

# Geographic Information Systems - Cartographic Specialist

<b>Program Location:</b>	Lindsay
<b>Program Code:</b>	GC
<b>Co-ordinator:</b>	Lawrie Keillor-Faulkner
<b>Credential:</b>	Ontario College Graduate Certificate
<b>Start Date:</b>	September 04, 2012
<b>Tuition Fees:</b>	\$1,871.17 per semester. Tuition and fees subject to change.

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**Through the Geographic Information Systems - Cartographic Specialist program you can become a proficient GIS practitioner, visual designer and communicator - creating a variety of customized maps and other products for the many users of geographic information.**

## Program Highlights

**Please note:** this program is 10 months duration.

Cartography - known as the art and science of making maps, has come a long way since the efforts of early mapmakers who worked with pen and ink. While cartography still relies on many of the traditional principles, mapmaking now requires incorporating the best of modern research and technology. Geographic Information Systems (GIS) allows today's "cartographer" to store geographic data in an organized way, to allow for quick access, correlation, and analysis. This system also facilitates the development of cartographic displays. By using GIS, cartographers are able to collect, store, and combine data about a given area, subject, or region being researched. GIS helps planners working on environmental, public health, municipal planning, and natural resource projects (to name a few uses) monitor change, predict trends and manage resources using current relevant data.

The GIS Cartographic Specialist program is an advanced post-graduate program, building on your existing, related skills.

- Fleming's leadership in this field has been recognized by industry, government and business through their support in establishing the Geomatics Institute at Fleming.
- These strong partnerships offer students access to the latest software packages and data resources as well as unprecedented learning and employment opportunities.
- Most GIS programs focus on geographic analysis and application - but the Fleming Cartographic Specialist program is based on a dual approach which is truly unique.
- You will become a proficient GIS practitioner, as well as a visual designer and communicator - using GIS data and software to create a wide variety of customized maps and other products for users of geographic information.

Not sure which of our two GIS Ontario College Graduate Certificate programs is right for you? The common first semester in the GIS Cartographic Specialist and GIS Applications Specialist programs gives you a good overview and understanding of the technologies and diverse skills particular to careers in these fields. Subject to enrolment capacity, you can choose which area of specialized study you will pursue in semester two. In addition to acquiring

a hands-on, firm foundation using Cartography, digital mapping and GIS technology skills and tools, you will have many opportunities to build on your teamwork, team building, project management, problem-solving and critical thinking skills. Since employers are seeking these broad-based transferrable skills, this experience working in technology teams will give you an edge in the workplace.

This three-semester (10-month) program starts in September with a 15-week semester ending in December, continues in January with another 15-week semester ending in April, and concludes with a seven-week semester starting in May and ending in June.

## Why Choose Fleming

Graduates of Fleming's cartographic programs have earned a reputation for excellence through their achievements in the workplace, and through cartographic and GIS competitions. Over the years, they have captured 80 American Congress on Surveying and Mapping awards in annual competitions (student category), as well as numerous awards from the Canadian Cartographic Association and the Canadian Institute of Geomatics.

### Success Stories

Graduate Meghan Miller is featured in a January 2012 article of GoGeomatics with an interview describing her experience in the program and her career path since graduation. Meghan now works for Canadian Cartographic Corporation (CCC). Read the article "Meghan Miller: Creative Cartographer" at:  
[gogeomatics.ca/meghan\\_miller.htm](http://gogeomatics.ca/meghan_miller.htm)

Adam Thom, 2010 program graduate, is the winner of the Arthur Robinson Award for Best Printed Map at the 2011 Cartography and Geographic Information Society (CaGIS) Map Design Competition. The award is sponsored by the National Geographic Society and Avenza-MAPublisher.

Three students of the 2010 class submitted presentations to the Canadian Cartographic Association 2010 Online Mapping Contest. One of the entries, by Nicole Benishek, won the Gold Medal for "Best Interactive Online Map." To view the contest entries, go to:

<http://www.cca-acc.org/cca-nrc010.asp>

## Work Experience

You'll spend a significant part of your time in the program doing experiential work - putting theory into practice. A co-operative GIS project in the final semester involves cross-disciplinary teams from the GIS Cartographic Specialist and Applications Specialist programs working together on a project for a business, government, or industry client.

## Is this You?

While not prerequisites, there are a few skills and abilities that will help you to succeed in this program. These include:

- good creative thinking skills
- strong oral and written communication skills
- self-discipline
- excellent time management skills
- analytical skills
- computing skills

## Career Opportunities

With your GIS-Cartographic Specialist certificate, you will be able to pursue a variety of exciting, responsible positions within GIS and digital mapping environments, such as:

- provincial and federal government mapping agencies
- municipal utility, engineering, and planning departments
- private sector mapping, planning, consulting, utility, and natural resource firms

## Minimum Admission Requirements

- A university degree or college diploma, or equivalent education or work experience. On rare occasions, substantive work experience in the field of Geomatics will be considered as equivalent to a degree or diploma, and these cases will be reviewed on an individual basis.

Applicants without a degree or diploma should consider beginning their Geomatics career with the Geomatics Technician Program.

Although traditionally GIS training accompanied a degree or diploma in natural resources, with exponential growth in the field of GIS sciences, applicable backgrounds now range from forestry to marketing, from resource extraction to municipal planning, from health care to law enforcement. Previous GIS experience, while helpful, is not required for admission.

### **Recommended:**

Since GIS is a field of study that makes extensive use of computer hardware and software technology, students entering the GIS-Cartographic Specialist program must be familiar with computers.

## Related Programs

### **Trent University**

You can obtain a Trent University Honours Bachelor of Science or Bachelor of Arts Degree in either Geography or Environmental Science/Studies and a Geographical Information Systems Ontario College Graduate Certificate in four years, with the third year spent studying at Fleming College. In other words, get both qualifications in four years - instead of five. For details, see Trent/Fleming Joint Degree, Geographical Information Systems Special Emphasis.

School of Military Mapping, Mapping & Charting Establishment of the Canadian Armed Forces

If you are a graduate of the Geomatics Technician program from the School of Military Mapping, Mapping & Charting Establishment of the Canadian Armed Forces, at the QL5 Level, you are eligible to apply for advance standing into the second semester of the three-semester Geographic Information Systems - Applications Specialist or Geographic Information Systems - Cartographic Specialist graduate certificate programs. For complete details see Transfer Credit Articulation Agreement.

## Health Requirements

If you have significant difficulty perceiving distinctions between colours you will experience greater challenges in map-making.

## Additional Costs

Plan to spend about \$1000 for books and supplies.

# Curriculum for Geographic Information Systems - Cartographic Specialist

## Semester 1

Code	Course Name	Hours
GEOM 65	GIS Database Principles	45
GEOM 104	Geodesy	21
GEOM 102	Geovisualization I	45
GEOM 67	Problem Solving and Programming	60
GEOM 66	Remote Sensing and Image Analysis	45
GEOM 103	Spatial Analysis I	45
SURV 21	Surveying and CAD Mapping	21
GEOM 101	Web Design and Programming	45

## Semester 2

Code	Course Name	Hours
GEOM 75	Advanced Remote Sensing	60
GEOM 105	Environmental Modeling	21
GEOM 68	GIS Co-operative Project Planning and Management	21
GEOM 106	Geovisualization II	60
GEOM 108	Municipal Mapping and GIS	45
GEOM 107	Web Communication	45
GEOM 99	Web GIS Development	45

## Semester 3

<b>Code</b>	<b>Course Name</b>	<b>Hours</b>
APST 62	GIS Co-operative Project	210
GEOM 110	Geovisualization III	35
APST 87	Survey Camp	40

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