



CAMOSUN COLLEGE
Trades and Technology
Electronics and Computer Engineering

ECET291
Engineering Project Management

Fall 2020

COURSE OUTLINE

The calendar description is available on the web @

<http://camosun.ca/learn/calendar/current/web/ecet.html#ECET291>

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

(a) Instructor	lecture	Lindsay Stretch
	lab	none
(b) Office hours	Book via email	
(c) Location	TEC216	
(d) Phone	250-370-4650	Alternative:
(e) E-mail	stretch@camosun.ca	
(f) Website		

Pre-requisites

- Successful completion of C+ in Principles of Math 12 or Pre-calculus 12, or C in Calculus 12 and Pre-calculus 12, or C in Calculus 12 and Principles of Math 12, or C+ in MATH 093, or C in MATH 105, or C+ in MATH 107, or C in MATH 115, or C in MATH 173, or assessment;
- C in Physics 11 or PHYS 101 or PHYS 151;
- C in English 12 or English First Peoples 12 or TPC 12, or in ENGL 092 and ENGL 094, or in ENGL 092 and ENGL 096, or in ENGL 103 and ENGL 104, or in ENGL 103 and ENGL 106, or in ENGL 130, or in ENGL 142, or in ELD 092 and ELD 094, or in ELD 097, or assessment

Course Hours Lecture: 2hrs/wk Lab: 0hrs/wk Duration: 14 weeks

Short description

Students will be introduced to engineering project management and budgeting techniques, as well as strategies for effective project teamwork. They will also study engineering standards, the effect of engineering on the environment, professional responsibility, and engineering ethics.

2. Intended Learning Outcomes

Upon successful completion of this course a student will be able to:

- define the project life cycle;
- suggest strategies for negotiating specifications with clients;
- create Gantt and PERT charts;
- use project management software to facilitate tracking, scheduling, documentation, implementation and evaluation of electronic and computer engineering projects;
- cite the phases of a design project;
- compare project management strategies;
- analyze and create project budgets;
- employ strategies for successful teamwork;
- describe conflict management techniques;
- define and explain the importance of international engineering standards;
- describe and give examples of how standards are developed and used;
- explain the life cycle of a product and its environmental impact
- describe the responsibilities of a professional technologist;
- describe the role, responsibilities and scope of practice of electronic and computer engineering technologists, and apply this knowledge to practice situations;
- apply the ASTTBC code of ethics and practice guidelines;
- explain the importance of the code of ethics;
- demonstrate professionalism in all channels of communication;
- respond to others in a respectful, fair and equitable manner;
- respond respectfully to and demonstrate an awareness of the effect of cultural differences on communication and interactions in the workplace;
- use appropriate non-verbal communication skills in all workplace interactions;
- respond openly and non-defensively to guidance, direction and feedback about performance;
- use relevant and current technical literature and professional resources to inform ethical and professional practice and to support ongoing technical and professional skill development;
- use information from manuals, policies, codes and standards appropriate to the specified work in order to conform to health, safety and technical standards, expectations and responsibilities.

3. Required Materials

- (a) Course materials from D2L site and online as directed

4. Course Content and Schedule (Subject to change)

- | | |
|---|----------------|
| 1. Engineering project management | 7 hours |
| 1.1 Life cycles | |
| 1.1.1 Product life cycle | |
| 1.1.2 Project life cycle | |
| 1.2 Negotiating a specification with a client | |
| 1.3 Phases of design | |
| 1.4 Modeling a project using a design structure matrix | |
| 1.5 Time estimation | |
| 1.5.1 Gantt charts | |
| 1.5.2 Program evaluation and review technique (PERT) charts | |
| 1.5.3 Project crashing | |
| 1.5.4 Fast tracking | |
| 1.6 Critical chain management | |
| 1.7 Earned value management | |
| 1.8 Risk management | |
| 1.9 Quality assurance | |
| 1.10 Project reviews | |
| 2. Project budget | 4 hours |
| 2.1 Components of a project budget | |
| 2.2 Project costs | |
| 2.3 Risk assessment | |
| 2.4 Life cycle costing | |
| 2.5 Evaluating time, resource and budget tradeoffs | |
| 2.6 Project audits | |
| 3. Project teams | 2 hours |
| 3.1 Working as a team | |
| 3.2 Effective group process | |
| 3.3 Respectful communication | |
| 3.3.1 Verbal | |
| 3.3.2 Non-verbal | |
| 3.4 Intercultural awareness | |
| 3.5 "SMART" goals | |
| 3.6 Conflict management | |
| 3.7 Partially distributed teams (PDTs) | |
| 4. Engineering standards | 5 hours |
| 4.1 What is an engineering standard? | |
| 4.2 Strategic importance of international standards | |
| 4.2.1 Cost reduction | |
| 4.2.2 Performance improvements | |
| 4.2.3 Access to global markets | |
| 4.2.4 Enabling strategic partnerships | |
| 4.3 International standards organizations | |
| 4.4 Standards development | |
| 4.5 Conformity assessment and testing | |
| 4.6 Examples of electronics engineering standards | |

5. Engineering and the environment	2 hours
5.1 Life cycle concept	
5.2 ISO 14000	
5.3 Design decisions	
5.3.1 Lead-free solder	
5.3.2 Use of toxic materials	
5.3.3 Disposal considerations	
5.3.4 Sourcing materials at distance	
6. Professional responsibility	3 hours
6.1 What is a professional?	
6.2 The responsibilities and scope of practice of a technologist	
6.3 Maintaining currency	
6.4 Case studies	
6.5 Applied Science Technologists & Technicians of BC (ASTTBC)	
6.6 The role of the technologist in an engineering team	
7. Engineering ethics	2 hours
7.1 Principles of engineering ethics	
7.2 ASTTBC code of ethics and practice guidelines	
7.3 The importance of having a code of ethics for technologists	
Tests and review	3 hours
Total	28 hours

5. Basis of Student Assessment (Weighting)

Assignments:	60%
Tests & Quizzes:	40%

6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

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, Student Services or the College web site at <http://www.camosun.bc.ca>

STUDENT CONDUCT POLICY

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

<http://www.camosun.bc.ca/policies/policies.html>

A. GRADING SYSTEMS <http://www.camosun.bc.ca/policies/policies.php>

The following two grading systems are used at Camosun College:

1. 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		1
0-49	F	Minimum level has not been achieved.	0

B. 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 <http://www.camosun.bc.ca/policies/E-1.5.pdf> 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 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.