

**VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY  
COLLEGE OF NATURAL RESOURCES**

*Syllabus*

**HUMAN ECOLOGY**

**NR 5884, 3 Credits, CRN 61840  
SUMMER SESSION 2009**

**Class Location:**

Room TBD, Northern Virginia Center,  
7054 Haycock Road, Falls Church, Virginia

**Meeting Times:**

Monday evenings, 7:00-9:45 p.m.  
Classes start on June 1 and end on August 10, 2009.

**Instructor:**

Jane Netting Huff, Ph.D.  
Office: 5001 White Flint Drive, Kensington, MD 20895  
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**Office Hours:**

By appointment.

**Course Description:**

Although existing in habitats of their own design, humans cannot escape the biological and physical constraints on energy use, food production, population and interactions with other species. Applying ecological principles, students examine the interactions of the human population, the use of renewable and non-renewable resources and pollution problems and solutions. Course discussions focus on the ecological, economic and political considerations of dealing with environmental problems in the new century.

**Objectives:**

- Understand the basic ecological principles that underlie all life on this planet and how these principles constrain or enhance human activities.
- Understand the requirements of natural ecosystems for perpetuation and persistence.
- Understand the historical development of human interaction with world ecosystems.
- Understand the political, economic and sociological implications of modern human life.
- Identify and use class topics and background material to analyze and report on a current solution to a human ecological problem.

**Texts:**

*State of The World - 2007*, published by the Worldwatch Institute.

Marten, Gerald G. 2001. *Human Ecology: Basic Concepts for Sustainable Development*. Earthscan.

Kormondy, Edward J. & Daniel E. Brown. 1998. *Fundamentals of Human Ecology*. Prentice-Hall.

Also the *World Population Data Sheet* published by Population Reference Bureau will be required. This can be purchased from the instructor.

| <b>Date</b>     | <b>Topic</b>   |
|-----------------|--|
| (26 May         | no class - Memorial Day Holiday)   |
| 1 June          | 1. Introduction: Humans in the natural world - ecology and ecosystems.         |
| 8 June          | 2. Population in perspective: How many are we? How many will we be?            |
| 15 June         | 3. Energy in ecosystems. Human energy requirements.                            |
| 22 June         | 4. Water: How we use it and misuse it.   |
| 27 June         | Saturday - Field Trip –9:00-2:00 : site & topic TBA                            |
| 29 June<br>out. | 5. The air we breathe and our green house. Take-home mid-term exam handed out. |
| 6 July          | 6. Mineral resources and recycling. Mid-term exam due.                         |
| 13 July         | 7. Food and agriculture. What will we eat?                                     |
| 20 July         | 8. Getting a better yield. Chemicals, genetic engineering and organic farming  |
| 25 July         | <b>Saturday</b> – Field Trip – 9:00 –2:00 site & topic TBA                     |
| 27 July         | 9. Land, wilderness, living space - How shall we share?                        |
| 1 August        | 10. Other Species - will there be room for them?                               |
| 10 August       | 11. Student Presentations  |

**Field Trips:**

Two Saturday field trips will be planned. An additional, optional, field trip may be offered. Each student will be expected to attend at least one field trip.

### **Course Requirements and Grading:**

Class participation is 40% of the final grade, making class attendance essential to receive a passing grade. (Some accommodation will be made for students who must miss a class due to travel associated with their employment).

Mid-term exam is 20% of the final grade.

Term paper. The final exam will be a term paper, a case study analysis of some current problem of human interaction with our environment. The required length is 15 pages, single spaced. Charts and figures may be included. Scientific references will be expected. Topics will be provided by the instructor at the beginning of the class. Students must describe the problem in detail and discuss current or possible future solutions. An outline of the paper will be handed in by July 19<sup>th</sup>. Students will present a summary of their topics orally to their peers during scheduled class sessions. These summaries may be presented in any format and should take no more than 15 minutes. Term paper is 40% of the final grade.

### **Books Worth Reading:**

Because books on these subjects get very old quickly, I recommend that you also follow current articles in magazines and newspapers for up-to-date information. For those students who feel rusty on their ecology, any general ecology textbook, published in the last five years or so, should provide a good review.

- Brown, Lester. 2001. *Eco-Economy*. Norton;1981. *Building A Sustainable Society*. Norton/Worldwatch; 1978. *The Twenty-ninth Day: Accommodating Human Needs and Numbers to the Earth's Resources*. Norton/Worldwatch; and numerous other books..
- Carson, Rachel. 1962. *Silent Spring*. Houghton-Mifflin.
- Diamond, Jared. 2005. *Collapse: How Societies Choose to Fail or Succeed*. Viking; 1998. *Guns, Germs, and Steel*. Norton.
- Ehrlich, Paul & Anne Ehrlich. 1996. *Betrayal of Science and Reason*. Island Press; 19 . *The Population Bomb*; 1981 *Extinction*. Random House.
- Eldridge, Niles. 199 . *Life in the Balance: Humanity and the Biodiversity Crisis*. 1995. *Dominion*. Univ. of California Press.
- Flannery, Tim 2006. *The Weather Makers: How Man is Changing the Climate and What It Means for Life on Earth*. Atlantic Monthly Press.
- Gibbons, Whit. 1993. *Keeping All The Pieces*. Smithsonian.
- Gore, Al. 2006. *An Inconvenient Truth*. Rodale; 1993. *Earth in the Balance: Ecology and the Human Spirit*. Plume Books.
- Little, Charles E. 1995. *The Dying of The Trees*. Penguin.
- McMichael, A.J. 1993. *Planetary Overload*. Cambridge.
- McNeill, J.R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth-Century World*. Norton.
- Myers, Norman. 1979. *The Sinking Ark*. Pergamon Press. 1993. *Gaia: An Atlas of Planetary Management*. Doubleday. And numerous other books.
- Peterson, Dale. 2003. *Eating Apes*.California.
- Perlin, John. 1989. *A Forest Journey*. Norton

Pirages, Denis C. (ed.) 1996. *Building Sustainable Societies: A Blueprint for a Post Industrialized World*.  
Schneider, Stephen H. 1989. *Global Warming*. Sierra Club Books.  
Tudge, Colin. 1991. *Global Ecology*. Oxford.  
Wallace, David Rains. 1987. *Life in the Balance*. Harcourt Brace.  
Weiner, Jonathan. 1980. *The Next One Hundred Years*. Bantam.  
Wilson. Edward O. 2003. *The Future of Life*. Time Warner.

Also: The Worldwatch Institute publishes several monographs/papers every year on these topics.  
[www.worldwatch.org](http://www.worldwatch.org)

### **Honor Policy**

The tenets of the Virginia Tech Graduate Honor Code will be strictly enforced in this course, and all assignments shall be subject to the stipulations of the Graduate Honor Code as outlined in the 2003-2004 Graduate Catalog. For more information on the Graduate Honor Code, please refer to the GHS Constitution, located online at <http://fbox.vt.edu/studentinfo/gradhonor/> Please contact the instructor immediately if you have questions.

### **Special Accommodations**

Students with special needs or circumstances are encouraged to meet with the instructor after the first class. If you need adaptations or accommodations because of a disability (learning disability, attention deficit disorder, psychological, physical, etc), if you have emergency medical information to share with the instructor, or if you need special arrangements in case the building must be evacuated, please make an appointment with the instructor as soon as possible (See contact information above). If you need captioning for videos, please let me know no later than two weeks in advance of date for viewing.

### **Course Evaluations**

In the spirit of continuous improvement, the instructor seeks ways to improve this course and values your input. To that end, you will be asked to complete an evaluation on TBD. At any point during the course, your suggestions and comments are most welcome.

### **Inclement Weather**

Decisions about canceling classes during periods of inclement weather are made by the Northern Virginia Center Director in consultation with others. Students should listen to local media for information, but weather-related advisories affecting classes are posted at [www.ncr.vt.edu](http://www.ncr.vt.edu) and announced on the Weather Alert Line 703-538-8325.

**NOTE:** The course syllabus is a work in progress. Changes and updates will be made to accommodate the needs and interests of the students.