School of Arts & Science *ENVIRONMENTAL TECHNOLOGY DEPARTMENT* **ENVR 292** **Techniques in Environmental Biotechnology** **Winter 2014**

COURSE OUTLINE

The Approved Course Description is available on the web @
http://camosun.ca/learn/programs/envr/study.html

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:	Posted on Office Door and online	
(c)	Location:	Ewing 270	
(d)	Phone:	250-370-3456	Alternative Phone:
(e)	Email:	colangel@camosun.bc.ca	
(f)	Website:	https://online.camosun.ca/	

2. Intended Learning Outcomes
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 foreign genes into selected plants.
4. Explain the principles of bioremediation and phytoremediation.
5. Research Case studies in alternative energy, bioplastics, biomimicry, bioremediation, phytoremediation and constructed wetlands. Explain and discuss the advantages and disadvantages of these technologies
6. Explain the principles of genetic engineering and biotechnological techniques and their application to the environment.

3. Required Materials

4. Texts – none

(b) Lab manual and lecture notes are found in the course D2L site.

4. Course Content and Schedule

For 2 credits, the student will contribute approximately 42 hours in class and 42 hours out of class. There will be weekly meeting with the project supervisor twice weekly as required. The project will progress throughout the term and be completed by the Final Exam period.

Mark Breakdown:

Reports, worksheets and assignments	100%

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	*Incomplete*: 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	*In progress*: 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 3rd course attempt or at the point of course completion.)*
CW	*Compulsory Withdrawal:* 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.