



School of Arts & Science
ENVIRONMENTAL TECHNOLOGY DEPARTMENT
ENVR 206B – Directed Studies
Environmental Biotechnology
2015 Winter

COURSE OUTLINE

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: | TBA | | |
| (c) | Location: | Fisher 252B | | |
| (d) | Phone: | 250-370-3388 | Alternative Phone: | |
| (e) | Email: | colangel@camosun.bc.ca | | |
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2. Intended Learning Outcomes

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

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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

None – will be supplied

4. Course Content and Schedule

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|---|
| Lecture/Lab: Monday 12:30 – 4:00 p.m. Fisher 222 Thursday 12:30 – 1:30 p.m. Fisher 222 |
|---|

A series of ongoing experiments will be conducted by the student under the supervision of the course instructor.

At the end of the course the student will:

Have a working knowledge of Tissue Culture Techniques including: media preparation, sterilization protocols, aseptic techniques, working in a laminar flow hood.

Be able to take a plant species and propagate it by tissue culture methods.
 Maintain a journal outlining the methodology used in the experiment.

Have completed a literature review of tissue culture procedures for the selected species.

Specific Outcomes (Deliverables) of this project.

A report for the experiments, written as scientific papers.
 Recommendations for future work in this area.
 Plants produced by the tissue culture methods.
 An understanding and working knowledge of the concepts identified under Learning Outcomes.

6. Grading System
Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|---|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 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 E-1.5 at camosun.ca for 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.) |
| 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. |

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.