



School of Arts & Science
ENVIRONMENTAL TECHNOLOGY DEPARTMENT
ENVR 206B-01A, 01B
Environmental Biotechnology
2006F

COURSE OUTLINE

The Approved Course Description is available on the web @ _____

Ω Please note: this outline will be electronically stored for five (5) years only.
It is strongly recommended students keep this outline for your records.

1. Instructor Information

(a)	Instructor:	Dr. Anna Colangeli		
(b)	Office Hours:	See hours posted on office door		
(c)	Location:	F-246		
(d)	Phone:	370-3459	Alternative Phone:	
(e)	Email:	Through webct		
(f)	Website:	http://webct.camosun.bc.ca		

2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Upon completion of this course the student will be able to:

1. Culture and subculture plant explants under sterile conditions.
2. Use the tools of biotechnology, including DNA extraction techniques, restriction enzymes, agarose gel electrophoresis, PCR and protoplast fusion and discuss these molecular biology techniques.
3. Use Agrobacterium and tissue culture techniques to introduce a foreign gene into selected plants.
4. Explain the principles of bioremediation and phytoremediation.
5. Explain the principles of genetic engineering and biotechnological techniques and their application to agriculture and the environment.

3. Required Materials

(a)	Texts	n/a
(b)	Other	Envr. 206B Lab Manual, 2006 edition

4. Course Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Lectures: Wednesday 11:30-12:20 E-348
Labs: section 01A – Thursday 9:30 – 12:20 F-222
Labs: section 01B – Thursday 2:30-5:20 F-222

5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

(a)	Assignments	40%
(b)	Exam 1	15%
(c)	Exam 2	25%
(d)	Presentation	20%

6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at camosun.ca or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

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7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.

The schedule, which follows, is an attempt to outline the weekly activities of the class. It is subject to change or modification as the need arises.

Week	Date	Lecture	Labs
1	Sept. 6-7	Introduction to Environmental Biotechnology	<ul style="list-style-type: none"> • Lab. 1 - Tissue Culture • Lab. 8 - Phytoremediation – start experiment • Environmental Biotechnology overview
2	Sept. 13-14	Review of DNA and Molecular Biology	<ul style="list-style-type: none"> • Lab. 1 - Tissue Culture – continue • Lab. 8 Phytoremediation - continue
3	Sept. 20-21	Recombinant DNA technology <ul style="list-style-type: none"> • Genetic manipulation 	<ul style="list-style-type: none"> • Lab. 1 – continue • Lab. 8 – continue • Lab. 2 - Isolation of DNA
4	Sept. 27-28	<ul style="list-style-type: none"> • <i>Agrobacterium</i> 	<ul style="list-style-type: none"> • Lab 1, 8 -continue • Lab. 3 - Protoplast Fusion
5	Oct.4-5	<ul style="list-style-type: none"> • PCR • cloning 	<ul style="list-style-type: none"> • Lab 1,8 - continue • Lab. 4 - Restriction digests
6	Oct. 11-12	Environmental Monitoring	<ul style="list-style-type: none"> • Lab. 1 – continue • Lab. 8 – complete analysis • Lab. 4 - electrophoresis of digests
7	Oct. 18-19	Bioremediation	<ul style="list-style-type: none"> • Labs 1, continue • Lab. 5 - Characteristics of <i>Agrobacterium</i>
8	Oct. 25-26	Exam #1	<ul style="list-style-type: none"> • Labs 1, 5 continue • Lab. 6 - PCR
9	Nov. 1-2	Biotechnology and sustainable technology	<ul style="list-style-type: none"> • Labs 1, 5, 6 continue • Lab. 7 - Cloning of PCR product
10	Nov. 8-9	Natural resource recovery	<ul style="list-style-type: none"> • Lab. 9 – Fermentation
11	Nov. 15-16	Presentations	<ul style="list-style-type: none"> • Labs 1, 5 - continue • Lab. 7 - Cloning of PCR product
12	Nov. 22-23	Presentations	<ul style="list-style-type: none"> • Completion of all labs
13	Nov. 29-30	Presentations	<ul style="list-style-type: none"> • All assignments due
14	Dec. 6-7		