

Mechanical Engineering Technology (Manufacturing) Co-op

Mechanical Engineering Technologists, who complete a studies focus in manufacturing, are proficient in the specification, implementation, operation, maintenance and supervision of manufacturing systems and personnel. These technologists are prepared to assume the role of decision makers early in their careers in both the traditional and advanced manufacturing sectors. The knowledge of core mechanical engineering principles, above average problem solving ability, and superior "hands-on" skills also make these graduates well suited to employment in related industries.

Students in this program utilize the advanced technology resources available through the college's Manufacturing Technology Center (MTC). The MTC is mandated to provide both direct and indirect support to industry through activities such as product and process prototyping. Students benefit from exposure to these "real-life" industry projects and also acquire valuable work experience through the completion of two Co-op work terms.

ACCREDITATION

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

1. A solid knowledge of Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) software.
2. The ability to design mechanical components/assemblies and create engineering drawings and specifications through the use of 2D and 3D CAD and Modeling software.
3. Hands-on practical experience with programming and operating Computer Numerical Control (CNC) equipment, Robotics, Programmable Logic Controllers (PLC), electro-pneumatic systems, and other automation systems.
4. The ability to use Design Computer Integrated Manufacturing (CIM) systems drawing on the knowledge learned through core engineering concepts of materials science, strength of materials, and machine design.

5. A competent knowledge of quality assurance standards and practical quality control techniques in precision measurement.
6. Problem solving and related skills for managing projects, resources and people in a supervisor role.
7. An understanding of industry standards and workplace procedures related to safety, manufacturing protocols, and professionalism.
8. The skill to prepare technical reports and presentations for effective communications in the workplace.
9. On-the-job experience with two (2) paid work terms.

CURRICULUM

A primary year technology core curriculum which includes courses in Communication skills, Physics, Chemistry, Mathematics, Engineering CAD Graphics, Computer Applications, and Electrotechnology.

An Intermediate and Advanced curriculum in the second and third years of study which consists of discipline specific courses such as Mechanics, Strengths, Materials and Processes, Machine Design, Hydraulics and Pneumatics, Engineering Management, Quality Assurance, Maintenance, Computer Numerical Control (CNC), Tool Design, and Computer Integrated Manufacturing.

EMPLOYMENT OPPORTUNITIES

Career opportunities for graduates of this program exist with consulting firms, manufacturing firms, food processing plants, research institutions and government departments. Previous graduates have been successful in obtaining employment with such companies as Newdock, Brown Offshore, Iron Ore Company of Canada, Suncor, and Oceanic Ltd.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

DIPLOMA

- Three years
- September start
- Ridge Road Campus (St. John's)

COURSES

CODE TITLE Hrs/wk
Semester 1 and 2 - Refer to Engineering Technology (First Year)

Semester 3 (Technical Intersession I)			Cr	Le	La
CG1500	Work Methods & Measurement		4	3	2
EG1520	Engineering Graphics for Mechanical Engineering Technologies		2	2	0
SP1200	Machine Shop Practice		1	0	3
SP2400	Safety Engineering		2	2	0

The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4			Cr	Le	La
CF1100	Materials and Processes		3	3	1
CF2540	Mechanics of Solids		3	3	1
EC1700	Engineering Economics		2	2	0
MA2100	Mathematics		5	5	0
SP1700	CNC Machining I		3	2	2
SP1800	Precision Metrology		4	3	2
SP2300	Quality Assurance		3	3	0

Semester 5			Cr	Le	La
CF1120	Materials and Processes		3	3	1
FM2100	Fluid Mechanics		3	3	1
FM3100	Fluids (Hydraulics and Pneumatics)		3	3	1
FM3200	Machine Design		3	3	1
MA2130	Applied Mathematics		5	5	0
SP1400	Facilities Engineering		3	2	2
SP1701	CNC Machining II		3	2	2

Semester 6			Cr	Le	La
WC1900	Co-op Work Term I		5	0	0

Semester 7			Cr	Le	La
CG3500	Production Planning		3	3	1
DE3410	Computer Integrated Manufacturing		4	3	2
DR3710	Tool Design		4	4	1
DR3810	Advanced Processes		3	2	3
EG2110	Engineering Graphics		3	2	2
FM2201	Mechanics		3	3	1
LW1500	Law and Ethics		3	3	0

Semester 8			Cr	Le	La
WC1901	Co-op Work Term II		5	0	0

Semester 9			Cr	Le	La
CG3400	Engineering Management		3	3	0
C1210	Instrumentation Controls & Automation		3	2	2
FM3220	Machine Design		3	3	1
MA1670	Statistics		4	4	1
PR3724	Technical Thesis		4	1	2
SP2301	Quality Control		3	3	1
TD2100	Thermodynamics		3	3	1

