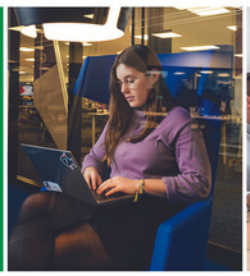
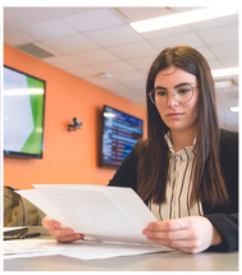
Co-op Program

APPLIED GEOMATICS





Applied Geomatics prepares highly-trained professionals capable to capture and assess complex environmental matters and to ensure optimal management of natural resources. Students learn to gather, manage, analyze and distribute high volumes of information, including snow, atmosphere, ecosystems and urban data. This program provides the necessary training in cutting-edge technology for spatial analysis, forecasting and modeling using geomatics-specific software.

Moreover, at the core of the program is a project-based learning methodology that helps students to master advanced writing, analysis and synthesis skills, and promotes constructive teamwork. They can efficiently suggest solutions to managers and decision-makers.

WHAT OUR STUDENTS CAN DO FOR YOU

Science and Technology

- Project management
- Write proposal, reports and scientific presentations
- Earth observation
- Geographic Information Systems (GIS)
- GPS geopositioning
- System modeling
- Spatial analysis
- Conventional and computer-aided cartography

Environment

- Problem analysis and solving
- Geomatization of organizations
- International development
- Emergency response organizations (civil protection)
- Watershed management and surveillance
- Analysis of human and medical geography
- Transport security and management
- Spatial analysis in demography
- Flora and fauna distribution and biogeography
- Environmental impact study
- Management of natural ressources
- Analysis of the human activity impact on the environmental
- Environmental assessment of studied cases

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USherbrooke.ca/ssdp/en

UDS Université de Sherbrooke

KNOWLEDGE AND SKILLS

Term	Description
S-1	Principles of cartography; mapping; spatial data digitization and image georeferencing with ArcGIS 10; relational databases with MySQL; introduction to geoenvironmental applications; general ecology; biometry; statistics study; mathematics for geomaticians.
S-2	Principles of geomatics; general notions of geomatics and spatial analysis with ArcGIS 10; introduction to open source GIS software; database digitization and modeling using ArcGIS; GIS scripts and macros in Python, etc.; advanced mathematics for geomaticians; terrestrial ecosystems; building a spatial database in ProgreSQL.
S-3	Geopositioning and map projection; geodesy; enterprise GPS, accuracy GPS and ArcPad; principles of remote sensing; analog and digital imaging using PCI Geomatica; remote sensing physics; signal calibration; ground measuring; signal capturing equipment; aquatic ecosystems.
S-4	Web geomatics using MapServer, OpenLayers and OpenGeo; space-time analysis using ArcGIS and Excel extensions; aerial imagery and interpretation of topographic maps; Summit Evolution photogrammetric software; laboratory analysis of soil samples and watershed field analysis; ecotoxicology and pollutant management.
S-5	Project management using MS Project; project-based learning (PBL) definition; team project; advanced remote sensing: climate change and resource conservation; advanced geomatics programming.
S-6	Principles of land/urban development and impact assessment; spatial demography; multivariate analysis; social issues related to demography with SPSS and R; data gathering and analysis as part of PBL; team project; presentation of decision-making support scenarios in the management of natural resources and of environment as part of PBL.

ORGANIZATION OF STUDY (S) AND WORK TERM (W)

1st year			2nd year			3rd year		
FALL	WIN	SUM	FALL	WIN	SUM	FALL	WIN	SUM
S-1	S-2	W-1	S-3	W-2	S-4	W-3	S-5	S-6