Curriculum Change Form

(Present only one proposed curriculum change per form)

(Complete only the section(s) applicable.)

Part I

(Check one)		Department Name	Environmental Stewardship & Sustainability [ENV]
X	New Course (Parts II, IV)	College	University Programs
	Course Revision (Parts II, IV)	*Course Prefix & Number	ENV 200
	Hybrid Course ("S," "W")	*Course Title	The Sustainable Global Future
	New Minor (Part III)	*Program Title	
	Program Suspension (Part III)		
___	Program Revision (Part III)	*Provide only the information relevant to the proposal.	If Certificate, indicate Long-Term (University) or Short-Term (Departmental)

Proposal Approved by:	Date		Date
Departmental Committee	1/23/14	Council on Academic Affairs	3/20/2014
College Curriculum Committee	2/5/14	Faculty Senate**	NA
General Education Committee*	2/13/14	Board of Regents**	NA
Teacher Education Committee*	NA	EFFECTIVE ACADEMIC TERM***	Fall 2014
Graduate Council*	NA		

*If Applicable (Type NA if not applicable.)
**Approval needed for program revisions or suspensions.
***To be added by the Registrar's Office after all approval is received.

Completion of A, B, and C is required: (Please be specific, but concise.)

A. 1. Specific action requested: (Example: Increase the number of credit hours for ABC 100 from 1 to 2.)

Creation of new gateway course for ENV minor, ENV certificate, and General Education

A. 2. Proposed Effective Academic Term: (Example: Fall 2012)

Fall 2014

A. 3. Effective date of suspended programs for currently enrolled students: (if applicable)

B. The justification for this action:

This action will allow exposure to environmental education for undergraduate students, serve as an introduction to important ENV concepts, build the basic knowledge for students who choose to pursue an ENV minor/certificate, and expand GE choices.

C. The projected cost (or savings) of this proposal is as follows:

Personnel Impact:

There will be a need for faculty (contract or adjunct) to teach the course—which we anticipate will increase as enrollments justify.

Operating Expenses Impact:

None. The ENV program already regularly schedules regular community service opportunities, and will continue to do so to support the needs of the course

Equipment/Physical Facility Needs:

None expected

Library Resources:

Ensuring that the collection includes emerging works related to best practices in teaching and stewardship and sustainability would be beneficial. The ENV program will work with library personnel to broaden resources as budgets permit.

Part II. Recording Data for New, Revised, or Dropped Course

(For a **new required course,** complete a separate request for the appropriate program revisions.)

1. For a new course, provide the catalog text.
2. For a revised course, provide the current catalog text with the proposed text using ~~strikethrough~~ for deletions and underlines for additions.
3. For a dropped course, provide the current catalog text.

New or Revised* Catalog Text

(*Use ~~strikethrough~~ for deletions and underlines for additions. Also include Crs. Prefix, No., and description, limited to 35 words.)

ENV 200 The Sustainable Global Future. 3(A) Prerequisite or Corequisite: ENG 102 with a minimum grade of "C" or ENG 105 or HON 102 with a minimum grade of "B". Introduces environmental sustainability, and explores environmental interconnections among ecosystems, societies, and economies in an era of global change. Topics include living within ecosystem limits, social equity & justice, technical, scientific, governmental, and individual strategies fostering sustainability. Gen Ed E-5B

Part III. **Recording Data for Revised or Suspended Program**

1. For a revised program, provide the current program requirements using ~~strikethrough~~ for deletions and *underlines* for additions.
2. For a suspended program, provide the current program requirements as shown in catalog. List any options and/or minors affected by the program's suspension.

Revised* Program Text

(*Use ~~strikethrough~~ for deletions and underlines for additions.)

Part IV. Recording Data for New or Revised Course (Record only **new or changed** course information.)

Course prefix (3 letters)	Course Number (3 Digits)	Effective Academic Term (Example: Fall 2012)	College/Division:	Dept. (4 letters)*
ENV	200	FALL 2014	AS ____ HS ____ BT ____ JS ____ ED ____ UP XX	ENVS

Credit Hrs.	Weekly Contact Hrs.	Repeatable Maximum No. of Hrs.
3	Lecture XX Laboratory ____ Other ____	Cip Code (first two digits only)

Schedule Type* (List all applicable)	Work Load (for each schedule type)	Grading Mode*
1	3	N
B	3	
W	3	
		Grading Information: Course is eligible for IP (in-progress grading) for: Check all applicable
		Thesis ____
		Internship ____
		Independent Study ____
		Practicum

Class Restriction, if any: (undergraduate only)

FR ____ JR ____
SO ____ SR ____

CoRequisites and Prerequisites ****See definitions on following page****

Co-Requisite(s): (List only co-requisites. See below for prerequisites and combinations.)

Course Prefix and No.	
Course Prefix and No.	

Prerequisite(s): (List prerequisites only. List combinations below. Use **"and"** and **"or"** literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D ˇ.)

Course Prefix and No.	
Course Prefix and No.	
Test Scores	
Minimum GPA (when a course grouping or student cumulative GPA is required)	

Co-requisite(s) and/or Prerequisite(s) Combination (Use **"and"** and **"or"** literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D-.)

Course Prefix and No.	A minimum grade of "C" in ENG 102 or HON 102 or ENG 105 with a minimum grade of "B"
Test Scores	
Minimum GPA (when a course grouping or student cumulative GPA is required)	

Equivalent Course(s): (credit will not be awarded for both…; or formerly…)

Course Prefix and No.	
Course Prefix and No.	
Course Prefix and No.	

Proposed General Education Element: Please mark (**X**) in the appropriate Element or Elements (e.g. – 4B(3) **X**).

Element 1 (9)	Element 2 (3)	Element 3 (6)	Element 4 (6)	Element 5 (6)	Element 6 (6)
1A (3)	2 (3)	3A (3)	4A (3)	5A (3)	6 (6)
1B (3)		3B (3)	4B (3)	5B (3) X	
1C (3)		*or* 3A/B Integrated A&H(6)	*or* 4A/B Integrated Sciences(6)		

NOTE: Do not forward validation tables with curriculum form.

(*Use Validation Tables.)

General Education Course Application
GE-2012: ELEMENTS 1--6
Revised: Fall 2012

Department: Environmental Sustainability & Stewardship (University Programs)

Course Prefix and Number: ENV 200

Course Title: The Sustainable Global Future

For which GE Element is the course designed? 5B- SBS

Identify the General Education Goals addressed in this course: (See below.)

- CRITICAL THINKING: Use appropriate methods of critical thinking and quantitative reasoning to examine issues and to identify solutions. (GEN ED GOAL 2).
- APPLICATION & ANALYSIS: Analyze the historical and social contexts of cultural, economic, political, religious, and scientific developments. (GEN ED GOAL 3).
- METHODS: Distinguish the methods that underlie the search for knowledge in the arts, humanities, natural sciences, history, and social and behavioral sciences. (GEN ED GOAL 7).
- INTEGRATION: Integrate knowledge that will deepen their understanding of, and will inform their own choices about, issues of personal and public importance. (GEN ED GOAL 8).

Course Abstract

1. Describe the course content.

Introduces environmental sustainability, and explores environmental interconnections among ecosystems, societies, and economies in an era of global change. Topics include living within ecosystem limits, social equity & justice, technical, scientific, governmental, and individual strategies fostering sustainability.

The course examines six major themes in environmental sustainability and stewardship: (1) Historical Perspectives and Definitions; (2) Natural Systems Function; (3) Human connections to the physical world; (4) Technological and Economic Relationships to Sustainability (5) Environmental behaviors, values, and ethics; (5) Motivating environmentally sustainability and behavior.

2. Describe the instructional methods (lecture, discussion, small groups, laboratory, or simulation), faculty qualifications, and course coordination.

INSTRUCTIONAL METHODS Course material will be presented through readings, lectures, class discussions and exercises. At the end of the semester, will students develop an integrative paper and presentation on a topic of personal interest related to environmental sustainability and stewardship that will be developed throughout the semester through a series of directed reflective essays and participation in a community service-learning activity.

FACULTY QUALIFICATIONS: All faculty that teach the course must have sufficient academic and/or professional qualifications in relevant disciplines, including but not limited to the physical sciences or environmental education certification.

COURSE COORDINATIONL Coordination of all assessment activities will be the responsibility of the Environmental Sustainability & Stewardship Minor Program Coordinator (Alice Jones)

3. Describe any new resources needed to implement or to assess the course

There will be a need for faculty (contract or adjunct) to teach the course—which we anticipate will increase as enrollments justify. The ENV program already regularly schedules regular community service

opportunities, and will continue to do so to support the needs of the course. We will also work with the Library as budgets allow to ensure an appropriate collection of digital and print resources for students.

4. Describe the assessment process.

(a) What type of assessment instruments will be used to evaluate student learning?

Assessment Method- 1

A common exam with a total of 24 questions (6 "content" questions for each of the 4 Gen Ed elements; or 4 "Gen Ed" questions for each of the 6 "content" themes) will be distributed to all ENV 200 sections—which will serve for both Gen Ed and Program Assessment needs.

Gen Ed Assessment: For each of the 4 Gen Ed Elements, an index score ranging from 0 – 6 will be determined for each Gen Ed element by adding the total number of correct questions, with the SBS – Gen Ed Rubric Score assigned as follows:

- 5 or more correct : "**3-Competent**-Meets Course Expectations"
- 3 or 4 correct : "**2-Developing-** Incomplete in Meeting Course Expectations"
- 2 or fewer correct : "**1- Beginning-** Inadequate in Meeting Course Expectations"
-

Assessment Method- 2

All sections of the course will have a common final integrative paper/ presentation assignment that requires them to relate the 6 content themes of the course to a sustainability issue of personal or and/or public importance. A common rubric will be used to assess theses assignments—adjusted for presentation style (e.g., paper or presentation)

(b) When will data be collected?

Data will be collected in the last quarter of the semester

(c) For how many students will assessments be scored?

Assessment Method 1: All students in all sections of ENV 200 will be given the common objective Exam (Assessment 1) each semester.

For Assessment Method 2—the integrative paper/presentation--faculty who teach the sections will grade the papers/ presentatios for class grading purposes. A 10% random sample of papers/presentation from each section will scored by a committee using the rubric attached (see Appendix A)

(d) Who will score the assessment instruments?

The objective exam will be graded by the individual instructor, and results for each student will be reported to the Program Coordinator. The random sample of integrative papers/presentations will be graded each semester by an assessment team consisting of three people: (a) the ENV program coordinator; (b) one ENV 200 instructor; and (b) one ENV instructor who is not teaching the ENV 200 course.

(e) Who is the faculty person responsible for assessment data for this course?

ENV Program Coordinator Alice Jones

5. Provide at least one example of an assessment item *(e.g., question on exam; portion of an assignment)* that could be used to assess student learning on <u>each</u> of the criteria on the GE scoring rubric appropriate for this course.

Assessment Method 1: Objective Exam

Example below is for the "Definitions and Historical Perspectives" Content Theme

COMPREHENSION:

Which of the following authors is most closely associated with preserving Yosemite National Park:

*A) Aldo Leopold B) Bill McKibben C) John Muir** D) Rachel Carson*

APPLICATION AND ANALYSIS

If you were to seek the US Green Building Council's LEED Certification process, which of the following home improvements likely WOUD NOT increase your LEED rating:

*A.) Choosing a building site that is several miles outside of the pollutant zone of an urban airshed" ***

B) Employing porous paving materials in the driveway and landscape paving

C) Increasing the R-rating of the insulation in the ceilings and exterior walls

D.) Removing an interior wall between the diningn room and kitchen to increase access to daylight from all interior spaces

E. Incorporating recycled or reclaimed materials in the design

METHODS:

According to NEPA, the "Analysis of Environmental Impacts" for a federally required Environmental Impact Statement MUST contain each of the following EXCEPT:

A) Listing the Impacts to threatened or endangered species

B) Identifying any potential Air and water quality impacts

C) Impacts to historic and cultural sites,

*D) A Mitigation Plan for each alternative ***

E) A cost analysis for each alternative

INTEGRATION

[1-DEF/HISTORICAL] According to the 2013 GlobeScan "State of Sustainable Business" Survey, the greatest challenge to integrating sustainability in worldwide business today is:

A) worker's rights-related issues in the supply chain

*B) convincing top leaders and managers of sustainability's value ***

C) explaining to investors the value of sustainability as a business principle

D) challenges caused by regulations and other public policy frameworks

E) maintaining profitability while pursuing sustainability goals

Assessment Method 2—Integrative Paper/Presentation Assignment

ENV INTEGRATIVE PAPER/ PRESENTATION SCORING RUBRIC for Gen Ed 5B-SBS
ENV 200: The Sustainable Global Future

Criteria	4-Accomplished *Exceeds Course Expectations*	3-Competent *Meets Course Expectations*	2-Developing *Incomplete in Meeting Course Expectations*	1-Beginning *Inadequate in Meeting Course Expectations*	POINTS
Comprehension *GE Goal: 4*	Comprehends the important concepts from each of the six environmental sustainability and stewardship as well as subsidiary and implicit aspects	Comprehends the important concepts from each of the six environmental sustainability and stewardship	Comprehends some of the important concepts from each of the six environmental sustainability and stewardship	Comprehends few of the important concepts from each of the six environmental sustainability and stewardship	
Application and Analysis *GE Goals: 2, 4*	Uses relevant concepts/theories insightfully from each of the six environmental and sustainability themes as they relate to a specific issue or topic	Uses relevant concepts/theories from each of the six environmental and sustainability themes as they relate to a specific issue or topic	Uses relevant concepts/theories from each of the six environmental and sustainability themes as they relate to a specific issue or topic, but in an incomplete or superficial manner	Does not use relevant concepts/theories from each of the six environmental and sustainability themes as they relate to a specific issue or topic	
Methods *GE Goal: 7*	Demonstrates a superior understanding of methods used in environmental sustainability and stewardship research as they related to a specific issue or topic	Demonstrates an understanding of methods used in environmental sustainability and stewardship research as they relate to a specific issue or topic	Demonstrates an incomplete understanding of methods used in environmental sustainability and stewardship research as they relate to a specific issue or topic	Fails to demonstrate understanding of methods used in environmental sustainability and stewardship research as they relate to a specific issue or topic	
Integration *GE Goals: 2,4,8*	Fully integrates relevant information, appropriate perspectives, and important principles for each of the six environmental sustainability and stewardship themes as they relate to a specific issue or topic	Integrates most relevant information, appropriate perspectives, and important principles for each of the six environmental sustainability and stewardship themes as they relate to a specific issue or topic	Integrates some relevant information, appropriate perspectives, and important principles for each of the six environmental sustainability and stewardship themes as they relate to a specific issue or topic	Fails to integrate relevant information, appropriate perspectives, and important principles for each of the six environmental sustainability and stewardship themes as they relate to a specific issue or topic	

Eastern Kentucky University **Environmental Sustainability & Stewardship Minor Program**
ENV 200: The Sustainable Global Future

INSTRUCTOR TBD
[Instructor Contact Information & Office Hours]
www.green.eku.edu/env
CRN XX XXXX
RECOMMENDED TIME BLOCKS*: MW 3:30 – 4:45 OR 5:00 p.m. – 6:15;
TR 3:30 – 4:45 OR 5:00 p.m. – 6:15

*[*note: because some class meetings could require group meetings and off-campus or outdoor activities, a 50 minute time block is not recommended, and course times with no daylight hours should be avoided. A strictly on-line course is not recommended; but a blended or hybrid course with limited class meetings for activities would be acceptable.]*

Catalog Course Description
Prerequisite or corequisite: ENG 102 or ENG 105(B) or HON 102. Introduces environmental sustainability, and explores environmental interconnections among ecosystems, societies, and economies in an era of global change. Topics include living within ecosystem limits, social equity & justice, technical, scientific, governmental, and individual strategies fostering sustainability.

The course examines six major themes in environmental sustainability and stewardship: (1) Historical perspectives and definitions; (2) Natural systems Function; (3) Human connections to the physical world; (4) Technological and economic relationships to sustainability (5) Environmental behaviors, values, and ethics; (5) Motivating environmentally sustainability and behavior.

Methods of Instruction
Course material will be presented through readings, lectures, class discussions and exercises. At the end of the semester, students will develop an integrative paper and presentation on a topic of personal interest related to environmental sustainability and stewardship that will be developed throughout the semester through a series of directed reflective essays and participation in a community engagment activity.

Required Materials: see outline

General Education Element 5 Student Learning Outcomes:
Students will be able to:
- CRITICAL THINKING: Use appropriate methods of critical thinking and quantitative reasoning to examine issues and to identify solutions. (GEN ED GOAL 2).
- APPLICATION & ANALYSIS: Analyze the historical and social contexts of cultural, economic, political, religious, and scientific developments. (GEN ED GOAL 3).
- METHODS: Distinguish the methods that underlie the search for knowledge in the arts, humanities, natural sciences, history, and social and behavioral sciences. (GEN ED GOAL 7).
- INTEGRATION: Integrate knowledge that will deepen their understanding of, and will inform their own choices about, issues of personal and public importance. (GEN ED GOAL 8).

Course Specific Student Learning Outcomes:
Students will be able to
- Comprehend important historical events and literature of environmental sustainability and stewardship;
- Describe the fundamental natural processes that influence all living organisms on earth.
- Explain human connections to the physical and natural world.
- Identify the relationship of technology and economics to sustainability; and the technical, scientific and institutional strategies that foster sustainable development.
- Compare and contrast differing environmental behaviors, values, and ethics.
- Identify social, legal and governmental strategies for motivating environmentally sustainable behavior.
- Integrate knowledge and experience on a specific issue of personal and public importance that deepens sustainability and stewardship understanding and informs choices about that issue.

Evaluation Method(s) and Relative Weights
Grades will be assigned as follows: A 90-100; B 80-89.9; C 70-79.9; D 60-69.9 F Below 60
- 2 Exams (20% each) 40%
- Final Integrative Paper & Presentation 20%,
  - 6 Reflective Unit Essays @ 3% each 18%
  - Community Engagement Experience 10%
- In-Class Exercises and Homework Assignments 12%

TOTAL **100%**

Exams

There will be two exams, each worth 20% of your grade. Exams will cover materials presented in lectures, readings, fieldwork, assignments, class discussions, and other class activities. Exams will be a combination of fill-in-the-blank, true/false, multiple choice, and short answer.

Integrative Paper OR Presentation

This assignment gives students an opportunity to explore in-depth an issue or topic of personal and/or public importance. The topic you choose is up to you—provided that it has a clear relationship to sustainability and stewardship. Topic must be approved by the instructor by the end of the second week of class.

At the end of the semester you will write an 8-10-**page paper** (excluding bibliography) OR produce a **5-7 minute presentation** *(e.g., powerpoint, video, blog, web page, other approved media)*.

Throughout the semester you will "build" this final paper and presentation through:

- **6 Reflective Unit Essays**
  - At the end of each of unit, you will write a reflective essay that links that unit to your topic or issue. Each essay will be assessed on (1) how you demonstrate understanding of important concepts of the unit; and (2) how you relate and link your understanding of the unit and to your own topic or issue.

- **Community Engagement Experience**
  - You must participate in a minimum of 3 hours of community engagement in an approved activity, after which you will write a write a reflective essay that links what you learned from that experience to your topic or issue

Date	Approved ENV 200 Community Engagement Activities Spring 2014*[1]
Jan 21	Habitat ReStore Demolition Team (9:00 a.m – 1:00 p.m.)
March 8-10	Alternate Spring Break Trip: Appalachian Reforestation Initiative- Mingo County, West Virginia. Sign up through Student Life office
April 18 or 19	Taylor Fork Invasive Species Removal Crews (Fri 2 – 6; Sat 10 – 2)
TBD	*Alternative community engagement experience must be APPROVED IN ADVANCE by the instructor*

Class Participation and Homework Assignments

Several in-class activities, discussions, and brief homework assignments will be given throughout the semester varying in value to help students better comprehend the important concepts and skills of the course, and to help students make progress on the course learning objectives. These assignments typically are NOT announced in advance, and no make-up assignments will be given.

Attendance and Class Etiquette

Students are expected to attend regularly for the full time period allocated for the class. Failure to do so will affect your grade in multiple ways, including your performance on in-class activities, reflective papers, and exams. See also the information on the "Use it or Lose it" attendance policy at http://www.registrar.eku.edu/FirstDayOfAttendance/faqs/.In general, just be considerate of the instructor and your fellow students by ***being on time,*** and ***stowing your digital communication device(s)*** during class.

Student Progress. The instructor will provide students with written information about their progress through grades on the reflective essays and grades in-class activities and homework assignments and through grades on exams. Mid-term grades will be reported to the Registrar's Office on or before the mid-term grade deadline.

Academic Integrity. The Academic Integrity policy is available at http://studentrights.eku.edu/academic-integrity-policy, and will be strictly enforced in this course. Questions regarding the policy may be directed to the Office of Academic Integrity. *Plagiarism and cheating are things I do not take lightly, and I will pursue any suspected academic dishonesty to the fullest extent that university rules allow*. I call your attention in particular to the following excerpted from the policy:

Cheating . . . includes, but is not limited to:

- Giving or receiving assistance not authorized by the instructor or University representative; - Participating in unauthorized collaboration on an academic exercise;
- Using unapproved or misusing electronic devices or aids during an academic exercise.

Plagiarism . . . include[s], but [is]not limited to:

- Using words, ideas, or images from another source (including the Internet); whether in quotation marks or not, without giving credit to that source in the form of a bibliographic citation; . . .

Fabrication . . . includes, but is not limited to:

- Submitting as your own any academic exercise (verbal, written, electronic, or artistic work) prepared totally or in part by another person.

Disabilities. *A student with a "disability" may be an individual with a physical or mental impairment that substantially limits one or more major life activities such as learning, seeing or hearing. Additionally, pregnancy or a related medical condition that causes a similar substantial limitation may also be considered a disability under the ADA.* If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID and present them to the course instructor to

[1] **Note: The events listed are for illustration purposes only. The ENV program will schedule a minimum of TWO community engagement activities per semester appropriate to meet this course requirement—at the discretion of faculty.*

discuss any academic accommodations you need. If you believe you need accommodation and are not registered with the OSID, please contact the office in the Whitlock Building Room 361 by email at disserv@eku.edu or by telephone at (859) 622-2933. Upon individual request, this syllabus can be made available in an alternative format.

Refer to Colonel Compass [www.eku.edu/compass/] for important campus dates, including holidays and deadlines.

Course Outline and Approximate Time Schedule

Weeks 1-2
Theme 1: DEFINITIONS AND HISTORICAL PERSPECTIVE:

- Important terms, concepts, and historical events and people in the history of the development of environmental and sustainability thought; definitions of "sustainability" and "environmental stewardship", including key concepts of conservaation, preservation, restoration, and responsible individual and collective behavior; the "environment/ equity/ economy" triad; cross-generational and systems thinking.
  - READINGS:
    - Basingo, Andrew. 1995. *Methods of defining "sustainability."* Sustainable Development 3:3 pp 109-119 (DOI 10.1002/sd.4560030302.
    - Excerpts from
      - Thoreau, Henry David: 1854 Excerpts from: Walden. In *American Earth: Environmental Writing Since Thoreau*. Bill McKibben, Ed. 2008. Pp 9-25.
      - Muir, John. 1912 A wind-storm in the forests (from"My First Summer in the Sierra**").** In *American Earth: Environmental Writing Since Thoreau*. Bill McKibben, Ed. 2008. Pp 104-112.
      - Leopold, Aldo. 1949. "*The Land Ethic*," from *A Sand County Almanac.* New York: Ballantine Books, 1949.
      - Carson, Rachel. 1962. *Silent Spring.* New York: Houghton Mifflin.
      - Brower, David R. 1971. "*The Third Planet: Operating Instructions."* March 16, 1975.
      - Kinsolver, Barbara. 2002. *Knowing our Place*. In *Small Wonder*. Harper Collins (New York), 2002.
      - McKibben, Bill. 2010 Eaarth: Making life on a tough new planet. Henry Holt and Company (New York).
  - ACTIVITIES/ ASSIGNMENTS:
    - UNC's "*What is Sustainability"* Introductory Exercise (http://erp.unc.edu/files/2013/07/What_is_Sustainability.pdf)
    - Choose your Issue or Topic.
    - ***REFLECTIVE ESSAY #1: "Issue in Context: Sustainability and Environmental Historical perspective on [your topic or issue]."***

Weeks 3, 4, 5
Theme 2: NATURAL SYSTEM FUNCTION:

- The natural laws that govern the functioning of the biosphere; interdependence and holism; ecosystems as interdependent communities with hierarchies of relationships; and concepts of ecological partnerships, cooperation and competition; biogeochemical cycling & world's major biomes, aquatic ecosystems.
  - READINGS:
    - Aldo Leopold's "The Land Ethic" (essay from *A Sand County Almanac*)
  - ACTIVITIES/ ASSIGNMENTS:
    - Where's Your Drinking Water: Tracking your drinking water from its source.
    - S*it Creek: Does your local stream, river or lake contain fecal coliform?
    - ***REFLECTIVE ESSAY #2: "Issue in Context: Important natural laws that govern or affect [your topic or issue]."***

Weeks 6,7,8
Theme 3: HUMAN CONNECTIONS TO THE PHYSICAL AND NATURAL WORLD

- Humans as a part of nature ; human inventions and activities that mirror natural systems; the effects of the physical (i.e., built environment) and the natural environment on human health; and the relationship of population, consumption, technology and carrying capacity to the biosphere.
  - READINGS:
    - Miller, G. T. & Spoolman, S. (2010) *Environmental* Science, Independence, KY: Cengage Learning, pp. 94-119.
    - Dietz, T., Rosa, E. A. & Yort, R. (2007) Driving the ecological footprint, *Frontiers in Ecology and the Environment* 5(1): 13–18.
    - Zhou, Y., Eom, J., & Clarke, L. (2013). The effect of global climate change, population distribution, and climate mitigation on building energy use in the U.S. and China. *Climatic Change*, *119*(3/4), 979-992. doi:10.1007/s10584-013-0772-x.
  - ACTIVITIES/ ASSIGNMENTS:
    - How Big is a Billion from Facing the Future (2002) *Engaging Students Through Global Issues.*
    - When the Chips are Down**,** Billion from Facing the Future (2002) *Engaging Students Through Global Issues.*
    - Global Warming Begins at Home from Population Connection, http://www.populationeducation.org/content/find-lesson
- ***REFLECTIVE ESSAY #3: "Issue in Context: Connections and disconnections between human systems and the physical world with [your topic or issue]."***

EXAM 1 AND MID-SEMESTER GRADES HERE

Weeks 9, 10

Theme 4: TECHNOLOGICAL AND ECONOMIC RELATIONSHIPS TO SUSTAINABILITY

- Technical, scientific and institutional strategies that foster sustainable development; energy and natural resource efficiency and conservation; implications of shifting from nonrenewable resources (e.g., fossil fuels) to renewable resources; prevention and control of pollution and waste; design for the environment, industrial ecology and ecologically sustainable design; remediation of current environmental problems and preservation of biological diversity
  - READINGS:
    - **Sustainable Energy — without the hot air**; *Version 3.5.2. November 3, 2008.* Copyright David JC MacKay 2009. www.withouthotair.com.
    - **"Planet Money Makes a T-Shirt"** The Planet Money team followed the making of a simple T-shirt from cotton fields, to factories, to container ships http://www.npr.org/blogs/money/.
    - **PROSUITE Handbook on a novel methodology for the sustainability impact assessment of new technologies.** 2009 European Union "Development and application of a standardized methodology for the PROspective SUstaInability assessment of TEchnologies program." www.prosuite.org.
  - ACTIVITIES/ ASSIGNMENTS:
    - Comparing On-line Carbon Footprint Calculators—Assumptions, Strengths, and Weaknesses.
    - Life Cycle Analysis – Conduct a simplified life cycle analysis on a food, object, commodity, or service related to your topic or issue, and construct or commodity or service related to your topic or issue.
    - ***REFLECTIVE ESSAY #4: "Issue in Context: Technological and Economic strategies for sustainability for [your topic or issue]."***

Weeks 11, 12, 13

Theme 5: ENVIRONMENTAL BEHAVIORS, VALUES AND ETHICS

- issues of equity, justice, culture and sustainable development; different ways of measuring societal wellbeing; individual and community improvement as important components of economic/social development; and how the concepts of precautionary principle and scientific certainty affect human decision making.
  - READINGS:
    - Uhl. 2013. Developing an Ecological Consciousness.
    - Mohai, P., Pellow, D. and J.T. Roberts l. 2009. "Environmental Justice" Annual Review of Environmental Resources. 34: 405-420.
    - *Excerpts from:* Ethics: An Introduction to Environmental Philosophy, 5th edition, Joseph R. Des Jardins, ed. (Wadsworth).
  - ACTIVITIES/ ASSIGNMENTS:
    - Precautionary principle in action: Green School Initiative: http://greenschools.net/article.php?id=127.
    - Discussion/ Activity: Fitz, D. (2009) "What's wrong with the 30 hour work week?" Z Magazine. July http://www.zcommunications.org/whats-wrong-with-a-30-hour-work-week-by-don-fitz.html.
    - Discussion/ Activity: New Economics Foundation. 2009. "The Happy Planet Index 2.0" http://www.happyplanetindex.org/data/
    - Discussion / Activity: Research Shows: Highly unequal societies more materialistic and more polluting: http://www.progressorcollapse.com/the-watermelons-green-outside-red-inside/ Site draws on: Wilkinson, R., K. Pickett and R. DeVogli. 2010. Equality, Sustainability and Quality.
    - ***REFLECTIVE ESSAY #5: "Issue in Context: Ethical and value-based concerns and opportunities with [your topic or issue]."***

Weeks 14, 15, 16

Theme 6: MOTIVATING ENVIRONMENTALLY SUSTAINABLE BEHAVIOR

- Social, legal and governmental frameworks for guiding environmental management and sustainable development; the relationships of population, consumption, culture, social equity and the environment; micro- and macroeconomic signals (i.e., prices or taxes that affect environmentally sustainable or unsustainable action);how spirituality and cultural beliefs affect environmentally sustainable behavior
  - READINGS:
    - Fishman, C. (2011). *The Big Thirst: The Secret Life and Turbulent Future of Water*. New York: Free Press. Chapters: 8, 3, 6
    - Finley, R. (2013). "Guerrilla gardening in South-Central L.A." [TED Talk].
  - ACTIVITIES/ ASSIGNMENTS:
    - Documentary Viewings:
      - Moyers, B. (2006). *Is God Green?* [Documentary]. United States: PBS.
      - Severson, L. (2013). *Religion and the Environment.* [Documentary]. United States: PBS
    - Water abundance and scarcity exercise; developing a policy for water use and conservation in your community
    - ***REFLECTIVE ESSAY #6: "Issue in Context: Strategies for changing personal and/or public behavior related to [your topic or issue]."***

- **INTEGRATIVE PAPER/ PRESENTATION.** Drawing on the "Reflective Essays" you have written throughout the semester, develop a final integrative paper or presentation on your topic or issue—which will be due the last week in class.

FINAL EXAM