ENGINEERING TECHNOLOGY

Geomatics/Surveying Engineering Technology (Co-op)

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
SU1320	Plane Surveying I	4	3	4
EN1100	Environmental Science	2	2	1
SU1500	Cartography	3	2	2

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
FT1240	Surveying Field Camp	1	0	0
CM2800	Oral/Written Communication Skills	3	3	0
SU1321	Plane Surveying II	7	4	8
MA2100	Mathematics	5	5	0
SU1360	Graphics for Geomatics Engineering Technology	3	2	2
SU2500	Photogrammetry	4	3	2

Semester 5		Cr	Le	La
MA2180	Applied Geomatics Mathematics	4	4	1
SU1440	GIS I	3	2	3
SU1540	Hydrography I	4	3	3
SU2320	Geodetic Surveying	4	3	3
SU2530	Cadastral Surveying	4	3	2
CP1640	Visual Basic Applications for ACAD	2	1	3

Semester 6		Cr	Le	La
WC1300	Work Term I	5	0	0

Semester 7		Cr	Le	La
CA2900	Municipal Engineering	3	2	3
SU1441	GIS II	4	3	3
SU2570	GPS & Remote Referencing	4	3	3
PR3150	Project Management & Financial Analysis	4	4	0
PR2270	Technical Thesis I	0	1	0
MA3130	Advanced Geomatics Mathematics	3	3	0
GE1230	Geology for Geomatics Engineering Technology	4	3	2

Semester 8		Cr	Le	La
WC1301	Work term II	5	0	0

Semester 9		Cr	Le	La
FT1250	Hydrographic Camp	1	0	0
PR2271	Technical Thesis II	5	5	0
SU1541	Hydrography II	4	3	3
SU1570	Remote Sensing	3	2	2
SU3300	Geodesy & Map Projections	4	3	3
SU3500	Adjustments	4	3	3
SU2531	Cadastral Surveying II	2	2	0

Geomatics is the art and science of acquiring, analyzing, presenting, and managing geographical and spatial data. Geomatics includes the traditional surveying and mapping sciences together with new study areas such as Geographical Information Systems (GIS) and the satellite controlled positioning system the Global Positioning Systems (GPS). With the development of off-shore petroleum, management of the fishery, infrastructure and hydro development and the resulting expansion in the construction industry, the need for more and better trained Geomatics/Surveying Engineering Technologists becomes apparent.

The three-year diploma level Geomatics/Surveying Engineering Technology program is a cooperative education program. It is designed to train persons who will become the senior field members of land, hydrographic, geodetic or engineering survey teams or supervisors in digital data management, analysis and presentation.

The study of Geomatics includes such diverse subjects as photogrammetry, cartography, geodesy, astronomy, hydrography, cadastral surveying, digital mapping, and GIS. These subjects are based on a firm foundation in the sciences of mathematics, physics and chemistry. The associated areas of communications, management, and economics are also an integral part of the program.

In addition to theoretical instruction, the student obtains considerable field and office experience during labs, field camps, and 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.

This program is also CAFCE (Canadian Association for Cooperative Education) accredited.

OBJECTIVES

Upon successful completion of the Geomatics/Surveying Engineering Technology program the graduate will be able to:

1. Collect, analyze, manage and distribute of spatial information as per standard industry practices.
2 Apply professional and quality assurance standards to execute Geomatics project activities for delivery in response to the need of the private and public industry.
3. Utilize industry standards and specifications to analyze the positional accurance of measurement systems in preparing land records and engineering drawings.
4. Utilize an appropriate mastery of the knowledge, techniques, skills, and modern tools of Geomatics.
5. Adapt to the emerging applications and equipment within the Geomatics field.
6. Apply theory and practical experience in branches of the Geomatics Industry including: Plane Surveying, Cadastral, Marine Surveying, GIS, Photogrammetry, and Construction Surveying.

CURRICULUM

General Education consisting of Communications (oral or written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, and Engineering Graphics.

Specific education in all aspects of Geomatics. Extensive field training to provide experience with instrumentation and software, through Surveying Camps and practical lab sessions.

EMPLOYMENT OPPORTUNITIES

Graduates generally find employment with various departments of the federal and provincial government, crown corporations, utility companies, construction engineering, oil exploration and surveying companies both locally and internationally. For graduates who desire to further their careers in Geomatics, the University of New Brunswick awards a limited number of credits for this program toward a Bachelors Degree in Surveying Engineering.

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