



MENG 244 - Manufacturing Processes 2/CAM - Winter 2018
COURSE OUTLINE

Instructor: Salah Elfurjani

Office: TBA Tel: TBA, E-mail: ElfurjaniS@camosun.bc.ca
Lecture Hours: Th, 11:30-13:30 (X01A and X01B) and F, 8:30-10:30 (X02A and X02B) TEC 177
Laboratory Time (TEC 129 and 145): M, 8:30 -11:30 (X02A)
Tu, 9:30-12:30 (X02B)
W, 8:30- 11:30 (X01B) and 14:30-17:30 (X01A)
Office Hours: Th, 8:30-11:00 and F, 10:30- 12:00

Laboratory Technologists: **Pat Nicholson** NicholsonP@camosun.bc.ca and
Nico Vazquez Conde CondeN@camosun.bc.ca

Calendar Description:

Students will be introduced to automated machine tools including CNC lathes and milling machines. Using software, students will specify tools, set speeds and feeds and generate toolpaths to create machined parts. Work holding methods and tool selection will be reviewed. Use of laser cutter and 3D printing will also be explored.

Much of the learning will result from “hands-on” experience operating and programming CNC controlled machines using available CAD and CAM software. An emphasis will be placed on the synthesis of the skills, information, and ideas required for managerial decision making.

Intended Learning Outcomes:

Upon successful completion of the course, the student will be able to:

- Summarize the history of CNC machining
- Plan the operation sequence for efficient part production
- Describe the major mechanical and control components of a CNC machine and their functions
- Program a CNC machine and edit programs using common G codes, canned cycles, subprograms and M codes commands
- Create a CNC program from a CAD drawing using a CAM for CNC lathes and milling machines
- Select appropriate cutting tools for the machining operation and specify different toolpath strategies
- Choose and design an appropriate clamping mechanism (jigs or fixtures) for CNC milling machine
- Manufacture a 2D part using a laser cutter
- Manufacture a 3D part using a 3D printer

Evaluation Method:

Assignments	20%
Final Exam	20%
Projects	60%
Total:	100%

Standard Grading System:

90-100%	A+	70-72%	B-
85-89%	A	65-69%	C+
80-84%	A-	60-64%	C
77-79%	B+	50-59%	D
73-76%	B	0-49%	F

Textbook: No text assigned.

LABS: Labs will be conducted using computers in TEC 145 and CNC machines in TEC 129.

Important Notes:

In order to pass the course, attendance and successful completion of all labs and projects are required.

College Supports, Services and Policies:

Immediate, Urgent, or Emergency Support



If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), SEEK HELP. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the STUDENT SERVICES link on the College website at <http://camosun.ca/>

College Policies

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