GEORGE MASON UNIVERSITY

Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

[x] Create new course [ ] Delete existing course

[ ] Modify existing course (check all that apply)

[ ] Title [ ] Credits [ ] Repeat Status [ ] Grade Type

[ ] Prereq/coreq [ ] Schedule Type [ ] Restrictions

[ ] Other:

Course Level:

[x] Undergraduate

[ ] Graduate

College/School: College of Science **Department:** Environmental Science and Policy

Submitted by: Changwoo Ahn **Ext:** 3-3978 **Email:** cahn@gmu.edu

Subject Code: BIOL **Number:** 378

(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term: [ ] Fall [x] Spring [ ] Summer *Year* 2011

Title:

Current

Banner (30 characters max including spaces)

New Wetlands of the World

Credits: (check one) [x] Fixed [ ] Variable or to

Repeat Status: (check one) [x] Not Repeatable (NR) [ ] Repeatable within degree (RD) [ ] Repeatable within term (RT) Maximum credits allowed:

Grade Mode: (check one) [x] Regular (A, B, C, etc.) [ ] Satisfactory/No Credit [ ] Special (A, B C, etc. +IP)

Schedule Type Code(s): (check all that apply) [x] Lecture (LEC) [x] Lab (LAB) [ ] Recitation (RCT) [ ] Internship (INT) [ ] Independent Study (IND) [ ] Seminar (SEM) [ ] Studio (STU)

Prerequisite(s):

BIOL 307 or 308

Corequisite(s):

Instructional Mode:

[x] 100% face-to-face

[ ] Hybrid: ≤ 50% electronically delivered

[ ] 100% electronically delivered

Special Instructions: (list restrictions for major, college, or degree;hard-coding; etc.)

Are there equivalent course(s)? [ ] Yes [x] No

If yes, please list

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	**Notes** (List additional information for the course)
A study of the ecosystems of the world. Emphasizes different types of wetland ecosystems and their services, including water quality, coastal protection, flood mitigation and wildlife protection. The course includes trips to local wetlands and to the Everglades National Park.	

Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 3

When Offered: (check all that apply) [ ] Fall [ ] Summer [x] Spring

Approval Signatures

Department Approval Date

College/School Approval Date

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member

Provost Office

Graduate Council Approval Date

For Registrar Office's Use Only: Banner_____Catalog_____

revised 2/2/10

Course Proposal Submitted to the COS Curriculum Committee

COURSE NUMBER AND TITLE

BIOL 378: Wetland Ecosystems of the World (4:3:3)

COURSE PREREQUISITES : BIOL 307 or 308, or permission of the instructor.

CATALOG DESCRIPTION: BIOL 378: Wetland Ecosystems of the World (4:3:3)
A study of the ecosystems of the world. Emphasizes different types of wetland ecosystems and their services, including water quality, coastal protection, flood mitigation and wildlife protection. The course includes trips to local wetlands and to the Everglades National Park.

COURSE JUSTIFICATION:
This is an interdisciplinary course that would provide both literature-based knowledge and hands-on field experiences of wetland ecosystems, including a field trip to one of the world's largest wetland complexes, the Everglades Each student will participate in a group project throughout the semester that will involve field trips, literature review, data collection and most of all, extensive field activities in the Everglade Long Term Ecological Studies station at Florida International University. The course will help students develop an integrated understanding of wetland ecosystem and their services to society.

COURSE OBJECTIVES
The course is intended to provide students with:
1) A firm grasp of fundamental scientific principles governing various types of wetland ecosystems, including the Everglades;
2) An understanding of the key role that humans have played in wetland ecosystem over the years; and
3) Knowledge and direct experience with research projects and restoration plans available for the Everglades.

COURSE NECESSITY:
There has been a lack of courses at the undergraduate level that would provide students with a basic understanding of ecosystem ecology. In addition, this course helps students understand major ecological questions of today related to the ecosystem services provided by wetlands.

COURSE RELATIONSHIP TO EXISTING PROGRAMS
This will be an undergraduate course for majors in the new BS program in ESP and an elective for the B.A. and B.S. degrees in Biology.

COURSE RELATIONSHIP TO EXISTING COURSES
The course proposed fits well with basic courses (i.e., ecology, biodiversity, and environmental science) that are currently provided under Biology and Environmental Science. Students should be able to apply the knowledge acquired previously through prerequisites in this course while gaining a great field trip experience.

Semester of Initial Offering: Spring 2011

Proposed Instructor: Dr. Changwoo Ahn

Tentative Syllabus attached

BIOL 378 **SPRING SEMESTER 2011**

Wetland Ecosystems of the World

INSTRUCTOR:	**Dr. Changwoo Ahn** Associate Professor of Environmental Science and Policy
OFFICE:	3034 David King Hall (office hour: Thursdays 4-6 pm or anytime by emails)
PHONE:	(703) 993-3978
E-MAIL:	cahn@gmu.edu
WEBSITE:	http://mason.gmu.edu/~cahn

CLASS TIME: Lecture/discussion: 9:00 -10:15 AM
Tuesdays/Thursdays or Mondays/Wednesdays

Field Trips: Two Saturdays and the week of spring break or the final week of the semester

CREDIT HOURS: 4

PREREQUISITE: BIOL 307 or 308 or permission of instructor.

COURSE DESCRIPTION:
A study of the ecosystems of the world. Emphasizes different types of wetland ecosystems and their services, including water quality, coastal protection, flood mitigation and wildlife protection. The course includes trips to local wetlands and to the Everglades National Park.

REQUIRED TEXT: Mitsch WJ. 2009. Wetland Ecosystems. John Wiley & Sons, Inc., New York, NY

COURSE OBJECTIVES

The course is intended to provide students with:

1) A firm grasp of fundamental scientific principles governing environmental systems including the cycling of matter, the flow of energy and the role of feedback;

2) An understanding of the key role that humans now play in the biosphere -- how and why we alter ecosystems, the state of our ecological support system and current trends;

3) Knowledge and a bit of direct experience with the design options and strategies available for generating a more sustainable relationship between humans and the rest of the natural world.

COURSE FORMAT: Class will be a mixture of lecture, literature reading, small group discussion, and projects and presentations. I expect you to complete the assigned readings prior to each class. Each class participant will be required to conduct a class project and prepare presentations on the outcomes of the project. The theme will be given by the instructor. The course also includes book reviews and discussion on several timely topics, especially on wetland ecosystem services and human interaction with wetlands. Grades will be based on book review summary, field trip report, group activities for design project, project paper and presentation and exams.

HANDOUTS: Copies of papers and other documents will be handed out in conjunction with class lectures. Unless otherwise noted, students are generally responsible for material contained in these handouts for course examinations.

COURSE POLICY AND EXPECTATIONS: Class attendance is strongly recommended. Be punctual. Lateness is disruptive and disrespectful to your peers and to me and will affect your participation grade. I expect each of you to be present and prepared for each class. This will involve having read the assigned material before each class. *Academic dishonesty* will not be tolerated (honor code responsibilities). *Minor changes in course organization and content* may be required throughout the semester. Students will be made aware and asked for input if such actions are needed.

LET ME KNOW if you have any documented learning or other disability and if you wish to discuss academic accommodations. The Disability Resource Center can also help you or direct you toward help with a wide range of learning, studying, mental health, career, and physical disability issues (located in Student Union Building I, Room 222; Tel: 703- 993-2474; http://www.gmu.edu/student/drc/services.html).

CLASS E-MAIL AND COMMUNICATIONG WITH ME:
I will frequently e-mail to remind you of deadlines or to clarify points from a lecture. Please use GMU e-mail (**@gmu.edu) to facilitate any communication or discussion. Please check your e-mail **daily**. All assignments should also be submitted electronically though email attachment unless it is larger than 10 MB in size. Consult the instructor for larger files. I will do my best to respond to email within 24 hours. If you email a question of general interest, I will likely send my response to the entire class list. Be sure to take full advantage of your classmates, the library, and the web as learning resources. Finding answers and solutions among yourselves by tapping into the multitude of resources available to you is generally a more gratifying and educationally valuable approach than seeking answers from a single authority.

GRADING:	**% of Grade**
Lecture GRADING:	
Mid-term (I)	**20**
Final Exam (I)	**20**
Reading assignment summary (G)	**25**
Research Presentation and Discussion (G)	**10**
Lab	
Lab reports (I)	10
Field trip (G)-the Everglades	15
TOTAL POINTS	100

*I = Individual
**G = Group (2 people max.)

- Failure to meet deadlines for proposal and final manuscript submission will result in losing 2pts per day in their grading.

- Your course will be determined using the following straight scale: A (94-100), A- (90-93), B+(85-89), B (80-84), C (70-79), D (60- 69), F(<60)

A list of lecture topics.

1. Wetlands of the World
2. Wetland Ecosystem Ecology –Basics
3. Wetland components –Plants, Soils, and Water
4. Freshwater Wetlands
5. Coastal Wetlands

6. Peatlands
7. Wetland Creation and Restoration
8. Wetland Ecological Economics
9. Field Trip Preparation
10. The Everglade –special reading, including the Everglade Restoration

Laboratory Syllabus for 25% of grade

Lab/Field portion of EVPP (BIOL) 378

CLASS TIME: Field Trips: Two Saturdays and the week of spring break or the final week of the semester.

This class involves three field trips, including two trips to local wetlands, one to a natural wetland and the other to a create d wetland located in the coastal plain/piedmont region of Virginia. Each of the two local trips will be for a half-day.

1. Natural wetland and its restoration: Huntley Meadow Park.
2. Created wetland and wetland mitigation: North Fork wetland mitigation bank.
3. Trip to the Everglade National Park: either during the Spring break or during the final week of the semester.

(Trip being designed through the Center for Field Studies).

The lab portion of the course is worth 25 % of the grade with 10 % for field/lab reports for the trips to local wetlands and a lab report for the trip to the Everglade. The report will request information on vegetation, hydrology, soils, fauna and hu man uses of each system, including discussion on how each system is associated with human activities and human use.

REFERENCES: *Tiner, R. W. 1993. Field guide to coastal wetland plants of the southeastern United States, University of Massachusetts Press, Amherst, 328 pp.
*Tiner, R. W. 1988. Field Guide to Nontidal Wetland Identification Environmental Laboratory. (1987).
*Corps of Engineers wetlands delineation manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment

* All available in Wetland Ecosystem Laboratory (DK 3079a)

Also needed: field notebook (water-proof), pencil, calculator, old clothes and boots/shoes for fieldwork, rain gear, waders

LABS & FIELD TRIPS:

Students are required to participate in scheduled field trips, and to do lab assignment as necessary. Field trips are usually scheduled for Saturdays 9:00 AM –1:00 P.M (subject to change).

For the field trips wear shoes that can get wet or rubber boots. Transportation will not be provided for local field trips, car-pooling is strongly recommended. The cost of food (water and lunch) and your share of the transportation costs (i.e., gas) are at your own expense.

LAB REPORTS

Each field lab will require a short written report (2-3 pages; 900 - 1200 words limit) that will be due by next field/lab session. Field/Lab reports should include discussion on site description and history, hydrodynamics, landscape setting, vegetation, soil characteristics and your conclusive description. The Everglades report will be due two weeks after return from the trip.

Lab Grading (25 % of the grade)

Field/Lab reports (I)	10
Field trip (G)-the Everglade	15
Total	25

Directions and site description for local field trip

North Fork

1. Start at 4400 UNIVERSITY DR, FAIRFAX going toward OX RD go < 0.1 mi
2. Turn LEFT on OX RD(VA-123 S) go 0.6 mi
3. Bear RIGHT on BRADDOCK RD(VA-620 W) go 2.6 mi
4. Take ramp onto FAIRFAX COUNTY PKY(VA-7100 N) toward FAIRFAX CO PKWY NORTH go 2.5 mi
5. Take ramp onto I-66 W toward FRONT ROYAL go 15.2 mi
6. Take exit #40/HAYMARKET/LEESBURG go 0.3 mi
7. Turn LEFT on JAMES MADISON HWY(US-15 S) go 0.3 mi
8. Turn RIGHT on JOHN MARSHALL HWY(VA-55) go 0.9 mi
9. Turn RIGHT on ANTIOCH RD go 0.5 mi
10. Arrive at 6100 ANTIOCH RD, HAYMARKET on Left. This is the Boys Scout camp, which shares the entrance with the wetland.

Huntley Meadow Park

The Huntley Meadows website is: http://www.fairfaxcounty.gov/parks/huntley/index.htm
and the Friends of Huntley Meadows website is at:
http://friendsofhuntleymeadows.org/index.html

Directions to the park from GMU:

Travel Braddock Road North to 495 South (Richmond/Alexandria). Drive through the "mixing bowl" construction toward the Woodrow Wilson Bridge. The last exit prior to the bridge is Exit 177 (Richmond Highway/US Route 1); take Route 1 South towards Fort Belvoir. Travel 3 - 4 miles. Turn right at the light onto Lockheed Boulevard. Watch for the sharp right turn in the road – at this point you will turn LEFT into the park. It takes approximately 40-45 minutes to travel there from GMU. If you are traveling from any other areas try MapQuest using the address for Huntley Meadows: 3701
Lockheed Blvd. Alexandria, Va. 22306