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Course Syllabus - BIOL 549

Biodiversity and Conservation

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- Key Textbooks and Class Resources:
 - Key Web Documents - *Sustainable Development*
 - History of the *Sustainability* and *Development* Concepts
 - History of the *Development* concept
 - History of the *Sustainability* concept
 - Theoretical Explanations in Development
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 - Definitions of *sustainability* and *sustainable development*
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Description

Catalog Description:

Provides an advanced interdisciplinary analysis of biodiversity conservation and related science policy issues. Areas of focus selected from topics such as geo-information science for biodiversity, sustainability science in conservation, agricultural biodiversity, biotechnology and genetic resources, poverty reduction and trade competitiveness, human health and disease, global environmental governance, and natural resource management issues such as: agroforestry, drylands goods and services, mountain development, integrated water resource management, and sustainable tourism. Taught as a seminar, discussions will be enhanced with case studies, simulation games, lab exercises,

and student presentations.

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Introduction

This is a graduate-level course designed to introduce the student in an integrative manner to the exciting field of **Sustainable Development Policy and Biodiversity Conservation**--see **Course Objectives** and **SCHEDULE**. The course will explore the concept of "sustainability Science " and how it applies to the field of **Biodiversity and Conservation** as well as related areas such as: health, knowledge management, agriculture, natural resource management, poverty reduction, and so on.

Key Textbooks and Online Resources:

Class Resource Materials:

The resources listed under **TOOLS** provides many **resource links**, **theme-publications**, research groups, online courses, for you to consult and use during the course. See **class bibliographic resources by THEME as well**. More resources are available with the course **SPOL 624 - Nature Society Thought** as well as other general **LINKS ON CULTURAL ECOLOGY**. See also online resources produced by the **VGD (Virtual Geography Department)** and its various resource groups including cultural geography, world regional and area studies and others such as the **EES (Earth's Environment and Society)**.

Key Textbooks:

- Heide, Gale. 1998. *This is My Father's World. A Unique Perspective on Environmental Ethics*. Joy Publishing. **BUY THIS BOOK HERE**.
- *America's Living Oceans: Charting a Course for Sea Change: A Report to the Nation Recommendations for a New Ocean Policy*. May 2003. Pew Oceans Commission (Powerpoint) - **Pew Charitable Trusts - Executive Summary - PDF - Full Report - PDF**
- *Global Threats to Coral Reefs - Chapter 1: Global Threats to Coral Reefs: Coral Bleaching, Global Climate Change, Disease, Predator Plagues, and Invasive Species*.(PDF): *Status of Coral Reefs of the World: 2004--Vol 1 (full document PDF)* - **Jeremy Goldberg and Clive Wilkinson**.
- **Millennium Ecosystem Assessment) *Overview Synthesis Report: Millennium Ecosystem Assessment Synthesis Report downloads - PDF***
 - **MEA Powerpoint Presentations** (Findings - full slide show) (20-minute presentation) (MA Board Statement)
 - **Millennium Ecosystem Assessment Project** - see **REPORTS (download reports HERE)**:
 - **Living Beyond Our Means: Natural Assets and Human Well-being** (Statement of the MA Board)
 - **Millennium Ecosystem Assessment Synthesis Report downloads**

(PDF)

- **Biodiversity Synthesis Report (PDF)**
- **Desertification Synthesis Report (PDF)**
- **Business & Industry Synthesis Report (PDF)**
- **Ecosystems and Human Well-Being: A Framework for Assessment** (see also **Island Press**)
- **Riordan, Timothy and Susanne Stoll-Kleemann. 2002. *Biodiversity, Sustainability and Human Communities: Protection beyond the Protected*. Cambridge University Press. **ON RESERVE (With Dept. EBS Secretary)****
- **Center for Biodiversity Conservation - American Museum of Natural History: *Biodiversity, Science, and the Human Prospect*. 1999. PDF - *Download from Blackboard*.**
- **Harvard Medical School Center for Health and the Global Environment. *Biodiversity: Its Importance to Human Health* (PDF*)**. A Project of the Center for Health and the Global Environment, Harvard Medical School, under the Auspices of the World Health Organization (WHO) and the United Nations Environment Programme (UNEP).
- ***Interpreting Biodiversity: A Manual for Environmental Educators in the Tropics***. Center for Biodiversity Conservation - American Museum of Natural History.
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- ***The National Biological Information Infrastructure: Shaping the Future*** (see brochure: <http://www.nbi.gov/about/pubs/nbiibrochure/>)
- **-Society for Environmental Education (SEE) - Biodiversity and Human Health -Ecology.org - Online Slide sho**
- **Stanford Encyclopedia of Philosophy - *Biodiversity***

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Course Objectives

1. What is "biodiversity" and what is meant by the mantra in development literature known as "sustainability science " and how does it fit within biodiversity conservation science?
2. Evaluate how the international donor system functions and the institutional and political processes that impact how "sustainable development" is implemented--particularly "conservation and biodiversity". Focus on the critical role of the UN system, bilateral donors, multinational business, NGO's, PVO's, and private-commercial sector in development.
3. Analyze selected case studies illustrating the evolution of sustainability-thinking and conservation policy decision-making as it pertains to specific "critical environmental zones" and regions: semi-arid/arid regions, montane zones, coastal/insular regions, tropical forests, river basins.
4. Consider the concept of "environmental security" as a unifying theme and paradigm for analysis and intervention at the state and global level. Focus specifically on global environmental policymaking, treaty formulation and coordination. Analyze specific case studies dealing with disasters (natural and human-induced) as well as global environmental threats, e.g. ozone depletion, desertification,

- deforestation, biogeochemical cycle disruption, water management, species conservation.
5. What is the future of sustainable development planning and policy analysis from a career perspective--how does one get into this field?
 6. How does one link-up with evolving thought and activity in this arena?
 7. Show students how to use network skills to access organizations and affect decision-making.
 8. Consider some of the basic policy issues and problems of implementing sustainable development and conservation in both urban and rural regions of the developing and developed world.

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Grading and Assignments

Grades will be based upon performance in **THREE** areas:

1. (10%) **Active participation and attendance** to lectures and class discussions face-to-face as well as faithfully submitting reviews online via BLACKBOARD as assigned by the instructors!
2. (40%) **Class presentations/discussions bi-weekly** ("a") and ("b") reviews of online resources submitted via BLACKBOARD:
 - a. **KEY ASSIGNED READINGS and CLASS DISCUSSION on four KEY TOPICS** led alternatively by Robert Ford and Stephen Dunbar. 60-90 MINUTES of discussion on days listed in **SCHEDULE**. Students will have read BEFORE arrival and come ready to answer questions and participate intelligently in the analysis of the report/readings :
 - **Robert FORD** leads the following discussions:
 1. **MEA Overview Synthesis Report: Millennium Ecosystem Assessment Synthesis Report downloads - PDF)**
 2. **MEA Overview Synthesis Report: Desertification Synthesis Report - PDF)**
 - **Stephen Dunbar** leads the following discussions:
 1. **Marine Biodiversity and Conservation:**
 - ***America's Living Oceans: Charting a Course for Sea Change: A Report to the Nation Recommendations for a New Ocean Policy.* May 2003. Pew Oceans Commission (Powerpoint) - Pew Charitable Trusts - Executive Summary -PDF - Full Report - PDF**
 - ***Global Threats to Coral Reefs - Chapter 1: Global Threats to Coral Reefs: Coral Bleaching, Global Climate Change, Disease, Predator Plagues, and Invasive Species.(PDF): Status of Coral Reefs of the World: 2004--Vol 1 (full document PDF) - Jeremy Goldberg and Clive Wilkinson.***
 2. **Christian Conservation and Biodiversity Ethics** - Assigned booklet: Heide, Gale. 1998. ***This is My Father's World. A Unique Perspective on Environmental Ethics.*** Joy Publishing. **BUY THIS BOOK HERE**
 - b. **In-Class-lab activities** and online **REVIEWS OF KEY RESOURCES AND ORGANIZATIONS** (to be explained in class). These activities will occur on alternate weeks from the formal discussions/readings assigned under "a" above.
3. (50%) **Research Paper and Powerpoint Presentation:** Overview **Powerpoint** presented

on **December 7, 2005** while final **WRITTEN PAPER** submitted no later than **5:00 PM December 16 online via BLACKBOARD.**

- The written paper should be a **minimum of 12-15 pages for the "core/essay" material** - excluding title page, bibliography, and supplementary illustrations in the **Appendix.**
- **DO NOT fill your 12-15 pages with illustrations only.** Most illustrations should be in the Appendix or you should extend the length of the paper if your illustrations are included interspersed in the document itself!
- You will submit your **Revised Powerpoint** with the **Paper** (in either Microsoft WORD or PDF file format) via **BLACKBOARD no later than 5:00 PM December 16.**
- Grading of your paper and presentation will utilize the following **Criteria-Rubric.** **We will also ask students to evaluate your powerpoint presentation and oral style as well.**

Each student will select a **specific problem or issue** within the arena of **Biodiversity and Conservation** to explore in more depth. Your instructors will help you choose, and **you must get permission before finally choosing a topic.** Changes may be made in choice of final project, but no later than **OCTOBER 26** - approximately half way through the course

Some suggestions for possible topics:

- geo-information science, regional science and biological conservation
- wildlife conservation and sustainable livelihoods
- international conventions for species conservation policy issues
- land and property rights, entitlement issues in conservation
- knowledge management and information technology applied to conservation
- population-land-environment interaction
- sustainable agricultural production and agro-ecosystems
- poverty reduction and trade competitiveness and conservation
- women, gender and biodiversity conservation
- risk assessment, industrial ecology and pollution
- Carrying capacity, land degradation and population pressure
- political (cultural) ecology theory and history in biodiversity
- global health and disease and biodiversity
- biotechnology and genetic resources
- global environmental governance and security and biodiversity
- ethno-ecology and ITK (indigenous knowledge systems)
- regional and sectoral natural resource management issues such as:

- agroforestry,
- drylands goods and services,
- mountain development,
- river basin water resource management,
- sustainable tourism and biodiversity
- coastal and insular zone management,
- Antarctica and polar zone issues

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Grading Rubric:

For an A grade:

Above 94% on all reports, reviews, presentations and take-home exercises as well as **exceptional** work on the **research project** (see above). To get an A you must demonstrate high creativity, initiative, resourcefulness in all areas of the course and have an excellent participation and attendance record as well.

For a B grade:

For a B+ you must get above 87% in all all reports, reviews, presentations and take-home exercises and **good** work on the final project. For a B you must achieve between 84 - 86% and a B- will be given to those scoring between 80 - 83%.

For a C grade:

Below 80% on reports and below average writing on take-home exercises/ projects and below average participation and attendance: C+ = 75 -79%, C = 70 -74%, C- = 65 - 69%.

For a D or F grade:

To get a D+ = 60 - 64% and D = 55 - 59%; D- = 50 - 54%. Below 50% is a failing grade = F

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Procedures and Regulations:

No make-up will be allowed except by prior arrangement for **good cause** (official University business and death in the immediate family). In all cases you must notify the instructor **before** you make-it-up. Make-up work must be normally taken **within one week** of the missed project is due.

Doing your best consists in:

- regular attendance and participation in all class discussions and activities,
- reading required assignments before you come to class,
- handing-in or doing assignments on time--this also applies to **class presentations** where the
- quality of your presentation in terms of visual/graphical appeal are evaluated AND
- clarity, organization and quality of material given in the oral presentation.

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Notes on Communications:

1. Throughout the entire course a strong emphasis will be put on encouraging students to practice and perfect various forms of written, oral and graphic communication--emphasis on use of HTML Web-based material as well as use of maps and charts. See the following list of **Web Publishing Resources** for more information how to publish on the web.
2. See also the various **WWW Resources** relating to cartography, map and aerial photo interpretation, **GIS/RS** (remote sensing), and so on included in the **ESS course (ESSC 541-542)**. See also -- **Resources for Earth System Science**.

3. Students will also be expected to learn to use basic **electronic communications** effectively such as email. Much of the course will be carried out online via the **BLACKBOARD** site.
4. **Monitoring of participation to asses evidence of interaction with people and resources beyond the course--in THE REAL WORLD--is encouraged and demanded!** Students will also be shown **HOW TO ACCESS ONLINE (INTERNET) DATA** in the course. One of the goals is to not only teach good email writing skills and *netiquette*, but more important **HOW TO USE THE INTERNET** to do **research and communicate across the globe** with other students as well as experts in their areas of interest.

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Time and Location - Project and Assignment Due Dates

1. **LOCATION AND TIME**: Course meets in the Nelson House Computer Lab - 8:00 -11:00 am on Wednesday's. First Class September 28, 2005.
2. **ONLINE DISCUSSIONS AND ASSIGNMENTS SUBMISSION** via **BLACKBOARD**
3. **Final Project Oral/Class Project Powerpoint Presentations - December 7, 2005 - see SCHEDULE**
4. **Final Written Paper Due December 16, 2005 - see SCHEDULE**

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