

Geomatics (GEOM)

Department of Geography and Environmental Studies

Faculty of Arts and Social Sciences

GEOM 1004 [0.5 credit]

Maps, Satellites and the Geospatial Revolution

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

GEOM 2007 [0.5 credit]

Geographic Information Systems

Data in a spatial context; spatial data structures, georeferencing, data query; mapping; creating spatial databases; selected topics in GIS application to environmental, land-use planning and market analysis issues.

Prerequisite(s): GEOM 1004 or EARTH 2406 (may be taken concurrently), or permission of the Department. Familiarity with personal computers is assumed.

Lectures and laboratory, four hours a week.

GEOM 3002 [0.5 credit]

Air Photo Interpretation and Remote Sensing

Aerial photography and digital remote sensing; visual interpretation of land use, landforms, and surficial materials; introduction to digital image processing and analysis.

Prerequisite(s): GEOM 1004 or third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 3005 [0.5 credit]

Geospatial Analysis

Acquisition, manipulation, and display of spatially referenced information using Geographic Information Systems (GIS). Spatial modeling, site selection, and routing analysis in raster and vector GIS.

Prerequisite(s): GEOM 2007.

Workshop three hours a week.

GEOM 3007 [0.5 credit]

Cartographic Theory and Design

Principles of and issues in cartography, cartographic communication and map design; practical aspects of cartographic representation using multimedia and online mapping.

Prerequisite(s): GEOM 1004 or GEOM 2007 or permission of the Department.

Lectures and laboratory four hours a week.

GEOM 3999 [0.0 credit]

Co-operative Work Term

Work term

GEOM 4003 [0.5 credit]

Remote Sensing of the Environment

Advanced image enhancement; land cover classification for thematic mapping; biophysical modeling; applications in resources, environment, and urban mapping.

Prerequisite(s): GEOM 3002 and Honours standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 4005 [0.5 credit]

Directed Studies in Geomatics

Students pursue their interest in a selected theme in Geomatics on a tutorial basis with a member of the Department.

Prerequisite(s): fourth-year Honours standing in Geomatics and permission of the Department.

GEOM 4008 [0.5 credit]

Advanced Topics in Geographic Information Systems

Advanced methods and techniques in GIS applications including: positional and attribute error analysis, multiple criteria decision making, interpolation, elevation modeling and ortho-imaging, and spatial pattern measurement.

Prerequisite(s): GEOM 3005 and Honours standing.

Lectures two hours a week, laboratory two hours a week.

GEOM 4009 [0.5 credit]

Applications in Geographic Information Systems

Project design and customization, application development within a GIS, digital atlas compilation and geomatics education.

Prerequisite(s): GEOM 3005.

Workshop three hours a week.

GEOM 4406 [0.5 credit]

Practicum I

Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4408.

Also listed as GEOG 4406.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4408 [0.5 credit]

Practicum II

Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4406.

Also listed as GEOG 4408.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4906 [1.0 credit]**Honours Research Project**

Candidates for B.Sc. with Concentration in Geomatics undertake a research project within their area of specialization. The project is supervised by a member of the department and a written report must be submitted. The candidate may be examined orally on the report.

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in BSc Geomatics, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOM 4909 [1.0 credit]**Honours Research Thesis**

Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Precludes additional credit for GEOG 4904 / GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOG 4909, ENST 4906 and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.A. Geomatics, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.