

# EMBEDDING ANALYTICAL CARTOGRAPHY IN GEOTECHNOLOGY EDUCATION

Douglas Banting and Shuguang Wang

*School of Applied Geography*

*Ryerson Polytechnic University*

*350 Victoria Street, Toronto, Ontario*

*M5B 2K3 Canada*

Contact: [dbanting@geography.ryerson.ca](mailto:dbanting@geography.ryerson.ca) [swang@geography.ryerson.ca](mailto:swang@geography.ryerson.ca)

Interest in education involving Geographical Information Systems continues to increase, but cartography is under-represented in this process. At Ryerson Polytechnic University eight specialty niches have been developed to reflect employers' expectations that span a diverse array of applications. Nevertheless, analytical cartography remains central to each of these niches. In general, all graduates are expected to have developed the following: mature skill sets generated from meaningful experience with specific map analysis software, a perspective that recognizes the strategic value of spatial analysis in meeting the mandate of the organization, and appreciation of maps as media for the investigation and visualization of data. While each of these areas is addressed in all geotechnology courses, the emphasis is adjusted depending on the program in which students are enrolled. For those in the undergraduate program in Applied Geography, there are several courses covering geographic paradigms in applied research and data management. Topics that are emphasized are both more broadly inclusive and intensive than for other groups and are supplemented by project management, independent research and internship. Courses offered to students in Urban and Regional Planning, Occupational and Public Health, Business Management, and Hospitality and Tourism Management are professionally-related electives. In these courses, applications in their specific fields are emphasized, as are concerns for specific data sets, data processing, and the map-analysis perspective. For subsequent specialization, they are referred to post-graduate courses in Continuing Education certificate programs. Graduate-level courses are available to students in the Master's in Spatial Analysis and Environmental Applied Science and Management programs. In the former, geospatial databases and their use in Business Geography and Physical Geography are the central theme, whereas in the latter degree, there is one course for students focussing on environmental science and management. The mix of skillsets, data issues and mapping concerns reflects the advanced issue-management expectations of graduate-level courses. Continuing Education courses in two current programs are also at the post-graduate level, but result in a certificate rather than a Master's degree. The Certificate in Applied Digital Geography and GIS provides courses at the introductory, application and advanced levels, allowing some specialization to be developed.. The Certificate in Geotechnology. for Teachers is a distance-education set of courses aimed at upgrading high-school instructors in order to promote deliver of the new high school curriculum which includes geotechnologies. In addition, a third certificate in which GIS is offered is Environmental Management. In this program a single GIS course provides an overview of the technology and its applications. Customizing the curriculum offerings to these groups of students has necessitated continued planning and reliance upon networking to ensure that needs of individual graduates and potential employers are met.