

Term Information

Effective Term Summer 2015
[Previous Value](#) Summer 2012

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Change in course components as well as an addition of an online version of the course

What is the rationale for the proposed change(s)?

Recitations were carried forward from quarters, not being offered in semesters. Online version will reach a wider audience of students interested in environmental science.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

n/a

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area Environment & Natural Resource
Fiscal Unit/Academic Org Sch of Enviro&Natural Res - D1173
College/Academic Group Food, Agric & Environ Science
Level/Career Undergraduate
Course Number/Catalog 2100
Course Title Introduction to Environmental Science
Transcript Abbreviation Intro Envrnmntl Sc
Course Description Introduction to environmental science, the ecological foundation of environmental systems, the ecological impacts of environmental degradation by humans, and strategies for sustainable management of environment and natural resources.
Au, Sp, Su Sems.
[Previous Value](#) *Introduction to environmental science, the ecological foundation of environmental systems, the ecological impacts of environmental degradation by humans, and strategies for sustainable management of environment and natural resources.
Au, Sp Sems.*
Semester Credit Hours/Units Fixed: 3

Offering Information

Length Of Course 14 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? Yes
Is any section of the course offered 100% at a distance
[Previous Value](#) No
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
[Previous Value](#) Recitation, Lecture

Grade Roster Component	Lecture
Credit Available by Exam	Yes
Previous Value	No
Exam Type	Advanced Placement Program, EM Tests via Office of Testing
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus, Lima, Mansfield, Marion, Wooster

Prerequisites and Exclusions

Prerequisites/Corequisites	
Exclusions	Not open to students with credit for 201.

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	03.0101
Subsidy Level	General Studies Course
Intended Rank	Freshman, Sophomore, Junior, Senior

Quarters to Semesters

Quarters to Semesters	Semester equivalent of a quarter course (e.g., a 5 credit hour course under quarters which becomes a 3 credit hour course under semesters)
List the number and title of current course being converted	ENR 201: Introduction to Environmental Science.

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors
General Education course:
Biological Science

Course Details

Course goals or learning objectives/outcomes	<ul style="list-style-type: none">• Understand the basic facts, principles, theories, and methods of modern science• Learn key events in the history of science• Gain an understanding of the inter-dependence of scientific and technological developments• Explore social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world
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COURSE CHANGE REQUEST
2100 - Status: PENDING

Last Updated: Neal,Steven Michael
01/29/2015

Content Topic List

- Impact of global energy and climate on distribution of biomes and ecosystems
- Energy flow and materials cycles in ecosystems
- Population and community dynamics
- Biodiversity
- Environmental issues: climate change, clean water, human population, and land degradation

Attachments

- ENR2100 Su15 Syllabus (2).doc: ENR 2100
(Syllabus. Owner: Johnston,Renee L)
- Response to Committee's Concerns.doc: ENR 2100
(Other Supporting Documentation. Owner: Johnston,Renee L)

Comments

- Additional documentation for ASC committee review. *(by Johnston,Renee L on 01/28/2015 08:55 AM)*
- See 1-15-15 e-mail to R. Johnston. *(by Vankeerbergen,Bernadette Chantal on 01/15/2015 05:21 PM)*
- Please make changes to the syllabus requested by COAA. *(by Neal,Steven Michael on 11/26/2014 03:15 PM)*
- AT the request of the department *(by Pfister,Jill Ann on 11/12/2014 02:17 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Johnston,Renee L	04/18/2012 11:13 AM	Submitted for Approval
Revision Requested	Pfister,Jill Ann	11/12/2014 02:17 PM	Unit Approval
Submitted	Johnston,Renee L	11/16/2014 07:39 PM	Submitted for Approval
Revision Requested	Neal,Steven Michael	11/26/2014 03:15 PM	Unit Approval
Submitted	Johnston,Renee L	12/12/2014 09:34 AM	Submitted for Approval
Approved	Neal,Steven Michael	12/12/2014 10:34 AM	Unit Approval
Approved	Neal,Steven Michael	12/12/2014 10:34 AM	SubCollege Approval
Approved	Neal,Steven Michael	12/12/2014 10:35 AM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	01/15/2015 05:21 PM	ASCCAO Approval
Submitted	Johnston,Renee L	01/28/2015 08:55 AM	Submitted for Approval
Approved	Neal,Steven Michael	01/29/2015 11:29 AM	Unit Approval
Approved	Neal,Steven Michael	01/29/2015 11:30 AM	SubCollege Approval
Approved	Neal,Steven Michael	01/29/2015 11:30 AM	College Approval
Pending Approval	Nolen,Dawn Vankeerbergen,Bernadette Chantal Hanlin,Deborah Kay Jenkins,Mary Ellen Bigler Hogle,Danielle Nicole	01/29/2015 11:30 AM	ASCCAO Approval

**ENR 2100 – INTRODUCTION TO ENVIRONMENTAL SCIENCE
THE OHIO STATE UNIVERSITY, SUMMER SEMESTER 2015 (Su15)
GE Natural Science: Biological Science Class (3 credits)**

Course Delivery

This is a completely on-line course that will utilize multiple platforms supported by OSU. Course content, including lecture presentations and videos, will be delivered using three platforms: (1) Carmen, (2) Apple iTunes U and (3) U.OSU.EDU. Students should select ONE of these three platforms to use throughout the semester to download class content. The course material is the same for all three platforms. Carmen will be used to complete all quizzes, exams, and other assignments. This course is self-paced yet all course requirements must be completed during the semester of offering.

Professor

Dr. Brian H. Lower, Ph.D.

Grading (% of final grade)

Midterm Exam (25%)
Final Exam (25%)
Poster (25%)
Quizzes (25%, drop lowest quiz)

Textbook (Required)

Scientific American
Environmental Science for a
Changing World (2014) by
Houtman, Karr, & Interlandi.
Published by W.H. Freeman

Teaching Associate

Ms. Kylie Clark, M.S.

Email

Lower.30@osu.edu

Apple iTunes U

<https://itunes.apple.com/us/course/intro-environmental-science/id601450178>

Office Hours

Announced on Carmen and
Twitter. Virtual office hours held
using Skype: [OSUEnViRo](#)

Twitter

[@OSUEnVirO](#)

U.OSU.EDU

<https://go.osu.edu/enr2100>

Date	Topics: lecture topics subject to change, exact dates of quizzes & exams will be announced on Carmen.	Textbook Chapters or Directions
Week 1	Introduction, syllabus, metric system, graphs, statistics	Appendix 1,2,3
Week 2	Environmental literacy, Scientific process, ozone and Antarctica, ecocentrism, EPA, risk assessment, scientific journals, peer review	1,2
May 25	Memorial Day – Offices Closed	
Week 3	DDT, PCB, CFCs, BPA, bioaccumulation, biomagnification, runoff pollution, Puget Sound, Chesapeake Bay, toxicology, epidemiology, Human population growth, carrying capacity, ecological footprint, food production, waste, ecosystems, biosphere, biomes, species, biodiversity, evolution, saving the rainforest	3,5
May 29	POSTER TITLE, ABSTRACT AND 10 REFERENCES ARE DUE (15% of your Poster Grade)	Due on-line
Week 4	Biomes, tolerance for life, energy flow, biogeochemical cycles, saving the elephants, population ecology, predator-prey, Yellowstone National Park	7,8
Week 5	Community ecology, food webs, ecological succession, freshwater resources, water and food production	9,17
June 12	FIRST DRAFT OF YOUR POSTER IS DUE (15% of your Poster Grade)	Due on-line
Week 6	Environmental cost of coal, carbon sequestration, greenhouse effect, climate change Nuclear Power, radioactive decay, waste storage, nuclear fission, review for exam	23, 27
June 18	MIDTERM EXAM (Covers lectures from Week 1 – Week 6)	Take exam on-line using CARMEN
Week 7	Water pollution, eutrophic, runoff, Pebble Mine, agriculture, U.S. Clean Water Act, agriculture and urban runoff, nonpoint source pollution	18,19,21,22
Week 8	Continue water resources, Superfund Sites, water recycling, fisheries and aquaculture, marine ecosystems, coral reefs	15,16
July 2	POSTER PEER REVIEWS ARE DUE (20% of your Poster Grade)	Due on-line
July 3	Independence Day – Offices Closed	
Week 9	Air pollution, acid rain, NO _x , SO ₂ , particulate, asbestos, Pb, Hg, ozone, CO	25
Week 10	U.S. Clean Air Act, coal ash waste ponds, heavy metal waste	23

Week 11	Environmental cost of petroleum, oil and tar sands, biofuel, catch up day, directions for poster symposium	24,29
July 23	POSTER SYMPOSIUM (On-line; 50% of your Poster Grade)	Virtual Symposium on-line
Week 12	Climate change, Milankovich cycles, greenhouse gases, alternative and renewable energy, hydrogen, solar, geothermal, biofuel	26,28,29
August 3-5	FINAL EXAM (Cumulative; covers material from Week 1 – Week 12)	Take exam on-line using CARMEN

**Every attempt has been made to ensure that the information in the syllabus is complete and accurate. However, mistakes such as typographical errors may occur on occasion. Professor Lower will address any errors on this syllabus during the semester. The schedule shown above is tentative and will likely change throughout the semester depending on how quickly or slowly we cover the material in class.*

Textbook (recommended resource; read the assigned textbook chapters)

Environmental Science for a Changing World, 1st Edition (2013) or 2nd Edition (2014), by Houtman, Karr, and Interlandi, published by W.H. Freeman. This textbook is available in two different formats: paperback (~\$100) or e-Book (\$50-\$75). The material in the 1st and 2nd editions of this textbook is very similar, however, some chapter numbers are different in these two editions.

To purchase the textbook visit one of the following sites:

1. Go to <http://www.coursesmart.com> and type in **Houtman** in the Search box at the top of the page. Our textbook will appear and you can purchase an eBook for about \$75 for a 180-day rental.
2. Or you can purchase or rent the textbook from www.Amazon.com or another retail site.

Some exam questions will be taken from the assigned readings of this textbook or additional class assignments. I will not have time to lecture on every topic that is assigned from the textbook. However, you should read and understand the assigned pages whether I have time to present them during lecture or not.

Final Grade

Your final grade will be based on 1 midterm exam, 1 final exam, 1 scientific poster, and several weekly quizzes. See the syllabus above for % of each component.

Exams taken on CARMEN

Examinations may consist of true/false, multiple choice, short answer, and essay questions. **All exams will be taken on-line using CARMEN.** You will NOT come to a classroom to take the exam. Rather, you take the exam from a location of your choosing that has Internet connection (e.g., dorm room, library). A significant number of exam questions will come from material presented in lecture videos and from the textbook. Additional material will be drawn from the textbook, assigned readings and videos. Each student must complete the exam on her or his own. You are NOT permitted to receive assistance from anyone else during the exam. You are NOT permitted to take the exams as part of a group. You ARE permitted to use your own notes and slides during the exam. Additional details will be provided during the semester.

There are **NO** make-up exams except for valid reasons (e.g., medical excuse). *If you are sick, you MUST have a note signed by your medical doctor (i.e. a licensed physician) and **dated the same day as the exam.*** Otherwise, you will receive a zero on the exam. **Dr. Lower will determine if your excuse is valid. If you do NOT have a reasonable excuse for missing an exam then you will receive a ZERO for the exam.** Approved make-up exams will consist of multiple choice, short-answer and essay questions.

Quizzes taken on CARMEN

Approximately one quiz will be given every week. Quizzes will be announced on Carmen. Many of these questions will be based on assigned readings and videos. **You will take these quizzes online using Carmen.** Your lowest quiz grade (or the one quiz that you forget to take) will be dropped.

Scientific Poster Presentation (details will be provided during the first two weeks of class)

You will design, construct, and present a scientific poster to your classmates. First, you must pick a topic related to environmental science. Next, you should read at least 10 articles from well-respected sources (see example list below or **use any of the sources that @OSUEnViRo is currently following on Twitter**), which are related to this topic. After reading these articles, you will design and construct a poster describing the topic. Details will be provided during the semester. You will present your poster to your classmates through a virtual poster session. Details will be provided throughout the semester.

Journals: Biological Conservation, Chemical & Engineering News, Ecology, Environmental Science & Technology, Proceedings of the National Academy of Sciences USA, Science, Nature.

Newspapers: BBC, New York Times, Washington Post, Chicago Tribune, Columbus Dispatch, NPR.

Grade Scale

A	93.00 to 100.00	A-	90.00 to 92.99		
B+	87.00 to 89.99	B	83.00 to 86.99	B-	80.00 to 82.99
C+	77.00 to 79.99	C	73.00 to 76.99	C-	70.00 to 72.99
D+	67.00 to 69.99	D	60.00 to 66.99		
E	0.00 to 59.99				

Delivery of Course Material to Students

Because each student has different preferences, we have decided to deliver class material (e.g., lectures, videos, syllabus, notes, etc.) to students using three different platforms: Carmen, Apple iTunes U, U.OSU.EDU. **You should select 1 of these platforms (i.e., Carmen, Apple iTunes U or U.OSU.EDU) to use during the semester to download class material.** You can download material for class from any of these three sources. The class material is same for all platforms.

- 1. Carmen** – Class content will be delivered through Carmen. You need an OSU Username and password to access Carmen. The material for class will be provided in the Content tab of Carmen. This material (e.g., recorded lectures, download videos, slides, notes) is the same material that you can download from iTunes U and u.osu.edu and it is free.
- 2. Apple iTunes U Intro Environmental Science** - Class content will be delivered through **Apple iTunes: Intro Environmental Science**. You can subscribe to this class at <https://itunes.apple.com/us/course/intro-environmental-science/id601450178>, which will allow you to watch recorded lectures, download videos, slides, notes, apps and other material for class. This material (e.g., recorded lectures, download videos, slides, notes) is the same material that you can download from Carmen and u.osu.edu and it is also free.
- 3. U.OSU.EDU** - Class content will be delivered through u.osu.edu. A class page has been established for ENR2100 at: <http://go.osu.edu/enr2100>. You can use this class page to download all the material for class. This material (e.g., recorded lectures, download videos, slides, notes) is the same material that you can download from Carmen and iTunes U and it is free.

GE Category and Expected learning outcomes

This course fulfills *GE Category Natural Science, Biological Science*. Natural Science coursework fosters students' understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

1. Students understand the basic facts, principles, theories and methods of modern science.
2. Students learn key events in the development of science and recognize that science is an evolving body of knowledge.
3. Students describe the inter-dependence of scientific and technological developments.

4. Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct (<http://studentconduct.osu.edu>).

Students with Disabilities

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901.

<http://www.ods.ohio-state.edu/>

Communicating with Students

Periodic announcements and some lecture slides will be posted on Carmen. Announcements and news items will also be posted on Twitter: [@OSUEnVirO](https://twitter.com/OSUEnVirO)

Dr. Lower has created an OSU Email account specifically for this class: Lower.30@osu.edu and you should email Dr. Lower if you have questions about class.

If you'd prefer to talk to Dr. Lower face-to-face, virtual office hours will be conducted using skype. Dr. Lower's account name is [osuenviro](https://www.skype.com/user/osuenviro). Times will be announced during the first week of class.

Dr. Lower will use your OSU email account to communicate with you. While many of you have other email accounts through services such as Goggle, Yahoo, or Hotmail, Dr. Lower will NEVER send email to these other accounts.



January 27, 2015

Bernadette Vankeerbergen, Ph.D.
Program Manager, Curriculum and Assessment
Arts and Sciences
The Ohio State University
154D Denney Hall
164 W 17th Ave.
Columbus, OH 43210

Hello Dr. Vankeerbergen,

Thank you for reviewing our online ENR2100 course for approval by OSU. The committee requested that I address four concerns, which I believe are easy to resolve:

1. We have been and are currently working with ODEE to design our course. The goal is to have our course conform to OSU standards and to have it ready for Su15.
2. We will make sure the syllabus refers to the online class throughout rather than telling the students to "come to class".
3. See below.*
4. We will use an OSU Email to communicate with students. We have also set up a skype account (OSUEnViRo) to hold face-to-face hours during the semester. We decided against using Carmen Connect because a survey of our students, TAs and instructors indicated overwhelmingly that they prefer skype to Carmen Connect.

*The committee is concerned that "Given that students will be able to test out in the future (EM credit), what will be the criteria for test since all the materials for the course are on-line (Apple iTunes U)?"

Our material is available as an open course on Apple iTunesU, free for anyone in the public to use. Its part of our mission at OSU to provide high quality free educational material to the world. If students would like to use this material to be successful in ENR2100, then we are very happy. If the committee is concerned that students will take our free class on iTunes U and then test-out of our ENR2100 class, I really doubt this will happen. Last week NPR interviewed, Anant Agarwal, CEO of edX and largest provider for online content through Harvard and MIT. He said that edX has 3-million users and that less than 7% of them finish an online course. I've seen similar numbers from other MOOC providers and so it really seems to me that the vast majority of students will NOT complete our free online iTunes U course on their own and so the vast majority of students will not be able to successfully test out of ENR2100.



THE OHIO STATE UNIVERSITY

To test out of ENR2100 I would expect the student to be able to successfully complete BOTH of the following:

a. Earn a minimum score 70% C- on a comprehensive exam consisting of 250 questions (multiple choice, short answer). The questions will cover material from the entire class.

AND

b. Earn a minimum score of 70% C- on a Scientific Poster. The poster is designed and presented to the instructor and is focused on a specific topic in environmental science.

Thank you for the opportunity to address the committees concerns.

Sincerely,

Brian H. Lower, Ph.D.
Associate Professor