

**FNR 4070C: Environmental Education Program Development**  
**University of Florida**

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Class Meets Wednesday, periods 7-9 (1:55 – 4:55); Room 222, NZ Hall

TAs: Gabby Salazar and Natalie Cooper

Good environmental education (EE) programs are designed to meet environmental and educational goals for specific audiences. They use appropriate teaching strategies to engage learners and build capacity to resolve environmental issues. The development of a good program includes: a comprehensive needs assessment to understand the audience and available resources; a pretest of the materials prior to full-scale implementation; a training program for staff or volunteers; and an evaluation procedure to continue improving the program. This course will introduce students to these techniques of program development for adult and youth-based environmental education activities in the non-formal arena (such as nature centers, extension, residential facilities, environmental organizations, and resource agencies). Students will work together to develop and implement tools for a program evaluation.

**Course Description:**

A comprehensive approach to program development, from needs assessment to evaluation, will be applied to non-formal environmental education.

**Course Objectives:**

By the end of this course, all students will be able to:

- Describe the goals and objectives of environmental education (EE) and education for sustainable development (ESD)
- Explain how a variety of educational programs achieve EE goals
- Critique EE and ESD materials
- Use a Logic Model for program planning
- Develop objectives and a vision for an EE program
- Apply learning theory and teaching strategies to environmental education programs
- Develop and use evaluation tools
- Write a fundable grant proposal for EE program development
- Develop teaching skills for implementing EE lessons for youth

**Materials:**

- Readings on reserve –<https://ares.uflib.ufl.edu/>– access through Canvas <http://lss.at.ufl.edu> – This course is FNR4070/5072.
- *Evaluating Your Environmental Education Programs* – Distributed in class
- *Guidelines for Excellence in EE: Materials (171B04003) and Nonformal Programs (171B04001)* – Order from USEPA <http://www.epa.gov/nscep/index.html>

**Course Policies:**

Students are expected to attend class, engage in discussion, submit assignments on time, and participate in group work. Absences will be excused if accompanied by appropriate paperwork. More

than one unexcused absence will result in a reduction in the participation score. Assignments are to be turned in during class or on Canvas on the day they are due. A late assignment will be docked 1% per day from the final score for each day it is late.

### Grading Scale:

A	93 – 100%	C	73 – 76%
A-	90 – 92%	C-	70 – 72%
B+	87 – 89%	D+	67 – 69%
B	83 – 86%	D	63 – 66%
B-	80 – 82%	D-	60 – 62%
C+	77 – 79%	E	below 59%

## University of Florida Policies

### Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### Absences and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

### Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”*

It is assumed that you will complete all work independently unless I have asked you to collaborate on course tasks (e.g., project). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

### Plagiarism

Plagiarism is using other’s words without appropriate citation in your writing. It is perfectly and importantly appropriate to reference other’s ideas, but you must do so with citations (to credit their ideas in your words) or quotations (to use their words). In this class, an author-date citation is fine, with a Literature Cited section listed alphabetically with enough information to find the source: author, date, title of paper or book, title of journal or website, publisher, page or website. You can find more

information about plagiarism here: <http://www.uflib.ufl.edu/msl/07b/studentplagiarism.html>. We will be using TurnItIn software to check for plagiarism. You can use their site to check your own work before you submit it.

### **Software Use:**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

### **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Training Programs
  - Community Provider Database
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

### **Services for Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

### **Free Speech Rights and Responsibilities**

Although students have free speech rights under the United States Constitution, in academic and other workplaces those rights are limited when they infringe upon another person's right to work in an environment free of harassment.

## Course Objectives

By the end of the relevant class, students will be able to:

Describe the roots of environmental education in the U.S.

Explain how social and political influences continue to shape EE in the U.S.

Explain how people learn information, concepts, and skills.

Use the learning cycle to develop and critique educational activities and program plans.

Explain current movements in science education and the impacts they are/may have on EE (No Child Left Behind/No Child Left Inside, service learning, EIC, etc.)

Understand the role of state standards and testing in education reform.

Describe the strategies and guidelines for EE materials and program development that should lead to excellence in EE.

Explain the components of a logic model.

Develop a logic model that describes an EE program.

Use the learning cycle and research on education to develop logic models and programs.

Describe the steps of program development and the purpose of three types of evaluation.

Develop program and behavioral objectives.

Describe the advantages, disadvantages, and purposes of five evaluation tools.

Create items for evaluation tools for different types of evaluation.

Explain the qualities of a good survey or interview question.

Create a program that meets a need and the funding guidelines described in a proposal request.

Develop logic model, objectives, program description, evaluation plan, letters of support, budget for your program.

Explain how misconceptions, selective perception, and political agendas can affect environmental education.

Describe bias and explain why environmental and industry groups may be accused of it.

Develop strategies for detecting bias in materials and for creating materials that rise above it.

Describe education for sustainable development and compare it to EE.

Explain the criteria or objectives of programs that meets the goals of both and of either EE or ESD.

Justify the role of EE or ESD in schools, communities, parks, and agencies.

Enhance environmental education skills by working with a client to teach youth, develop a self-guided program, or conduct an evaluation.

Wk	Class	Theme In Class	Prepare for class	Due
<b>What is effective EE?</b>				
1	8/21	Intro, History, Future of EE	Order Guidelines, distribute book; Discuss field trips & projects; Canvas site	
2	8/28	Awareness and Knowledge Experiential Learning	Read readings; Activities and lecture Confirm field trips	
3	9/4	Skills and Participation CI: Schools & Standards CI: Project-based Learning	Read readings	Assignment 1: Materials Review
4	9/11	NAAEE Guidelines for Excellence	Read readings	Assignment 2: Program Review
<b>Developing and Evaluating a Program</b>				
5	9/18	Logic Model Program Development Plan to teach	Read readings Think about meaningful evaluation questions	
6	9/25	Eval Plans and Tools Plan to teach	Read readings Develop an observation tool for your teaching project	Assignment 3: Logic Model
7	10/2	Eval Tools Data collection Practice teaching	Read readings	Assignment 4: Evaluation Plan
8	10/9	CI: Connecting to nature Practice teaching, organize reflection tools	Read readings	Assignment 5: Evaluation Tools
9	10/16	Online Midterm	No class	Assignment 6: Midterm due Oct 20.
10	10/23	Reflect on your teaching; Discuss project report CI: ESD	Read readings	
<b>Writing Proposals for EE Programs</b>				
11	10/30	Writing Proposals Reflect on teaching	Use workbook to complete first 2 tasks	Assignment 7: Teaching Plan and Reflection
12	11/6	Writing Proposals	Use workbook to finish orientation to proposal writing	Submit & bring 1-page proposal for feedback
13	11/13	Visions of Effective EE CI: Diversity Equity Inclusion Justice	Read readings	
14	11/20	Proposal Questions CI: Behavior and Backlash	Read readings	
15	11/27	Thanksgiving	No Class	
16	12/4	Present proposals	Course Evaluation; Reflection on projects	Assignment 8: Grant Proposal

CI = Current Issues in EE

## Group Teaching Project

You will use this class to improve your teaching skills! Pick one project from below and use this to complete the logic model, evaluation plan, evaluation tools, and teaching plan/reflection assignments. A portion of your grade (20%) will come from a peer evaluation.

- A. **Little Orange Creek Preserve:** Join the class for an introduction to the elementary programs at the Little Orange Creek Preserve, define a portion of that program that you can teach, and use class time to get feedback on your ideas for engaging youth in an experiential and interesting lesson. Practice your lesson in class (Oct 2, 9), and then teach real children at Little Orange Creek. Site visits will be arranged based on your schedules, but the van will leave at 8:00 and return at 1:30, because the staff arrive at 8:30 am, the program runs from 9:15 to 12:30 pm, and we need a little time to process what happened.
- B. **Austin Cary Forest Turpentine Still, Cooperage Shed, and Sawmill:** SFRC's school forest has restored a turpentine still and assembled tools for building barrels. On the horizon is a sawmill. These materials tell a wonderful story, but it is static. This group will develop several high quality activities that could be completed by groups of children to learn important concepts about forest history, resin and turpentine, and wood products. You will work with a local expert on naval stores to obtain background, and can modify existing activities, if appropriate. The emphasis here is on development, not teaching, but we need to provide some guinea pigs for you to practice teaching. That may be us!

Project Learning Tree Teacher Workshop. You will become familiar with PLT as a part of this course. If you are interested in gaining experience facilitating professional development training, you will work with a group to assist Joe MacKenzie and Mary Barr facilitate a teacher workshop on October 19.

## Assignments

1. **EE Material Review:** Critique EE materials. You may borrow something from my collection, use something you have, or download a resource from the Internet. Please describe the program, purpose, audience, and setting. Describe evidence of experiential learning and other educational techniques that suggest quality learning experience. Review the objectives, and describe them in the context of EE Tbilisi objectives. Use Guidelines for Excellence to critique program materials. Two single spaced pages. Due September 4. 5 points.
2. **EE Program Observations:** You will observe one live in-person program and reflect on how it meets (or doesn't) Tbilisi EE objectives and use effective educational strategies. Please describe the program, purpose, audience, and setting. Use Guidelines for Excellence to critique the non-formal program or learning objectives. Two single spaced pages. Due September 11. 5 points.
3. **EE Program Logic Model:** Use your project to develop a logic model that explains the resources, audiences, activities, and outcomes that are expected. You can interview the program staff to learn how they see their program. Due September 25. 5 points.

4. **Evaluation Plan.** Use your logic model to create an evaluation plan for your project. This will not be implemented, so you can be creative about what should and could be evaluated, within reason! Think about what the stakeholders would want to know and how that information could be collected. Due Oct 2. 5 points.
5. **Evaluation Tools.** You will develop two evaluation tools that are appropriate for your project and that would evolve from your evaluation plan. One tool will be a survey that you will not implement, and the other will be an observation guide that a classmate will use to observe you teach. You will bring your draft tools to class on October 9 so you can get feedback from the rest of your group. Your revised versions will be used when you teach and included in your group project report. 10 points
6. **Midterm.** This two-part assessment will enable you to review and make sense of the material covered in the first half of the course. You will receive the take home essay questions by October 9 to enable you to synthesize the course information and think about your responses. The exam will be available online from October 13 through October 20, but you will only have 2 hours to complete it once you begin. You are welcome to use any written resources from class or the library, but please work alone. 20 points.
7. **Teaching Plan and Reflection.** Here is your opportunity to synthesize your work on your group project. Please work together to develop one report that includes a description of the activities you taught, all the observation guides that were completed, an individual assessment from each of you of what you learned from the activity, and a summary of your sense of the impact on learners and comments from teachers. Due October 30, provided we can arrange for teaching experiences in time. 8 points on the paper; 7 points from peer evaluation.
8. **EE Proposal.** Writing project proposals is essential to obtain funding to support EE programs. Develop an idea for a project that meets the priorities of an agency that funds EE programs. Use the workbook: Writing an Environmental Education Proposal (online) to guide your work and better understand the assignment. The workbook includes several exercises to help you develop a great proposal and to generate questions. Please bring those questions to class! You can dream up the organization or use a real one. You will write the budget, letters of support, and justification for the program. Submit a 1 page summary of your plans (single spaced) on November 6 for feedback. Submit your final proposal on Dec 4, when you will provide a 3 minute presentation to the class on why your proposal deserves funding and why the program will be successful. 25 points.
9. **Class participation.** Timely and thoughtful contributions in class will earn you points toward participation. We will endeavor to make these in-class discussions integral to your assignments so that everything will flow quite smoothly! 10 points.

## Assigned Readings

### Week 1                      **Introducing EE: History and Goals**

Biedenweg K., Monroe, M.C. and Wojcik, D.J. 2016. Chapter 1, Foundations of Environmental Education, pp 9-28, in Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for*

*Environmental Educators*. Washington DC: NAAEE.  
<http://naaee.net/publications/acrossthespectrum>

**Week 2 Awareness and Knowledge: Experiential Learning**

Jacobson, S., M. McDuff, and M. C. Monroe. 2015. Chapter 2 Learning and Teaching with Adults and Youth. *Conservation Education and Outreach Techniques*. Oxford University Press. pp 35-62.  
Monroe, M.C., E. Andrews, K. Biedenweg. 2007. A Framework for Environmental Education Strategies. *Applied Environmental Education and Communication*. 6(3): 205-216

**Week 3 Skills and Participation: Project-based Learning**

Edwards, H. S. 2015. Leaving tests behind. *TIME Magazine*, 185(5): 28-31. February 16, 2015.  
Schusler, T. M. 2016. Chapter 8, Environmental action and positive youth development, pp 141-163. In Monroe, M. C. and M. E. Krasny (eds.) *Across the spectrum*. Washington DC: NAAEE.  
Jensen, B.B. and K. Schnack. 1997. The action competence approach in environmental education. *Environmental Education Research*, 3(2): 163-178.

**Week 4 NAAEE Guidelines for Excellence**

NAAEE, Guidelines for Excellence: EE Materials and NonFormal Programs. Order or download your own from the National Service Center for Environmental Publications (NSCEP) at <http://www.epa.gov/nscep/>  
171B04001 - Nonformal Environmental Education Programs: Guidelines For Excellence  
171B04003 - Environmental Education Materials Guidelines For Excellence  
Simmons, B., Y. Bhagwanji, and R. Ribe. 2016. Chapter 5, Promoting excellence in environmental education, pp. 85-112. In Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for Environmental Educators*. Washington DC: NAAEE.  
<http://naaee.net/publications/acrossthespectrum>

**Week 5 Logic Model and Program Development**

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapters 1 and 2, and Appendix A.  
Israel, G. 2001. Using Logic Models for Program Development. IFAS Fact Sheet. University of Florida. AEC 360. <http://edis.ifas.ufl.edu/wc041>

**Additional Resources:**

On Logic Models: W.K. Kellogg Foundation 2004. Logic Model Development Guide. Battle Creek MI: Kellogg Foundation. Item #1209 when ordered from 1-800-819-9997. Or download from [www.wkkf.org](http://www.wkkf.org), search for logic model, and click on the pdf symbol  
Website from Univ of Wisconsin, Program Development and Evaluation program on Logic Model <http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html> -- and <http://www.uwex.edu/ces/lmcourse>

**Week 6 Evaluation Plans and Tools**

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapter 3.

**Week 7 Evaluation Tool Development and Data Collection**

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapters 4 and 5.

**Week 8 Plan to Teach and Connection to Nature**

Weilbacher, M. 2009-2010. Last child in the woods, first book in the field. *Green Teacher*. 87:3-8.  
Kuo, Ming, M. Barnes, C. Jordan. 2019. Do experiences with nature promote learning? *Frontiers in Psychology*, 10, Article 305, <https://doi.org/10.3389/fpsyg.2019.00305>

**Week 9 Online Midterm**

**Week 10 Reflect on Teaching and Education for Sustainable Development**

Tilbury, D. 2011. What are commonly accepted learning processes aligned with ESD? Education for Sustainable Development: An expert review of processes and learning. Paris: UNESCO. Pages 19-39. <http://www.iucn.org/?uNewsID=7368>  
Monroe, M.C. 2012. The co-evolution of ESD and EE. *Journal of Education for Sustainable Development*. 6(1): 43-47.

**Week 11-12 Writing Project Proposals**

Monroe, Li, and Oxarart. 2019. Writing an Environmental Education Proposal – On Canvas

**Week 13 Effective EE and Diversity, Equity, Inclusion, and Justice**

Agyeman, J. 2005. Where justice and sustainability meet. *Environment*, 47(6): 10-23  
Louv, Richard. 2019. Outdoors for all. *Sierra*, 104(3): 26-35+ May/June.  
<https://www.sierraclub.org/sierra/2019-3-may-june/feature/outdoors-for-all-nature-is-a-human-right>

**Week 15 Effective EE and Behavior and Backlash**

Poore, Patricia. 1993. EnviroEducation: Is it Science, Civics--or Propaganda? *Garbage*. April-May 1993, 26-31.  
Chawla, L. and D. Cushing. 2007. Education for strategic environmental behavior. *Environmental Education Research* 13(4): 437-452

**Week 16 Present Proposals**

**For More Information**

Ardoin, N. et al. 2013. EE Research Bulletin Issue 4: Winter 2013. The series is online:  
<http://eelinked.naaee.net/n/eeresearch/posts/Research-Bulletins-Help-Bridge-Research-to-Practice-Gap>  
Bennett, Dean B. 1988-89. Four steps to evaluating environmental education learning experiences. *Journal of Environmental Education*. 20:2, 14-21.  
Bitgood, Stephen. 1993. What do we know about school field trips? *What research says about learning in science museums*, # 2. Wash. DC: Assoc Science-Tech Cntrs, 12-16.  
Blanchard, Kathleen A. Seabird conservation on the North Shore of the Gulf of St. Lawrence, Canada: The effects of education on attitudes and behaviour towards a marine resource. In Palmer, J. W. Goldstein, and A. Curnow (eds.) *Planning education to care for the earth*. Gland, Switzerland: IUCN CEC. 39-50.

- Jensen, B.B. and K. Schnack. 1997. The action competence approach in environmental education. *Environmental Education Research*, 3(2): 163-178.
- McDuff, Mallory. 2002. Needs Assessment for Participatory Evaluation of Environmental Education Programs. *AEEC*. 1(1): 25-36.
- Monroe, M. and C. J. Li. 2016. Chapter 6, Evaluation Techniques that Improve Programs, pp 113-126, in Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for Environmental Educators*. Washington DC: NAAEE. <http://naaee.net/publications/acrossthespectrum>
- Munson, Bruce H. 1994. Ecological Misconceptions. *Journal of Environmental Education*. 25(4) 30-34.
- National Research Council, 2009. *Learning Science in Informal Environments*. Chapter 3, Assessment. Washington DC: National Academies of Press. Pages 54-89. Download free pdf - <https://www.nap.edu/catalog/12190/learning-science-in-informal-environments-people-places-and-pursuits>

### **Nature and Children:**

- Weilbacher, M. 2009-2010. Last child in the woods, first book in the field. *Green Teacher*. 87:3-8.
- Gill, T. (2014). "The Benefits of Children's Engagement with Nature: A Systematic Literature Review." *Children, Youth and Environments* 24(2): 10-34. <http://www.jstor.org/action/showPublication?journalCode=chilyoutenvi>.

### **Place-based Education**

- Sobel, D. 2012. Place-based education: Connecting classroom and community. <http://www.antiochne.edu/wp-content/uploads/2012/08/pbexcerpt.pdf>

### **Social Learning**

- Wals, A.E.J., N. van der Hoeven, H. Blanken. 2009. *The acoustics of social learning*. Wageningen: Wageningen Academic Publishers. Pages 5-28. <http://www.ecs.wur.nl/NR/rdoonlyres/E635711D-7B4D-43B6-8FE2-249B95D2349E/92733/acousticsdigital.pdf>
- Schusler, T. M., D. J. Decker, & M. J. Pfeffer. 2003. Social learning for collaborative natural resource management. *Society and natural resources*. 16:4, 309-326.
- Muro, M. and P. Jeffrey. 2008. A critical review of the theory and application of social learning in participatory natural resource management processes. *Journal of environmental planning and management*. 51(3): 325-344.

### **Citizen Science**

- Dickinson, J. L., J. Shirk, D Bonter, R. Bonney, R. L. Crain, J. Martin, T. Phillips, K. Purcell. 2012. The current state of citizen science as a tool for ecological research and public engagement. *Frontiers in Ecology and the Environment*, 10 (6): 291-297.
- Jordan, R. C., H. L. Ballard, T. B Phillips. 2012. Key issues and new approaches for evaluating citizen-science learning outcomes. *Frontiers in ecology*, 10(6): 307-309.