and explain how they can be used to encourage learners to gain/explore different perspectives, form their own opinions, and support their beliefs.
- A certified environmental educator will implement one of the instructional strategies he or she identified and explained.

Guideline 3.3 Ongoing learning and professional development: Educators are aware of the need to be active learners in their professional lives.

- Identify and practice ways of continually updating information about the environment and issues, current research, environmental education materials, and instructional methods. For example, critically read scientific journals or join and actively participate in local, state, national, or international organizations associated with environmental education, or participate in a professional certification program.
- Identify and develop relationships with mentors, advisors, and others who challenge educators to expand and upgrade their knowledge and skills and expand their firsthand understanding of different points of view about environmental issues.



- Reflect on and learn from personal practice as an environmental educator, both individually and with other professionals and colleagues. Use tools such as peer coaching, portfolios, and journals.
- Seek out opportunities to learn essential content and skills in real-world environmental settings or contexts, especially within the communities and ecosystems in which one lives and teaches.
- Learn and use research and analytical skills to expand existing knowledge about the environment, related issues, and environmental education.

Core Competencies:

- A certified environmental educator will identify his or her own past and present professional development activities, conduct a self-assessment of the degree to which he or she currently meets the core competencies, and create a plan for his or her future professional development, identifying
 - Specific gap(s) in his or her knowledge and skills and
 - Three different methods to achieve improvement (e.g. membership in professional associations, professional journals, mentoring, conferences, field experiences, etc.).

Theme 4: Planning and Implementing EE

Guideline 4.1 Knowledge of learners: Educators know how to tailor instructional approaches to meet the needs of, yet challenge, different learners.

- Identify and model methods for presenting the environment or environmental issues in appropriate and engaging ways for learners of different ages, backgrounds, levels of knowledge, and developmental abilities. (This range may include adults, especially for educators in nonformal settings.)
- Select environmental education materials and strategies that are developmentally appropriate for a designated age or level of knowledge. Adjust these to respond to individual differences among learners.
- Demonstrate an understanding of learning theories such as multiple intelligences and learning styles. Organize environmental education instruction to accommodate different approaches to learning.
- Apply theories of cognitive and moral or social development in creating an environmental education instructional plan for a particular grade level, class, or group.
- Recognize and acknowledge the validity of varying cultural perspectives present in groups of learners. Tailor instructional approaches to respond to these perspectives and use them as an educational resource.

Core Competencies:

- A certified environmental educator will demonstrate and/or document appropriate instructional approaches that meet the needs of diverse learners, taking into account differences in:
 - Cultural and socioeconomic backgrounds,
 - Age and grade level,
 - Levels of knowledge and experience,
 - Special needs, and
 - Developmental abilities.

Guideline 4.2 Knowledge of instructional methodologies: Educators are familiar with and can employ a range of instructional methods that are particularly suited to environmental education.

- Select among relevant environmental topics and issues for study based on learners' interests and their ability to construct knowledge to gain conceptual understanding.
- Use a variety of teaching methods and strategies appropriate for the environmental education content and context.



- Select instructional methodologies based on learning objectives, learner characteristics, time requirements, involvement of community members, community dynamics and policies, available resources, and the instructional setting.

Core Competencies:

- A certified environmental educator will demonstrate three distinct instructional methods that are particularly suited to environmental education; these methods include:
 - Hands-on observation and discovery in the environment
 - Inquiry
 - Cooperative learning
 - Community-based action research and problem solving
 - Investigating environmental issues
 - Service learning
 - Simulations and models
 - Case studies
 - Problem-based learning
 - Project-based learning

Guideline 4.3 Planning for instruction: Educators are able to plan age-appropriate environmental education instruction and programs that meet specific instructional goals.

- Produce a plan for environmental education instruction and demonstrate how the overall plan and specific elements (such as plans for units of instructional or daily activities) enhance coordination or integration across disciplines or help meet specific goals of environmental education.
- Develop a plan for a coherent, focused environmental education program that is consistent with the content outlined in *Excellence in Environmental Education—Guidelines for Learning (K–12)* or comparable expectations for adults.
- Demonstrate how plans for environmental education instruction will help learners meet relevant national, state, and local educational standards for learning performance in specific disciplines.

Core Competencies:

- A certified environmental educator will articulate the scope of what constitutes environmental knowledge and skills as well as the sequence in which they should be learned, by aligning one program’s content to the *Guidelines for Learning (K-12)*. (Note: For adult programs refer to “Theme 1: Environmental Literacy” of the *Guidelines for Initial Preparation of Environmental Educators*, as a framework.)

Guideline 4.4 Knowledge of environmental education materials and resources: Educators are aware of a range of materials and resources for their environmental education efforts and understand how to access, evaluate, and use these resources.

- Identify and evaluate materials and education resources using criteria such as those suggested in *Environmental Education Materials: Guidelines for Excellence*.
- Demonstrate ways in which the community can be a resource for environmental education, identifying local businesses, service organizations, government agencies, nonprofit organizations, and others that may participate in and support instructional programs.
- Identify and use sources of information about instructional materials and other resources including training offered by national, state, and local environmental education programs and professional organizations.



- Use the Internet to identify and access sources of information about the environment, particular issues, and educational resources. Critically evaluate the usefulness of resources found on the Internet.

Core Competencies:

- A certified environmental educator will be able to list and critically evaluate two types of EE materials obtainable from community and corporate organizations, agencies, professional development training programs, and/or the Internet. (Note: Evaluations should be based on *Environmental Education Materials: Guidelines for Excellence.*)
- A certified environmental educator will be able to critically evaluate one state or local EE program. (Note: Evaluations should be based on *Nonformal Environmental Education Programs: Guidelines for Excellence.*)

Guideline 4.5 Technologies that assess learning: Educators are familiar with a range of technologies available to assist student learning.

- Use a variety of tools for environmental observation, measurement, and monitoring (e.g., magnifying glasses, chemical tests, hygrometers, survey and interview techniques, traffic counts) and instruct learners in their safe and proper use.
- Demonstrate proficiency with technologies used to display, analyze, and communicate environmental information.
- Identify sources of expertise about unfamiliar learning technologies and learn from them or incorporate this outside expertise into instruction.

Core Competencies:

- A certified environmental educator will describe three types of instructional tools or technologies and give examples of their safe, effective, appropriate use in instructional settings.

Guideline 4.6 Settings for instruction: Educators understand the importance of a safe and conducive learning environment both indoors and outside.

- Demonstrate a concern for learner safety in designing, planning, and implementing instruction, especially experiences that are hands-on or that take place outside the classroom. Attend to the physical layout and maintenance of the learning facility or center so learners can use it safely and effectively.
- Identify, create, and use diverse settings for environmental education, appropriate to different subject matter and available resources. These may include the school yard, laboratory, field settings, community settings, museums, zoos, demonstration sites, and other places.
- Identify or develop and implement responses to real or perceived barriers to using expanded settings (such as outdoor settings) in educational and safe ways.
- Plan and implement instruction that first links content to learners' immediate surroundings and experience, then expands learners' horizons as appropriate to larger environmental issues and contexts.

Core Competencies:

- A certified environmental educator will analyze one of his or her teaching environments citing three ways to address potential safety issues and three ways in which the teaching environment is appropriate for the subject matter he or she is teaching.
- A certified environmental educator will describe three field experiences in which he or she has been able to link content to the learners' immediate environment.



Guideline 4.7 Curriculum planning: Educators are familiar with ways of including environmental education in the curriculum.

- Describe basic approaches to creating a developmentally appropriate scope and sequence for environmental education curricula.
- Develop an environmental education program designed to meet the educational goals of an agency or other institution using criteria such as those outlined in *Nonformal Environmental Education: Guidelines for Excellence*.
- Develop a plan for integrating environmental education into the formal school curriculum, either across the curriculum or as a separate course or emphasis within one or more areas of study.
- Demonstrate links between environmental education curricula (or plans for integrating environmental education into an existing curriculum) and national, state, or local standards in disciplines such as science, mathematics, social studies, geography, and language arts.
- Correlate environmental education with state education standards in a particular discipline or grade level.

Core Competencies:

- A certified environmental educator will give two examples of how he or she has successfully integrated environmental education into curricula, programs or an organization's mission.
- A certified environmental educator from the nonformal community will be able to demonstrate strategies for supporting and enhancing teachers' efforts in environmental education at the P-12 level.

Theme 5. Fostering Learning

Guideline 5.1 A climate for learning about and exploring the environment: Educators understand how to create a climate in which learners are intellectually stimulated and motivated to learn about the environment.

- Relate the idea of lifelong learning to instructional practices that engage learners in taking responsibility for their own learning and expectations for achievement. Demonstrate proficiency with these practices in instructional settings.
- Imbue instruction with a sense of the importance and excitement of the content.
- Provide opportunities for experiences that increase learners' awareness of—and enthusiasm for—the natural and human designed environment.
- Incorporate opportunities for learners to have firsthand experiences exploring the world around them.
- Discuss why fostering clear and independent thinking is important in light of environmental education's goal of developing environmentally literate citizens.
- Identify and use instructional techniques that encourage learners to ask questions and explore a variety of answers.

Core Competencies:

- A certified environmental educator will demonstrate that he or she successfully stimulated learners' interest in the environment.

Guideline 5.2 An inclusive and collaborative learning environment: Educators know how to maximize learning by fostering openness and collaboration among learners.

- Identify and use ways to encourage flexibility, creativity, and openness, considering the assumptions and interpretations that influence the conclusions that learners and others draw about the environment and environmental issues.
- Relate learners' capacity for collaborative work to their ability to function as responsible and effective citizens. Describe and implement management techniques that foster independent and productive group work.



- Include diverse cultures, races, genders, social groups, ages, and perspectives with respect, equity, and an acknowledgment of the value of such diversity. Use diverse backgrounds and perspectives as instructional resources.

Core Competencies:

- A certified environmental educator will demonstrate that he or she successfully engaged children/adults in their own learning and provided first-hand, inquiry-based, developmentally appropriate experiences, indicating ways in which they collaborated.
- A certified environmental educator will demonstrate that his or her lesson/presentation was relevant and interdisciplinary.
- A certified environmental educator will cite two instances where he or she used the diverse backgrounds and perspectives of learners not just as context but also as an instructional resource.

Guideline 5.3 Flexible and responsive instruction: Educators know how to augment proper planning with the flexibility that allows them to take advantage of new instructional opportunities.

- Modify instructional plans and approaches, when appropriate, to take advantage of unexpected opportunities (e.g. new developments in community issues, recent events or phenomena that are in the news, or breakthroughs in scientific understanding) and learner questions and interests.
- Blend a variety of instructional methods and activities to meet instructional objectives. Make smooth transitions from one to another.
- Work collaboratively with other instructors and discipline areas, adapting instructional approaches as needed to blend or complement instructional styles and to meet shared environmental education goals.

Core Competencies:

- A certified environmental educator will demonstrate that he or she is able to take advantage of “teachable moments” by being flexible and open to student questions and ideas.

Theme 6: Assessment and Evaluation

Guideline 6.1 Learner outcomes: Educators understand the importance of tying assessment to learning.

- State expected learner outcomes that are tied to the goals and objectives of environmental education.
- Identify national, state, and local standards that apply to stated learner outcomes and link assessment of environmental education learnings to these.
- Develop and use a variety of strategies for assessing learning outcomes that reflect both subject area standards and environmental education goals and objectives.
- Describe and use means for engaging learners in setting their own expectations for achievement. Discuss the importance of these abilities in light of environmental education’s emphasis on learner-centered education and lifelong learning.

Core Competencies:

- A certified environmental educator will demonstrate the use of two assessment tools designed to measure cognitive, affective, and/or psychomotor outcomes that align with instructional objectives (NOTE: Instructional objectives should be drawn from state standards and/or EE goals and objectives.)

Guideline 6.2 Assessment that is part of instruction: Educators are familiar with ways of incorporating assessment into environmental education.



- Make objectives and other expectations clear to learners at the outset of an environmental education activity or instruction.
- Provide examples of and implement specific performance-based assessments such as portfolios, open-ended questions, oral reports, group or independent research, or other projects appropriate to environmental education instruction.
- Identify and use techniques that assess learners' baseline understandings and skills at the beginning of environmental education programs, lessons, units, and other segments of instruction such as school terms.
- Develop formative and summative assessment tools appropriate to specific environmental education instructional segments or projects.
- Discuss the importance of and identify techniques for encouraging learners to assess their own and others' work. Use these assessments to improve their learning experiences.

Core Competencies:

- A certified environmental educator will demonstrate the implementation of one strategy to engage learners in setting their own expectations for learning and evaluating their performances.
- A certified environmental educator will demonstrate how one assessment strategy was used to shape instructional planning and/or delivery.

Guideline 6.3 Improving instruction: Educators know how to use their instructional experiences and assessments to improve future instruction.

- Organize, interpret, and use the results of differing kinds of assessment to help modify and improve future instruction.
- Demonstrate a willingness and ability to collect additional information from and about learners to help modify and improve future instruction.
- Seek out opportunities to reflect, individually and with colleagues, on their own instructional practices and the broader practice of environmental education within the field.

Core Competencies:

- A certified environmental educator will demonstrate one example of how assessment and/or evaluation data were used to improve instruction.

Guideline 6.4 Evaluating programs: Educators understand the importance of evaluating environmental education programs and are familiar with basic evaluation approaches.

- Discuss how program evaluation, including needs assessment, formative evaluation, and summative evaluation, contributes to program design and implementation.
- Differentiate among program outputs, outcomes, and impacts and explain how they relate to program goals and objectives.
- Describe reasons for evaluating environmental education programs.
- List a variety of data collection methods used in environmental education program evaluation.
- Develop a plan for integrating evaluation into the overall program design process using criteria such as those suggested in *Nonformal Environmental Education Programs: Guidelines for Excellence*.

Core Competencies:

- A certified environmental educator will describe:
 - One way he or she used evaluation to design or develop an environmental education program.
 - One way he or she used evaluation during program implementation to improve an environmental education program.



- One way he or she used evaluation to determine the impact of an environmental education program.
- A certified environmental educator will display three data collection tools and the analysis he or she used to evaluate an EE program.

