ENVS 115 Environmental Conservation and Energy Sustainability Spring 2019

Instructor: Hope Coffield  
Email: hcoffield@wju.edu

Class Time: MWF 8:00 – 8:50 am  
Office: N/A

Location: ASC 104  
Phone: (304) 231-4800

Office Hours: I will be available immediately following class on MWF. I am also available at other times by appointment. Don’t be shy, send me an email and we’ll find a time.

Required Texts and Materials:
   (Note: Electronic supplements are available, but are not required, so feel free to get used copy.)
2) Daily access to your WJU email account and to the course Blackboard site.
3) Assignment details and any additional required readings will be posted on Blackboard.

Important Dates: The last day of the Add/Drop Period is Friday, January 11, 2019. The last day to withdraw from this course with a grade of a W is Tuesday, March 26, 2019. Advisory grades are due Monday, February 11, 2019. The final exam is Monday, April 29, 2019. Final grades will be posted no later than Monday, May 6, 2019.

Catalog Course Description
ENVS 115 Environmental Conservation and Energy Sustainability  (3 cr)
This course introduces students to the field of environmental sustainability. Topics covered include environmental costs of fossil fuel source energy, and the benefits of a renewable energy portfolio. Examination of renewable energy sources will include solar, wind, geothermal, biofuels, and hydropower systems. Additional topics will include alternative transportation systems, sustainable agriculture, and a smart energy grid. This course will require some outside of class field trips and seminar participation.

Student Learning Outcomes: Student learning outcomes are summarized below and are outlined in detail at the beginning of each chapter. Upon successful completion of this course (C or better) students will be able to:
1. Define sustainability and explain how our relationship with the environment needs to be more sustainable.
2. Explain the process of science and distinguish between sound science and 'junk' science.
3. Interpret data and understand environmental issues presented in graphs, maps, and tables.
4. Identify factors that limit populations and describe ways in which humans alter the environment and change population growth patterns.
5. Describe how matter and energy flow through ecosystems.
6. Describe ways humans alter ecosystems both positively and negatively and explain why we
need to manage ecosystems to protect their components from overuse.

7. Explain why biodiversity of wild species has been declining and why this is important.

8. Explain hydrologic and biogeochemical cycles - how they function and how they are affected by human activity.

9. Explain how soils are degraded and how conservation requires action at individual and public policy levels.

10. Identify the key elements of sustainable agricultural systems.

11. Compare advantages and disadvantages of fossil fuels, nuclear and renewable energy sources.

12. Summarize health, environmental, and economic costs of coal from extraction to combustion.

13. Summarize evidence for recent climate change.

14. Describe impacts that air pollution has on human health, crops, forests, and aquatic ecosystems.

15. Summarize the impacts that disease organisms, organic wastes, chemical pollutants, sediments, and nutrients have on water systems and human health.

16. Explain the kinds of policies employed to regulate the use of natural resources and deal with pollution, and describe a typical policy life cycle.

17. Discuss how benefit-cost analysis is applied to environmental policy regulations and give examples of the impact of regulations.

18. Explain the connections between urban sprawl, car dependency and highway construction.

19. Define and give examples of stewardship with regard to ecosystems; essential resources such as water and soil; harnessing energy; management of solid wastes; and pollution prevention.

**Expectations for Attendance and Participation**

**Attendance:** All students must be familiar with the official attendance policy of Wheeling Jesuit University. Students are expected to attend every class. Some absences are unavoidable, but excessive absence or tardiness will impact your grade. You are allowed two unexcused absences without penalty. Each unexcused absence beyond those two (as well as excessive or habitual tardiness) will result in a deduction from your attendance/participation grade.

**If you miss a class you are responsible for all material and activities that occur in class.** WJU allows undergraduates participation in extracurricular activities. Participation in these activities can conflict with exam and/or class attendance. *If you miss class, it is your responsibility to find out about the material you missed* (lecture, class activities, videos, etc.). *Missing class does not entitle you to copies of my lecture notes—you should ask your peers.* However, if you have acquired notes and you need clarification, please, ask me.

**Cell phones and other electronic devices are to be turned off and put away during class.** Unless we are using them as a tool for an activity, their use and/or presence during class time will impact your participation grade. If you are a first responder, a parent, or caregiver who absolutely must be in contact for emergencies please come talk to me about this.

**Come to class prepared.** Read the assigned material prior to discussion of that material in class. This will prepare you to contribute to class discussion and activities. The readings are NOT optional. During class I will hit the main points, but will not have time to cover the entire chapter.
Instead, I will be providing relevant examples or will be expanding on a particular subject. You are responsible for information presented in the text, as well as information presented during class time—this includes lecture, discussion, student presentations, guest speakers, films/videos, etc.

**Actively participate in your learning.** This means asking questions, participating in discussions, and contributing to a positive class atmosphere. You bear a large share of the responsibility for what you end up learning and taking away from this course. Reading minds is not one of my superpowers. If you do not understand something, please ask questions!

**Respect others.** Respectful class discussions not only make class enjoyable, but also give us the opportunity to learn from the experiences of one another. At least once a week a portion of class is expected to include an in-class discussion activity. At all times we must treat others with respect. Be careful to only criticize ideas or question facts – not another person. Also, please be careful not to monopolize the discussion.

**Evaluation Methods**

In addition to participating in classroom discussions, you will demonstrate your knowledge of course content during review questions, quizzes, written assignments, a brief oral presentation and exams. For each assignment or assessment I will establish criteria that define various levels of competence. If your performance meets the criteria for an "A", you will earn an "A". Your goal is to meet the expected standards. You are not competing with your peers. I do not grade on a curve. Homework, quiz, written assignment, and exam grades will be posted on Blackboard. Grades for late assignments will drop 10% each day the assignment is late.

**Attendance/Participation:** Students will start out with 50 points for attendance/participation and it will be easy to keep these points if come to class prepared and participate as described above.

**Review Questions:** Completing all chapter review and concept questions will help you master expected learning outcomes – and be a good way to prepare for exams. For each chapter a few questions will be selected for you to turn in via Blackboard. This will provide an opportunity for me to provide you feedback prior to exams.

**Quizzes:** There will be periodic, unannounced quizzes. The lowest quiz grade will be dropped. There will be no make-up quizzes.

**Written assignments:** You will complete two written assignments (~2-3 pages each, double-spaced) as part of this course. Deadlines and details regarding these assignments will be posted on Blackboard and explained during class.

**Brief presentation:** Following the second writing assignment each student will share a brief summary (~ 4 minutes) of what he or she learned with the rest of the class.

**Exams:** Three in-class exams will be given throughout the semester and the final exam is scheduled for Monday, April 29, 2019. The second and third exam will not specifically be designed to be
cumulative, but many topics in environmental science are interconnected. Expected exam dates are on the course calendar. **There will be no make-up exams for unexcused absences.** Absences due to serious illness or personal emergency may be excused with proper documentation. You must contact me within 24 hours to reschedule an exam. If you know of your absence ahead of time, contact me as soon as possible to discuss your options.

You will have one week after the original test date to make up the exam, unless the original exam falls right before a break. Make-up exams will differ from the exam given at the originally scheduled time, and they will be scheduled at my convenience. If you do not take an exam, you will receive a zero for that exam.

**Assessment Breakdown:**

- 5% Attendance/Participation (50 points)
- 20% Homework (100 points) and Quizzes (100 points)
- 25% Writing Assignments (100 points each) & Brief Presentation (50 points)
- 10% Exam 1 (Chapters 1 – 7) (100 points)
- 12.5% Exam 2 (Chapters 8 – 13) (125 points)
- 12.5% Exam 3 (Chapters 14 – 16 and supplemental material on energy) (125 points)
- 15% Final Exam (Part 1, Chapters 17 – 23 and Part 2, cumulative) (150 points)

All of these assignments and exams add up to quite a bit of work – for you and for me. That is intentional for two reasons. First, there is a lot of content that we need to cover for this course. Second, rather than putting all of your grades ‘in one basket’ I want to spread them out and give you multiple opportunities for success.

**Expected Grading Scale:**

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

To compute your grade: Add up the total number of points you have earned and then divide by the number of points available (1000), then multiply this value by 100. This will give you your course percent.
Official E-mail: An official WJU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this WJU e-mail address.

Academic Honesty Policy: Students are advised that WJU's Academic Integrity Policy will strictly be enforced in this course (see http://www.wju.edu/studenthandbook/). Questions regarding the policy may be directed to the Office of the Academic Vice-President.

Academic Resource Center (ARC): The Academic Resource Center (ARC) is a totally free academic-support service available to all enrolled Wheeling Jesuit University students and staffed almost exclusively by WJU students recommended for employment by WJU faculty. The ARC is located in Bishop Hodges Library and is open five days a week: Sundays 6:00-8:00 p.m., and Mondays-Thursdays 1:00-9:00 p.m. Please visit the ARC's website (readily accessible on the Cardinal homepage under "Quick Links" or at www.wju.edu/arc) to learn about the ARC's services (emphasizing writing, math, and the sciences) and to schedule as the first listing under "Student Services appointments.

Accessibility Services: Wheeling Jesuit University offers students with documented disabilities individual accommodations on a case-by-case basis with confidentiality in compliance with the American with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. In order to receive academic or physical accommodations, students with disabilities must provide current (within three years) and comprehensive documentation concerning the nature and extent of the disability and communicate their needs to the Disability Services Director, located in Ignatius Hall Room G 24 or call 304-243-4484. Students are required to meet with the director to develop accommodation plans that they will present to their course instructors at the beginning of each semester. Students with disabilities that require specific housing accommodations must contact both the Director of Residence Life and the Disability Services Director. Ultimately, all students with disabilities are responsible for their own academic achievement. They must attend classes, complete course assignments, and fulfill all university requirements for their chosen field of study. It is up to students with disabilities to seek out available assistance on campus and to utilize individualized accommodations that promote academic success.

Title IX Statement: Wheeling Jesuit University seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment, misconduct, or assault we encourage you to report this. If you report this to a faculty member, she or he must notify our college’s Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at WJU, please go to http://wju.edu/titleix/.

Note: I reserve the right to modify the course as described in this syllabus and schedule in order to enhance learning, adjust to external demands (such as weather), to correct errors, or for other valid reasons. Changes will be announced in class and posted to Blackboard. It is the student’s responsibility to be aware of these changes.
# Course Schedule (Check Blackboard for Updates and Assignment Details)

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<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>(1) Jan 7 - 11</td>
<td>Introductions; Syllabus; Using your textbook</td>
<td>Chapter 1. Science and the Environment (Ch.1 HW - Review Questions #3, 5, 7)</td>
<td>Chapter 2. Economics, Politics, and Public Policy (Ch. 2 HW – Review Questions # 5, 11, 14)</td>
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<td>(2) Jan 14 - 18</td>
<td>Chapter 3. Basic Needs of Living Things (Ch. 3 HW – Review Questions #2, 4, 8, 10)</td>
<td>Chapter 4. Populations and Communities Ch. 1-3 HW due 8 pm.</td>
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<td>(3) Jan 21 - 25</td>
<td>Chapter 5. Ecosystems</td>
<td>Chapter 6. Wild Species and Biodiversity</td>
<td>Chapter 7. The Value, Use, and Restoration of Ecosystems Ch. 4-7 HW due 8 pm.</td>
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<td>(6) Feb 11 - 15</td>
<td>Chapter 12. Production and Distribution of Food Advisory Grades Due</td>
<td>Chapter 13. Pests and Pest Control</td>
<td>Sustainable and/or Urban Agriculture (tentative guest speaker or field trip) Ch. 11–13 HW due 8pm.</td>
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<td>(9) March 4 - 8</td>
<td>SPRING BREAK</td>
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<td>(10) March 11 - 15</td>
<td>Renewable Energy</td>
<td>STUDENT PRESENTATIONS (2nd Writing Assignment Due)</td>
<td>STUDENT PRESENTATIONS Ch. 16 HW due 8 pm.</td>
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<td>(11) March 18 - 22</td>
<td>STUDENT PRESENTATIONS</td>
<td>TBD Energy</td>
<td>EXAM 3 (Chapters 14-16 &amp; supplemental energy material)</td>
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<td>Date</td>
<td>Topics</td>
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<td>(12) March 25 - 29</td>
<td>Chapter 17. Environmental Hazards and Human Health</td>
<td>Chapter 18. Global Climate Change</td>
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<td>Chapter 18. Global Climate Change</td>
<td>Ch. 17-18 HW due 8 pm</td>
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<td>(13) April 1 - 5</td>
<td>Chapter 19. Atmospheric Pollution</td>
<td>Chapter 20. Water Pollution and Its Prevention</td>
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<td>Chapter 20. Water Pollution and Its Prevention</td>
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<td>(14) April 8 - 12</td>
<td>Chapter 21. Municipal Solid Waste</td>
<td>Reduce, reuse, recycle</td>
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<td>Chapter 21. Municipal Solid Waste</td>
<td>Tentative Recycling Field Trip</td>
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<td>Chapter 21. Municipal Solid Waste</td>
<td>Ch. 19 -21 HW due 8 pm</td>
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<td>(15) April 15 - 19</td>
<td>Chapter 22. Hazardous Chemicals</td>
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<td>Chapter 22. Hazardous Chemicals</td>
<td>EASTER BREAK</td>
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<td>(16) April 22 - 26</td>
<td>EASTER BREAK (Also EARTH DAY)</td>
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<td>Chapter 23. Sustainable Communities and Lifestyles</td>
<td>Reducing Our Footprint</td>
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<td>April 29, 2019</td>
<td><em>fourth and final exam (Part 1, Chapters 17 – 23 and Part 2, cumulative</em></td>
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