

## **Environmental Education in K-12 Schools**

EDUC 203 (2 credit hours)

Professional Program in Education

University of Wisconsin-Green Bay

Fall Term, 2015

Tuesdays and Thursdays 9:30 am – 10:50 am

Wood Hall, Room 303

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### **A. Course Overview**

According to the course description on the UWGB website, this course discusses: Philosophies, instructional processes and resources for environmental education. Introduction to problem focused, multidisciplinary environmental education theory and practice; examination of ways to apply learning to future teaching roles in and out of the classroom.

This describes the focus of this course.

To receive a license to teach in Wisconsin, an applicant shall complete an approved program and demonstrate proficient performance in the knowledge, skills and dispositions under ten standards. The following are those standards addressed in this course.

#### **1. Teachers know the subjects they are teaching.**

The teacher understands the central concepts, tools of inquiry, and structures of the disciplines she or he teaches and can create learning experiences that make these aspects of subject matter meaningful for pupils.

#### **4. Teachers know how to teach.**

The teacher understands and uses a variety of instructional strategies, including the use of technology, to encourage children's development of critical thinking, problem solving, and performance skills.

#### **7. Teachers are able to plan different kinds of lessons.**

The teacher organizes and plans systematic instruction based upon knowledge of subject matter, pupils, the community, and curriculum goals.

#### **9. Teachers are able to evaluate themselves.**

The teacher is a reflective practitioner who continually evaluates the effects of his or her choices and actions on pupils, parents, professionals in the learning community and others and who actively seeks out opportunities to grow professionally.

## **10. Teachers are connected with other teachers and the community.**

The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support pupil learning and well-being and acts with integrity, fairness and in an ethical manner.

### **B. Resources**

- 1 - Wisconsin's Model Academic Standards for Environmental Education. Found at – <http://dpi.wi.gov/sites/default/files/imce/standards/pdf/envired.pdf>
- 2 - Wisconsin Model Academic Standards. Found at - <http://dpi.wi.gov/standards/>
- 3 - Common Core State Standards - <http://www.corestandards.org/read-the-standards/>
- 4 - Selected texts from the UWGB library
- 5 - Internet-based resources
- 6 - Handouts will be distributed throughout the term

### **C. Topics**

Environmental Education Standards  
 Using games as a teaching strategy  
 Using field trips as a teaching strategy  
 Project WILD  
 Recycling / Reducing / Reusing / Refusing / Repairing  
 Socio-scientific argumentation  
 Water quality  
 Food webs

### **D. Evaluation**

Students are expected to attend all class sessions in the courses in which they are enrolled. Since learning the concepts associated with this course is highly dependent upon your participation in course activities, missing class more than once may lower your course grade.

You will be evaluated based on your contributions to class discussions, written assignments, and participation. Written assignments will center on specific objectives and be evaluated based on the following:

#### Criteria

Content  
 Comprehensiveness  
 Evidence of critical analysis  
 Criteria for the assignment have been met  
 Quality of writing – grammar, spelling, etc.

Each of these criteria will be assessed on a 4-point rubric:

- 4 – Displays exemplary quality
- 3 – Displays very good quality
- 2 – Displays average quality
- 1 – Displays poor quality
- 0 – Incomplete

During this course, there will be six assignments. Points will be deducted from assignments submitted after the due date and time.

Required Assignments

- Assignment 1: Environmental Education Standards (20 pts)
- Assignment 2: Field Trips as a Teaching Strategy (20 pts)
- Assignment 3: Project WILD (10 pts)
- Assignment 4: Socio-scientific argumentation based on an environmental issue (30 pts)
- Assignment 5: Environmental Games (40 pts)
- Assignment 6: Course Notebook (30 pts)

<u>Grade</u>	<u>Percentage</u>	<u>Points</u>
A	93-100%	139-150
AB	88-92%	132-138
B	83-87%	124-131
BC	78-82%	117-123
C	73-77%	109-116
CD	68-72%	102-108
D	60-67%	90-101
F	< 60%	0-89

**E. Of Special Note...**

- Students are responsible for checking their UW-Green Bay email regularly for course-related messages.
- Incomplete grades will be assigned only for reasons stated in the UWGB Student Handbook.
- University and department policies for religious observance, academic misconduct, complaint, grade appeal, and sexual harassment will be followed.

**F. Notice to students with a disability**

Students possessing a disability which requires the attention and consideration of the instructor should inform me in writing after the first class session. This document should include suggestions of what is needed to accommodate this need. Students should be working with the staff at the Disability Services office in the Student Services building, (SS 1500, 465-2841).

**G. Mission/Vision Statement of the UWGB Professional Program in Education**

The Professional Program in Education seeks to inspire and prepare future educators by cultivating knowledge, skills, and dispositions to improve the learning of students, nurturing a profound respect for the dignity and diversity of all learners, and guiding the development of critical thinking, reflective practice, and decision-making based on data. In keeping with this mission, the following integrated themes are evident in this course:

- A commitment to effective communication and ethical decision making
- Proficiency through performance based assessment
- Environments that promote inquiry as the basis for authentic learning
- The integration of technology
- A strong focus on content and pedagogy
- Clearly identified standards for practice and performance
- A shared vision of teaching excellence

### Tentative Schedule: EDUC 203 (Fall 2015)

Tuesdays	Thursdays
	9/3 Course introduction
9/8 Field trips as a teaching strategy; Environmental Education Standards (Meet in IS 1129A)	9/10 Newspaper activity
9/15 Environmental Games	9/17 Field Trip: Goodwill East store
9/22 MSD video; Socio-scientific argumentation	9/24 Field Trip: Green Bay Metropolitan Sewerage District
9/29 Video: <i>An Inconvenient Truth</i>	10/1 Video: <i>An Inconvenient Truth</i>
10/6 Water Quality Activity	10/8 Owl Pellet Activity
10/13 Finish owl pellet; Two sides of Environmental Education	10/15 Guest Speaker: Recycling Center
10/20 Environmental Games; Course evaluations	

Saturday, September 26      9:00-3:30  
 Project WILD training  
 Bay Beach Wildlife Sanctuary  
 \$35 for the books and the training  
 Bring your own lunch  
 Wear comfortable clothes and shoes  
 Both indoor and outdoor activities

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## **Assignment 1: Getting to Know the Standards**

20 points

Due Tuesday, September 15 at classtime

This assignment can be e-mailed as an attachment to ashmanns@uwgb.edu

*Wisconsin's Model Academic Standards for Environmental Education* are used as a resource for planning environmental activities in K-12 classrooms. These standards are connected to other standards such as those for science, language arts, social studies, and mathematics. For our purposes, an important first step is to become familiar with the content and organization of this document.

### **Part A: Becoming Acquainted**

Scan each of the following documents, noting the content and organization of the standards.

Wisconsin's environmental education standards -

<http://www.standards.dpi.wi.gov/files/standards/pdf/envired.pdf>

Wisconsin's Model Academic Standards - <http://dpi.wi.gov/standards/>

Common Core State Standards - <http://www.corestandards.org/read-the-standards/>

### **Phase I**

#### **Part B: Environmental Education Standard**

Select a performance standard from one of the environmental education standards that applies to the grade level you would like to teach.

- 1.) Write the standard, including its identification number. [1pt]
- 2.) Describe the concepts/ideas/topics that would be included in the teaching of this standard. [2pts]

#### **Part C: Model Academic Standard**

Select a performance standard from one of the Model Academic Standards for Science or Social Studies that applies to the grade level or subject matter you would like to teach.

- 3.) Write the standard, including its identification number. [1pt]
- 4.) Describe the concepts/ideas/topics that would be included in the teaching of this standard. [2pts]

#### **Part D: Making a Connection**

- 5.) Write a description of an environmental activity you could do with your students that would address both of your selected standards in Phase I. Suggested length: at least 125 words [4pts]

**Phase II****Part E: Environmental Education Standard**

Select a second performance standard from one of the environmental education standards that applies to the grade level you would like to teach.

- 6.) Write the standard, including its identification number. [1pt]
- 7.) Describe the concepts/ideas/topics that would be included in the teaching of this standard. [2pts]

**Part F: Common Core State Standard**

Select a performance standard from one of the Common Core State Standards for Mathematics or Literacy that applies to the grade level or subject matter you would like to teach.

- 8.) Write the standard, including its identification number. [1pt]
- 9.) Describe the concepts/ideas/topics that would be included in the teaching of this standard. [2pts]

**Part G: Making a Connection**

- 10.) Write a description of an environmental activity you could do with your students that would address both of your selected standards in Phase II. Suggested length: at least 125 words [4pts]

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## **Assignment 2: Field Trips as a Teaching Strategy**

20 points

Due by Tuesday, October 6 at classtime

You can e-mail this assignment as an attachment to [ashmanns@uwgb.edu](mailto:ashmanns@uwgb.edu)

This semester we will participate in three field trips: the Bay Beach Wildlife Sanctuary, Goodwill East store, and the Green Bay Metropolitan Sewerage District. Many classroom teachers utilize field trips as part of their curriculum. Sometimes the field trip is nothing more than a “day-off” from regular classroom work while other times the field trip is nicely integrated into the curriculum. This integration allows students to make important conceptual connections between the big ideas they are learning about in the classroom and real-world applications of these ideas.

For this assignment:

Choose one of the field trips we participate in this semester.

1. Select a grade level and subject matter. (2 points)
2. Describe an *important concept or idea* from that subject matter and how you would use the field trip to help students better understand that concept or idea. (6 points)

Visit the website for your chosen field trip –

Bay Beach Wildlife Sanctuary <http://www.baybeachwildlife.com/>

Goodwill East store <http://www.goodwillncw.org/communities/greenbay/east/>

Green Bay Metropolitan Sewerage District <http://www.newwater.us/>

3. Describe in detail how you would use information from the website to connect to the concept or idea described in question 2 and to what was learned during your chosen field trip. (6 points)
4. Relate your descriptions from questions 2 and 3 to the most appropriate standard from *Wisconsin's Environmental Education Standards*. Describe why you chose this standard. (3 points)
5. Describe an accommodation you would make while at the field trip site for two students in your class who have a diagnosed attention deficit disorder. (3 points)

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### **Assignment 3: Project WILD**

10 points

Due Thursday, October 1 at classtime

(You can e-mail your paper before the due date and time to ashmanns@uwgb.edu)

Project WILD is an interdisciplinary conservation and environmental education program emphasizing wildlife. The goal of Project WILD is to assist students of any age in developing awareness, knowledge, skills, and commitment to result in informed decisions, responsible behavior, and constructive actions concerning wildlife and the environment.

After participating in our one-day training, complete the following by choosing one of the Project WILD activities that was NOT addressed during our session together:

#### **Part A**

Write the title and a brief (one paragraph) description of your chosen activity.  
(You can earn up to 1 point for this description.)

#### **Part B**

What are the one or two standards from *Wisconsin's Model Academic Standards for Environmental Education* that your chosen activity is most closely connected to? Explain these connections.

(You can earn up to 2 points by adequately explaining your connections.)

#### **Part C**

Describe the ways in which at least four different subject matters could play a role in your chosen activity (e.g., science, mathematics, social studies, language arts, fine arts, physical education, a foreign language).

(You can earn up to 5 points for this description.)

#### **Part D**

There is one student in your class who has a hearing impairment. How could your chosen activity be adapted to meet the needs of this student?

(You can earn up to 2 points for this description.)

Suggested length for this assignment: at least 400 words

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### Assignment 4: Socioscientific Argumentation

30 points

Due by Wednesday, October 28 at 5:00pm

You can e-mail this assignment as an attachment to ashmanns@uwgb.edu

This term we have been discussing argumentation as a means for providing justification for a particular viewpoint. There are several forms of argumentation. We have focused on the following:

- Making a claim (Thesis statement)
- Providing relevant reasons
- Citing corresponding evidence from valid and reliable sources
- Considering counterarguments and a response
- Stating the assumptions upon which the argument is made

We will now apply our understanding of this framework of making an argument to a socio-scientific issue.

**Part A:** Choose one of the two possible thesis statements –

- The decrease in the monarch butterfly population is a problem more people should know about, and we (all of us) need to do something.
- The dead zone in the Bay of Green Bay is a problem more people should know about, and we (all of us) need to do something.

**Part B:** Create an argument using compelling reasons based on valid evidence from reliable sources. You should have at least three reasons. The first two should focus on “What’s the problem?” and the third should focus on “What should we do about it?”

*Grading: Up to two points for describing a compelling reason and up to four points for the evidence and sources. Total of six points per segment x three segments = 18 possible points*

**Part C:** Describe a common counter-argument a critic could make about your argument. What would be your response to this counter-argument?

*Grading: Up to two points for the description of a common counter-argument and up to four points for a well-crafted response. 6 possible points*

**Part D:** Describe at least one assumption upon which your argument is based. Explain why you think this assumption applies to your argument.

*Grading: Up to two points for the description of the assumption and up to four points for the explanation. 6 possible points.*

Sources to get you started:

Monarch butterflies - <http://www.monarchwatch.org/>

Dead zone in the Bay – Google search “dead zone in Green Bay”

Be convincing!

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## **Assignment 5: Environmental Games**

40 points

Due at classtime on Tuesday, October 20

Games related to the environment have been a part of school curricula for decades. Since the environment contains many variables and is related to many scientific and social concepts, it is a rich area in which to develop a game.

For this assignment, you are asked to develop your own game related to the environment.

There are two purposes for this assignment:

- To learn more about games as a teaching strategy
- To learn more about one element of the environment, such as food webs, rain forest, farming versus urban development, a particular environmental policy or law, a period of history surrounding an environmental topic, recycling, clouds, groundwater, global climate change, any animal, any plant, any ecosystem (desert, forest, grassland, etc.), acid rain, and the list goes on and on. Almost any environmental topic from the top of the atmosphere to below Earth's surface will work.

Directions:

1. Select a topic and grade level
2. Learn more about that topic using the Cofrin Library, Internet, textbooks, etc.
3. Create rules for a game and gather/create the resources needed to play the game
4. You will direct the playing of your game in class on Tuesday, October 20.

Points:

Up to 20 points for developing a "Directions" sheet for the game and the game itself. The game should be well organized, neat, clear, etc. Higher scores are earned for type-written text versus hand-written text; using card stock or laminated papers versus plain paper, etc.

Up to 10 points based on feedback from your group members concerning your game.

Up to 10 points for the "Creativity" of your game. These points can be earned if your game does not just follow rules for an established game like *Trivial Pursuit*, *Jeopardy*, *Go Fish*, etc.

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**Assignment 6: Course Notebook**

**This assignment is worth up to 30 points.**

**For each day we have class (including the days we have field trips), you should have a notebook entry.**

**This entry should include:**

- **Date and Topic**
- **Things you think are important to write down**
- **Today's class made me think about...**
- **One question that today's topic made me think of is...**

**Notebooks will be submitted at the end of class on Thursday, October 15.**

**Graded notebooks will be returned on Tuesday, October 20.**