



COURSE IMPLEMENTATION DATE: January 2008
 COURSE REVISED IMPLEMENTATION DATE: January 2012
 COURSE TO BE REVIEWED: February 2018
(six years after UPAC approval) *(month, year)*

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
 Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

GEOG 417	Geography	4
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS
Wetlands		
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

Wetland environments, though typically representing a small portion of the ecosystems that maintain them, provide critical ecosystem function. In this course we will evaluate wetland function across environmental gradients, the biogeochemistry that regulates these environments, and the flora and fauna that they support. In addition, we will evaluate wetland sediments as proxies and archives of past environmental change at a variety of spatial and temporal scales. Field trips outside of class time (required) will emphasize local wetland form and function.

Note: This course is offered as GEOG 417 and BIO 417. Students may only take one of these for credit.

PREREQUISITES: GEOG 315 or GEOG 317; or BIO 210 and one of BIO 307, BIO 330, or BIO 340
 COREQUISITES:
 PRE or COREQUISITES:

SYNONYMOUS COURSE(S):

- (a) Replaces: _____
- (b) Cross-listed with: BIO 417
- (c) Cannot take: BIO 417 for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: 75

STRUCTURE OF HOURS:

Lectures: 39 Hrs
 Seminar: _____ Hrs
 Laboratory: 12 Hrs
 Field experience: 24 Hrs
 Student directed learning: _____ Hrs
 Other (specify): _____ Hrs

TRAINING DAY-BASED INSTRUCTION:

Length of course: _____
 Hours per day: _____

OTHER:

Maximum enrolment: 25
 Expected frequency of course offerings: _____
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only) Yes No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department) Yes No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: Yes No

Course designer(s): <u>Jonathan Hughes</u>	Date approved: <u>November 9, 2011</u>
Department Head: <u>Michelle Rhodes</u>	Date of meeting: <u>January 13, 2012</u>
Supporting area consultation (Pre-UEC)	Date approved: <u>December 16, 2011</u>
Curriculum Committee chair: <u>Norm Taylor</u>	Date approved: <u>January 13, 2012</u>
Dean/Associate VP: <u>Ora Steyn</u>	Date of meeting: <u>February 3, 2012</u>
Undergraduate Education Committee (UEC) approval	

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:

- describe wetland classification at regional and global scales;
- explain biogeochemical cycles that define wetlands and regulate species distributions;
- collect and describe organic sediments in the field for laboratory analysis;
- determine and interpret physical qualities of wetland sediments;
- think critically and communicate within the discipline of wetland science; and
- demonstrate knowledge about wetland function that is transferable to a career in the environmental field

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Course format will include lectures, presentations, discussions, laboratory sessions, and field trips.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Examination(s) Portfolio assessment Interview(s)

Other (specify):

PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS: *[Textbook selection varies by instructor. Examples for this course might be:]*

Mitsch, W.J. and Gosselink, J.G. 2007. *Wetlands* (Fourth Edition). New York: John Wiley and Sons, Inc. 600 pp.

van der Valk, A.G. 2012. *The Biology of Freshwater Wetlands*. Oxford University Press, 296 pp.

Articles from peer-reviewed journals and government reports.

SUPPLIES / MATERIALS:

Waterproof field notebook

Possible field-trip fee

STUDENT EVALUATION: *[An example of student evaluation for this course might be:]*

Research paper proposal	5%
Midterm exam	30%
Presentation	10%
Research paper	25%
Field report	30%

COURSE CONTENT: *[Course content varies by instructor. An example of course content might be:]*

Week	Topic
1	Course introduction (human impact on wetlands) Wetland functions and classification Regional and global examples Lab: Plant identification
2	Wetlands of the Fraser Lowland Impacts to wetlands Hydrology Lab: Plant identification
3	Biological effects on wetlands hydrology Peatlands Student presentations (x1) Lab: Plant identification
4	Biogeochemistry Plant adaptations to anoxia Student presentations (3) Lab: Plant identification

Course content continued:

- 5 **Research paper proposal due**
Wetland succession
Peat as archive and proxy
Taphonomy and humification
Calculating soil parameters
Carbon sequestration
Student presentations (2)
Lab: Plant identification
- 6 Salt-marsh ecology
Restoration and salmon (Puget Lowland)
Student presentations (2)
Lab: Plant identification
- 7 **Midterm exam** followed by a field trip to Cheam Lake wetlands
- 8 Field trip to the Great Blue Heron Reserve
- 9 **Research paper due** prior to field trip to Chehalis River riparian
- 10 Field trip to Langley Bog
- 11 Field trip to Serpentine Fen
- 12 Data workshop
- 13 **Field report due** by the last day of class

When offered as a hybrid online course with field and laboratory components:

Using problem-based learning, field and laboratory components are combined with online instruction (hybrid model). An example problem-based exercise is to have students forecast the distribution of species in response to future climate change or develop conservation strategies in response to development or natural disturbance.

The course content listed above will be learned by students as they use inquiry-based methods to answer a suite of questions relevant to a specific problem.

Laboratory and field exercises will be completed on a weekly basis during regular class times over the course of the semester; in a condensed field-school format over one week; or in clusters of meetings over the course of the semester. Delivery format depends on when the course is offered