

Certificate in Geographic Information Science

(2014-2015 Academic Calendar)

Faculty of Science offers a Certificate in Geographic Information Science. The certificate is intended to reflect that the student has completed courses of study in geographic information systems and geomatics that are appropriate for further study or employment related to geographic information science.

A Certificate can be completed by a student in an undergraduate program, in addition to the student's regular program requirements. Completion of such a Certificate would be noted at convocation, and shown on the student's transcript.

The purpose of a "Certificate in Geographic Information Science" is to show that the graduate has training in geographic information science, in addition to their academic program requirements.

Students should enrol in the "Certificate in Geographic Information Science" by contacting the Certificate Coordinator. Contact information for the Coordinator is available on the Faculty of Science website. Students can enrol when in their second, third or fourth year of their undergraduate program. Early enrolment is advised.

Certificate Requirements:

1. Students must complete the following courses, with a minimum grade of B- in each:
 - ENVS/ERTH/GEOG 3500.03: Geoscience Information Management
 - ERTH/GEOG 4520.03: GIS Applications to Environmental and Geological Science
2. In addition students must complete at least two of the following courses, with a minimum grade of B- in each:
 - GEOG 2000.03: Cartography
 - GEOG 2006.03: Space, Place and GIS
 - BIOL/ENVS/GEOG 3633.03: Spatial Information and GIS in Ecology
 - ERTH/GEOG 4530.03: Environmental Remote Sensing
 - ENVS 2100.03: Environmental Informatics
 - ENVS/GEOG 3400.03: Environment and Human Health
 - SUST 3000.03: Environmental Decision Making
3. In addition, students **must complete a research project** with an emphasis in geomatics or geographic information science (as pre-approved by the Certificate Coordinator) via one of the following sets of courses, with a minimum grade of B-:
 - BIOL/MARI 4900.06 or 4901.03/4902.03: Honours Thesis
 - BIOL/MARI 4806.03 or 4807.03: Special Topics
 - ENVS 3801.03: Directed Readings
 - ENVS 4901.03/4902.03: Honours Thesis
 - ERTH 4100.06: Research Project
 - ERTH 4200.06: Honours Thesis
 - ERTH 4510.03 or 4511.03: Directed Studies
 - SUST 4800.03: Independent Study
 - SUST 4900.06: Honours Thesis

Students completing an undergraduate program in a discipline other than those listed above will need to complete the project through a directed readings or honours thesis course listed within their home department. The project must be approved by the Certificate Coordinator.

Research Project Guidelines for the Certificate in Geographic Information Science

In the research project in GIS students learn how to design, manage and complete a research project that emphasizes the use of a geographic information system (GIS). Projects can be completed individually or in groups and will proceed with the identification of a suitable research problem. Students will work to solve the problem through acquiring, organizing, analyzing and presenting data using GIS. Projects must include a substantive analytical component where GIS is central to the methods employed.

The focus of project evaluation is on the methodological and organizational design, the application of appropriate GIS techniques, and proper reporting of the results. The GIS component is accomplished through independent work. It is assumed that students already know the GIS concepts and functions required or are capable of learning them, and are proficient in the use of at least one GIS package.

Supervision and evaluation of research projects should include, at minimum, input from a professor or GIS technician competent in geographic information science, methods and technologies. Evaluation of the research project should ideally include three written components: a proposal, a final report and a presentation. In group evaluations the supervisor may adjust final grades based on performance and contribution to the group.