

<b>CAPILANO UNIVERSITY COURSE OUTLINE</b>	
Term: <b>FALL 2015</b>	Course No. <b>BIOL 305</b>
Course: <b>ECOLOGICAL PRINCIPLES FOR SUSTAINABILITY</b>	Credits: <b>3.0</b> Section:
Office: Tel: email:	

**COURSE FORMAT:** Three hours of class time plus an additional hour of supplemental activity delivered through on-line or other activities for a 15 week semester, which includes two weeks for final exams.

**PREREQUISITES:** 45 credits of 100 level or higher coursework.

**COURSE DESCRIPTION:**

This course will focus on the ecological principles that are needed to support critical thinking about sustainability. Students will learn about the dynamics of ecological systems and how they respond to natural and human disturbance. This knowledge will be applied to understand how ecological systems may be managed in ways that enhance rather than compromise their natural resilience.

**STUDENT LEARNING OUTCOMES:**

Upon successfully completing the course, the student should be able to:

- Explain how scientific methods and reasoning are used in ecology.
- Apply scientific knowledge and theory to applied issues in sustainability.
- Differentiate between scientific and normative statements in the context of debates about sustainability.
- Synthesize information from a variety of sources to conduct a critical evaluation of a specific issue.

**REQUIRED COURSE MATERIALS:**

**Texts:** Beeby, Alan and Anne-Maria Brennan. *First Ecology: Ecological Principles and Environmental Issues, Third Edition*. New York: Oxford University Press, 2008.

**COURSE CONTENT:**

Weeks	Topics	Textbook Readings
1-2	<b>Introduction: Defining the Key Terms</b> Sustainability: Factual and normative aspects The science of ecology	

3	<b>Species</b> Adaptation and the ecological niche Origin of species	Chapters 1 and 2
4	<b>Populations</b> Population growth and limiting factors Ecological carrying capacity Human population growth Invasive species Harvesting populations: Fisheries Conserving populations	Chapter 3
5	<b>Interactions</b> Cooperation Competition Consumption Pollination and pest control	Chapter 4
6	<b>Communities</b> Case studies: Mediterranean woodlands and temperate rainforests Convergence and integration Disturbance and succession Managing succession: Forestry	Chapter 5
7	<b>Systems</b> Ecosystem energetics Primary production Food chains and food webs Grazing food chains and rangeland management	Chapter 6
8	<b>Balances</b> Nutrient cycles Nutrient pollution: Eutrophication Managing nutrients: Agricultural soils Ecosystem restoration	Chapter 7
9	<b>Scales</b> Landscape ecology Ecological reserves Agricultural landscapes: Land-sparing vs. land-sharing Global ecology: Biomes and anthromes Climate change	Chapter 8
10	<b>Checks</b> Species diversity Extinction Ecological stability and sustainability	Chapter 9
11-13	<b>Student Presentations/Discussions</b> Each student will make a short presentation and lead a class discussion on a specific issue	
14-15	<b>Final Exam Period</b>	

**EVALUATION PROFILE:**

Final grades for the course will be computed based on the following schedule:

Midterm Exam	20%
Final Exam	30%
Presentation	25%
Term Paper	25%
TOTAL	100%

**TERM PAPER:**

Each student will write a 1500-2000 word term paper on a specific application of ecological principles to sustainability.

**SUPPLEMENTAL 4<sup>TH</sup> HOUR ACTIVITY:**

Supplemental activity might be a scheduled tutorial, an on-line activity, a group meeting, or some other activity as indicated by your instructor.

**GRADING PROFILE:**

Letter grades will be assigned according to the following guidelines:

A+ 90 - 100%	B+ 77 - 79%	C+ 67 - 69%	D 50 - 59%
A 85 - 89%	B 73 - 76%	C 63 - 66%	F 0 - 49%
A- 80 - 84%	B- 70 - 72%	C- 60 - 62%	

Students should refer to the University Calendar for the effect of the above grades on grade point average.

**OPERATIONAL DETAILS:*****University Policies:***

Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Cheating and Plagiarism, Academic Probation and other education issues. These and other policies are available on the University website.

***Attendance:***

The student is responsible for all information given in the lectures and laboratories, including times of examinations and assignment deadlines.

***Missed Exams:***

Normally, a score of zero will be given for a missed exam, test, quiz, lab, etc. In some **exceptional** situations, the student will be permitted to write a make-up test, defer the lab to a later date or to replace the score by other marks (see below). The date and timing of any make-up option is at the discretion of the instructor.

Options will only be offered to students if:

1. Circumstances are beyond the control of the student which resulted in the exam, test, quiz, lab, etc. to be missed. Such circumstances include serious illness or injury, or death of close family member. A departmental "medical form" to be completed by both the student and his/her

physician may be requested. A copy of the death certificate of a close family member may also be required.

Reasons do **NOT** include forgetting about the test, lack of preparation for the test, work-related or social obligations.

2. The student has notified the instructor (or the Pure and Applied Science office staff, if the instructor is not available) about the missed exam, test, quiz, lab, etc. Such notification **MUST** occur in advance, if possible, or at the latest, on the day of the exam, test, quiz, lab, etc.
3. Proof of the circumstances must be provided. Proper documentation of illness or injury requires a completed medical form (supplied by the department) by both the student and the physician. All documentation **must be submitted within 5 days** of the missed exam.
4. The student has been fully participating in the course up until the circumstances that prevented the writing of the exam, test, quiz, lab, etc. **Fully participating means attending all classes and turning in all assignments in the course.**

***Final Exam Period:***

Students should note that the final exam period is from **xxxx** (*includes Saturday, xx*), and that they can expect to write exams at any time during this period. Individual exam times will not normally be rescheduled because of holidays, work, or other commitments. While efforts are made to spread exams throughout the exam period, an individual's particular course combination may result in exams being scheduled close together, or spread widely through the entire exam period.

***Cheating/Plagiarism:***

Students caught cheating on a test will normally receive a grade of "F" on the course and may be expelled from the University. Plagiarism (including the copying of any part of assignments, laboratory reports, and essays) is a serious offence and is a form of cheating.

***Incomplete Grades:***

Incomplete grades ("I") are given only when special arrangements have been agreed upon with the instructor prior to the end of the semester. Since "I" grades are granted only in exceptional circumstances (usually health problems), their occurrence is rare.

***Professionalism:***

Students should be able to demonstrate a professional attitude and behaviour: reliability, respect for and cooperation with colleagues, willingness to work calmly and courteously, respect for equipment and systems, and constructive response to criticism.

***English Usage:***

Students are expected to use correct standard English in their written and oral assignments, exams, presentations and discussions. Failure to do so may result in reduced grades in any part of the Evaluation Profile. Please refer to the

guidelines provided in the Capilano Guide to Writing Assignments (available from the University bookstore).

***Emergency  
Procedures:***

Please read the emergency procedures posted on the wall of the classroom.