

Course Name: Forest as Classroom

Course Number: FES 430/530

Term: Fall 2022

Credits: 4

Instructor name: Dave Stemper

Instructor email: stemperd@oregonstate.edu

Instructor phone: 503-828-6347



Course Description

Forest as Classroom investigates instructional methods used to teach K-12 students about natural resources. The course reveals how forest exploration can be used as a means to teach others about science, ecology, mathematics, social science, and history. It provides an opportunity for future teachers, naturalists, interpreters, and scientists to improve their teaching and communication skills.

Course Overview

Forest as Classroom is designed for those preparing for careers in formal or informal education, and who are interested in teaching others about natural resources. The course centers on how to use forest exploration as a means of teaching others about science, ecology, mathematics, social science, and history. Through examination of tree growth and morphology, forest ecology, and forest management issues, students not only learn about forest resources, they discover interdisciplinary methods used to teach others about science, math, and other fields.

As the course proceeds, students investigate fundamentals of curricular design, and explore natural resource lessons and activities currently in use. Content explores how people learn at different stages of development, and the value of recognizing different learning styles when crafting activities. Students discover some strategies employed by educators as they strive to teach youth about natural resources, and some resources intended to make that task easier.

Integrating teaching strategies into environmental exploration allows for more effective communication about ecological concepts. For students who envision themselves as classroom teachers, naturalists, interpreters, or scientists, the course provides opportunities to develop and improve teaching skills.

Required Course Resources (Reading Materials)

- Sobel, D. (2008). *Childhood and Nature: Design Principles for Educators*. Portland, ME: Stenhouse Publishing.

Some course content will be delivered via streaming media on the FES 430/530 Canvas site. Other required & supplemental readings, referenced on the course schedule, will be made available via the FES 430/530 Canvas site as well.

Note to Students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (<http://osubeaverstore.com/Academics> or 1-800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Course Credits

This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits. This includes and assumes time you spend interacting with course materials.

Canvas

This course is delivered via Canvas, where you interact with classmates and your instructor. Within the course Canvas site, you will access course materials such as the syllabus, online reading materials & links, class discussions, presentations, projects, and quizzes. To preview how an online course works, visit the [Ecampus Course Demo](#). For technical assistance, please visit [Ecampus Technical Help](#).

Technical Assistance

If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Information Services (IS) Help Desk for assistance. You can call (541) 737-8787 or visit IS Service Desk online at <http://is.oregonstate.edu/service-desk> (the main IS website contains an online email form).

Measurable Student Learning Outcomes (FES 430/530)

Having successfully completed this course, you will be able to:

1. Describe observable characteristics of forest ecosystems, to include indicators of present and past forest use
2. Identify various forest measurement tools, and demonstrate their use and application
3. Explain how trees and other physical components of forests can be used to teach about math, biology, and social science
4. Calculate tree height, diameter, and age using both forestry tools and common household tools
5. Apply learning theory and curriculum development principles to the creation of K-12 classroom activities
6. Create lessons, projects, assignments, and assessments using the 'Backward Design' curriculum development process
7. Assess K-12 lessons and activities created by peers
8. Modify lessons, projects, and activities based on feedback obtained from peers
9. Justify the merit of curricular activities with respect to 'Next Generation' science standards
10. Communicate effectively in writing

This course is offered through Oregon State University Extended Campus. For more information, contact:
Web: ecampus.oregonstate.edu Email: ecampus@oregonstate.edu Tel: 800-667-1465

Evaluation of Student Performance

In this course, your understanding will be assessed via written assignments, demonstrative video, midterm exam, Canvas discussion participation, and a capstone curriculum design project. In addition, students taking the graduate version of the course (FES 530) are asked to complete a separate curriculum assessment project.

Regarding Discussions: When participating in Canvas discussions, your contribution should reflect comprehension of content from assigned readings and presentations. As such, you need to keep up with reading assignments and other assigned tasks. *Be an active and prepared participant in class discussions!*

What you get out of this course will depend upon what you put into it. This course is rich in content, yet the actual learning is up to you. Furthermore, keep in mind the course schedule is subject to slight modification as the course proceeds. You will be notified of any such changes via course announcement.

Grades in FES 430 (undergraduates) are based on completion of assignments summarized below.

Point System (FES 430):

Exploring a Local Forest	10
Demonstrative Video	15
Lesson Design Project	20
Midterm Exam	50
Curriculum Project (Capstone)	80
Canvas Discussions	40
Total	215

GRADUATE STUDENT Expectations and Additional Learning Outcomes (FES 530)

To meet requirements in FES 530, graduate students are asked to augment the 'lesson design' and 'curriculum design' projects, and complete a separate 'curriculum assessment' project. The additional expectations reflect the idea that as educators, graduate students will model and facilitate effective instruction that is based on established learning theory and curriculum design principles.

Students enrolled in FES 530 will:

1. Design learning activities that use forest settings as a backdrop for teaching science, math, and social science concepts.
2. Construct learning units that integrate key learning theory and curriculum design principles.
3. Develop a critical analysis for theories applied to learners.
4. Assess activities within the context of suggested grade level and stage of cognitive development.
5. Compare and contrast the strengths and weaknesses of established natural resource education curricula, within the context of their ability to accommodate Next Generation Science Standards.

Point System for Graduate Students (FES 530):

Exploring a Local Forest	10
Demonstrative Video	15
Lesson Design Project	20
Midterm Exam	50
Curriculum Project (Capstone)	80
Canvas Discussions	40
Curriculum Assessment	40
Total	255

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Summary of FES 530 Curriculum Assessment Project:

Curriculum Assessment Project (Graduate Students only; 40 Points):

Graduate students enrolled in FES 530 will complete an additional 40-point curriculum assessment project. They will work independently (or as a team if preferred) to evaluate one or more lesson plans within an established natural resource curriculum (e.g. *Project WET*, *Project Learning Tree*, and *Think Earth*). Once a graduate student has identified a curriculum, the assessment will be carried out within the context of stated goals, learning outcomes, sequence of activities, suggested assessments, and alignment of activities with Next Generation Science Standards.

As part of the assessment, students will suggest modifications to curricular activities, justified within the context of learning theory, design principles, and Next Generation Science Standards. Finally, to further justify their recommendations, graduate students are asked to seek out relevant journal articles. Further details on this assignment will be provided via the Canvas site.

Grading Scale (undergraduate and graduate students)

Letter Grade	Percent of Total Points				
A	>94%	C+	77-79%	D-	60-63%
A-	90-94%	C	74-76%	F	<60%
B+	87-89%	C-	70-73%		
B	84-86%	D+	67-69%		
B-	80-83%	D	64-66%		

Course Content

Week	Topics & Activities	Reading
Week 1 (<i>Extended:</i> September 21 – October 2)	Course Introduction Forestry Primer; Introduction to Forest Ecosystems <u>Writing Piece 1: Exploring your local forest (due 10/09)</u>	Sobel; <i>Childhood and Nature: Design Principles for Educators, chapters 1 & 2</i>
Week 2 (October 3-9)	Stages of Cognitive Development; Learning Styles <i>Using Forests to Teach about Math</i>	Sobel, Chapter 3 Measuring Tree Age Cognitive Development in Childhood
Week 3 (October 10-16)	'Backward Design' Curriculum Design Model <i>Using Forests to Teach about Math, continued...</i> <u>Assignment: Design a Math or Science Lesson (due 10/30)</u>	McTighe & Wiggins; <i>Understanding by Design, Chapter 1</i>

Week 4 (October 17-23)	<i>Using Forests to Teach about Science</i> <u>Capstone Project: Curriculum Design (due 12/02)</u> <u>Graduate Project (FES 530 only): Curriculum Assessment (due 12/04)</u>	<i>Understanding by Design Framework</i>
Week 5 (October 24-30)	Tree Biology & Wood Science <i>Using Forests to Teach about Science, continued...</i>	Sobel, Chapter 4 & 11
Week 6 (October 31 – November 6: Boo!)	Reading the Forested Landscape: <i>Nature Journaling & Observation</i> Midterm Exam	Reading on <i>Nature Journaling</i> provided in Canvas site
Week 7 (November 7-13)	<i>Project Learning Tree & Project WET</i> <i>Using Forests to Teach about Social Science</i>	Smithsonian Institution: <i>Introduction to the Nature Journal</i>
Week 8 (November 14-20)	<i>Using Forests to Teach about Social Science, continued...</i> Aligning Activities with 'Next Generation Science Standards'	National Science Teachers Association: <i>Next Generation Science Standards</i>
Week 9 (November 21-27)	Fire Ecology & Behavior; Tillamook Burn <i>Using Forests to Teach about History</i>	
Week 10 (November 28 – December 4)	<i>Using Forests to Teach about History, continued...</i> Students Share Their Curriculum (report uploaded to assignment page; video to Canvas 'Discussions' area)	
Finals Week	Peer Review / Assessment of Curriculum Projects	

Course Policies

Makeup Exams

If unable to take the midterm exam, you must contact your instructor **ahead of time**. Makeup exams will only be allowed in this case. Excused absences **will not** be given due to travel or routine illness (e.g. flu).

Late Assignments

All assignments are to be completed and uploaded to the course Canvas site by their due date. Failure to do so will result in a 20% point reduction for that particular assignment. Late assignments will not be accepted more than 3 days beyond their due date.

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Incompletes

Incomplete (I) grades will be granted only in emergency cases (e.g. death in family, major illness/injury, birth of your child), and if the student has earned at least 70% of the points possible (i.e. everything but the final project). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let your instructor know as soon as possible.

Reach Out for Success – University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at oregonstate.edu/ReachOut. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255)

Diversity, Equity and Inclusion – The need for direct, active and honest attention to equity, inclusivity and diversity is as urgent today as ever. Our world faces social, economic and environmental challenges of unprecedented complexity and scale. The College of Forestry is committed to addressing those challenges in the realm of forestry and natural resource management - whether it be through education, research or public engagement. We intend to draw fully and inclusively on the power and force of human imagination, experience and creativity to meet the needs of today's world.

Contacting the instructor

If you have questions related to course content or assignments, please contact your instructor using the email address and/or phone number provided on page one. Don't be discouraged if you don't receive an immediate reply. I will try my best to return your email or phone call within 24-36 hours.

Communication

Ground Rules for Productive Online Communication & Participation:

- **Online threaded discussions** are public messages, and all writings in this area will be viewable by the entire class or assigned group members. It is expected that each student will participate in a mature and respectful fashion. If you prefer that only the instructor sees your communication, send it to me by email, and be sure to identify yourself and the class.
- **Posting of personal contact information** is discouraged (e.g. telephone numbers, address, personal website address).
- **Pay close attention** to what your classmates write in their online comments. Ask clarifying questions, when appropriate. These questions are meant to probe and shed new light, not to minimize or devalue comments. Reread your comments before you post them.
- **Disagree with ideas, but do not make personal attacks.** Do not make sexist, racist, homophobic, or victim-blaming comments. These will not be tolerated.
- **Online Instructor Response Policy:** I will check email frequently, and respond to course-related questions within 24-36 hours.
- **Observation of "Netiquette":** All your online communications need to be composed with fairness, honesty and tact. Spelling and grammar are very important in an online course. What you put into an online course reflects on your level of professionalism. Here is a reference that discusses online etiquette:
 - netiquette: <http://www.albion.com/netiquette/corerules.html>.

- Please check the Announcements area and the course syllabus before asking general course "housekeeping" questions (*i.e. how do I submit assignment 3?*). If you still cannot find an answer after doing so, then please contact me.

Statement Regarding Students with Disabilities

Accommodations are collaborative efforts between students, faculty, and [Disability Access Services \(DAS\)](#). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact [Disability Access Services \(DAS\)](#). Canvas, the learning management system through which this course is offered, provides a [vendor statement](#) certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the [Office of Student Conduct and Community Standards](#).

Academic Integrity

Students are expected to comply with regulations pertaining to academic honesty. For information, visit [Avoiding Academic Dishonesty](#), or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

A) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

B) It includes:

(i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

(ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

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(iv) TAMPERING - altering or interfering with evaluation instruments or documents.

(v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

C) Academic Dishonesty cases are handled first by academic units, following a process outlined in the University's Academic Dishonesty Report Form, and then referred to SCCS for action under these rules.

Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the [university's regulations regarding civility](#).

Tutoring

[NetTutor](#) is a provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the NetTutor button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online *Student Evaluation of Teaching* form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to 'Student Online Services' to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.