

EVR 4026 – Biotic Resources
Mon, Wed & Friday 3:00-3:50 PM
Instructor: Dr. Jay Sah
E-mail: sahj@fiu.edu

Spring Semester 2008
Location: OE 100
Office: OE 218
Office Hrs: M/W 10-11.30 AM or by appt.

Course Description

This course describes the ecology and sustainable management of biotic (living) resources. We will explore the use and management of biotic resources in ecosystem perspective, and emphasize on linkage among Earth's ecosystems, the critical services they provide and human well-beings.

Required and Recommended Reading

The main required readings are the **i) Ecosystems and Human Well-Being: a) Synthesis Report, and b) Biodiversity Synthesis** of the 'Millennium Ecosystem Assessment' (abbreviated MEAs and MEAbs, respectively), and **ii) People and Ecosystems: The Fraying Web of Life** of the 'Pilot Analysis of Global Ecosystems' (abbreviated PAGE) and its five supporting documents, one each for five major ecosystems (agro-ecosystems, coastal, forests, grasslands, and freshwater). These reports are available to download on-line. Alternatively, you can order printed copies on Amazon.com. Other recommended readings will be posted on the course web site. Current address of the course website is: <http://www.fiu.edu/~sahj/EVR4026/EVR4026.htm>. Ultimately, we will communicate through <http://online.fiu.edu/CE6>.

Course Objectives

This course explores the relationship between human beings and major ecosystems including: agricultural, coastal, forest, grassland, freshwater and urban. These ecosystems and the services they provide are pillars of the life support system of our planet. Through the provided reading materials, class discussions and term papers we will study the impact of human beings on the global ecosystems, particularly the impact of consumptive use of biotic resources, and then explore ways in which Earth's biotic resources can be managed for the well beings of the growing human population.

Learning Outcomes

Students will become familiar with the status of major global ecosystems and the services they provide, and the case studies presented in the Pilot Analysis of Global Ecosystems report, four different future scenarios, options for sustainable management of biotic resources, and findings of the Millennium Ecosystems Assessment. This understanding will be assessed through quizzes, a term paper, a mid-term exam and a final exam. Students will also practice sharing information with their peers through an in-class presentation.

Class participation

Class participation is strongly encouraged. For class participation, students will be required to take part in class discussion, and to give a 20-25 minute (individually or in group of two) Powerpoint presentation. The presentation will be based on a term paper (see below) to be written on a topic related to the Ecosystem Assessment.

Term paper

Students (individually or in group of two) will be required to write a term paper on a topic in which they can explain the use of biological resource, discuss its impact on ecosystem services, and summarize ways for sustainable resource management. You will choose a topic related to one of major global ecosystems, including (but not limited to) agro-ecosystem, coastal, forest, grassland, freshwater and urban. You may choose a topic related to the case studies on sustainable resource management from Chapter 3 in the PAGE report or a different topic relevant to South Florida, as it will be easier to find adequate references. The last date to give the 2-3 possible title of your term paper to the instructor is February 1st. Topics will be assigned on a first-come, first-served basis. Term paper should 8-12 double-spaced pages in length (using 12-point font), excluding literature cited section. Final term paper is due before 5.00 pm on April 16th.

Tentative lecture schedule

DATE	TOPIC	REQUIRED READING
Jan. 7	Syllabus, Introduction (MEA & PAGE)	Handouts, Articles on web site
Jan. 9	Ecosystem science, World's ecosystems	MEA _s pp. 26-38,
Jan. 11	Ecosystem services	MEA _s pp 39-48
Jan. 14	Ecosystem services & human well-being	MEA _s pp. 49-63
Jan. 16	Biodiversity and Ecosystem services	MEA _{bd} pp. 18-29
Jan. 18	Biodiversity and human well beings	MEA _{bd} pp. 30-41
Jan. 23	Drivers of ecosystem changes	MEA _s pp. 64-70, MEA _{bd} pp. 42-59
Jan. 25	Agricultural ecosystems and human well beings	PAGE Ch. 2: pp. 53-68
Jan 28	Agricultural ecosystems & biodiversity	PAGE (Agro) pp. 63-74
Jan. 30	Sustainable agriculture – Kenya, Cuba	PAGE Ch. 3: pp. 149-162
Feb. 1	Forest ecosystems – goods and services	PAGE Ch. 2: pp. 87-102
Feb. 4	Forest ecosystems and biodiversity	PAGE (Forest): pp. 45 -54
Feb. 6	Sustainable forest management – India	PAGE Ch. 3: pp. 181-192
Feb. 8	Coastal ecosystems services and human well beings	PAGE Ch. 2: pp. 69-85
Feb. 11	Coastal ecosystem - mangroves, biodiversity	PAGE (Coastal): pp. 39-50
Feb. 13	Coastal ecosystem – marine fishery	PAGE (Coastal): pp. 51-62
Feb. 15	Coastal resource management – Everglades	PAGE Ch. 3: pp. 163-180
Feb. 18	Mid-term exam review	
Feb. 20	MID-TERM EXAM	
Feb. 22	Grassland ecosystems – goods and services	PAGE Ch. 2: pp. 119-131,
Feb. 25	Grassland ecosystems and biodiversity, C ₃ & C ₄ grasses	PAGE (Grassland): pp. 39-48, TBA
Feb. 27	World's (grassland) ecosystems without 'Fire'	Bond et al. 2005
Feb. 29	Sustainable rangeland management - Mongolia	PAGE Ch. 3: pp. 212-224
Mar. 3	Freshwater systems – goods and services	PAGE Ch. 2: pp. 102-118
Mar. 5	Freshwater systems – Inland fisheries	PAGE (Freshwater): pp. 41-47
Mar. 7	Plant cover and freshwater resources – S. Africa	PAGE Ch 3: pp 193-211
Mar. 10	Sustainable Wetland Resource Management	TBA
Mar. 12	Mountain ecosystems	PAGE Ch. 2: pp. 133-135
Mar. 14	Floodplain ecosystems – sustainable management - Amazon	Junk et al. 2000 & others
Mar. 24	Polar ecosystems	PAGE Ch. 2: pp. 136-139
Mar. 26	Urban ecosystems	PAGE Ch. 2: pp. 141-145
Mar. 28	Global change impacts on ecosystem services	Schröter et al. 2005 & others
Mar. 31	Global change – challenges & opportunities for resource mgt.	TBA
Apr. 2	MEA scenarios	MEA 70-82
Apr. 4	Options for sustainable resource management	MEA 92-100; MEA 1-24
Apr. 7	MEA findings	
Apr. 9	Presentations	
Apr. 11	Presentations	
Apr. 14	Presentations	
Apr. 16	Final exam review	
Apr. 23	Final exam	

Quizzes and Exams:

Ten quizzes will be given at the beginning of the class on random dates, 5 before mid-terms and 5 between mid-term and final exams. Quizzes will be based on the materials covered in the previous class. Mid-term and final exams will be given on the dates mentioned in the syllabus. However, the schedule (date and time) for the final exam is subjected to change, based on the FIU schedule.

Grading policy:

Assessment:		Pts.
Attendance/Participation	5%	25
Quizzes	5%	25
Term paper & Presentation	20%	100
Mid-term	30%	150
Final Exam	40%	200
Total	100%	500

Grading Scale	Pct.
A- to A	90-100%
B- to B+	80-89%
C- to C+	70-79%
D- to D+	60-69%
F	<60%

Course Expectations:

- **Attendance Policy:** Attendance is compulsory. Attendance will be recorded ten (10) random times during the course of the semester. If you do not sign the attendance sheet, you will not receive credit for attendance unless you provide an official, written, dated excuse (for example, medical excuses, police accident reports, etc. are OK, while family functions, vacation, travel, traffic, car trouble, routine check-ups, etc. are NOT valid excuses for missing class). If you miss 3 or more attendance checks, you will receive 0 (zero) points for the attendance/participation portion of your grade.
- If you plan to observe specific **religious holidays**, let me know at the beginning of the semester.
- If you miss a class, it is **your** responsibility to get the information from your classmates.

- **Missed Exam/Presentation/Quiz Policy:** If you skip your exam, presentation or quiz, you will receive 0 pts for that assignment. Missed exams can only be made-up given a valid excuse with appropriate documentation (see attendance policy above). Quizzes will be held during the first 10 minutes of class. You will only be able to make up a quiz if you have a valid excuse. You may drop the lowest quiz grade at the end of the semester.

- **Cell phones** must be turned off during class. If you forget and your phone rings, do not answer the call in class or leave class to answer a call.

- If you have a **learning disability** and need assistance, I will make every effort to create a satisfactory learning environment. Please notify the Office of Disability Services for Students (<http://www.fiu.edu/~disser/>) and me at the start of the semester to make arrangements for the appropriate modification and/or assistance.

** Due to unforeseen circumstances, this syllabus may be subject to change!!!*

Student Code of Academic Integrity

Every student must respect the right of all to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students must adhere to a standard of academic conduct, demonstrating respect for themselves, their fellow students, and the educational mission of the University.

- I will practice civility and avoid behavior that undermines the normal functioning of the University.
- I will not cheat, nor will I aid in another's cheating.
- I will not represent someone else's work as my own.
- I will be honest in my academic endeavors.
- I understand that if I am found responsible for academic misconduct, I will be subject to the academic misconduct procedures and sanctions as outlined in the Student Handbook.

I have read and will abide by the above Academic Code.

Signature: _____