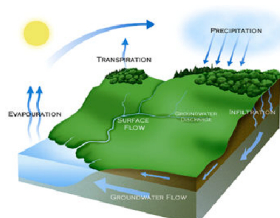




Environmental and Resource Studies Program/
Department of Geography
ERSC/GEOG-464
Integrated Watershed Management

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Demonstrator:
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Introduction

Watershed management involves informed decision-making in a complex array of biophysical, social and economic environments made up of ecosystems, interactions between ecosystems, their components and between human groups intervening in such ecosystem processes. Decisions involve the allocation of resources, formulation of policies, interventions in, and manipulations of natural resources present in the area confined by a watershed or hydrological basin. Due to the complexity of issues involved in watershed management, this requires of a multi-disciplinary, holistic and integrated approach. Managing watersheds recognizes the interconnectedness and relationships of mutual dependence between the ecosystems present and the degree in which manipulations of the structure and functions of one ecosystem may result in inputs and changes to the structure and functions of other related ecosystems. The Integrated Ecosystems Management (IEM) approach is used in this course as both, a paradigm for watershed planning and management, and as a tool for analysis of the complex natural and human resource and policy issues involved in attempting its implementation. The course deals with methodological and practical aspects involving the different phases of watershed planning and management from resources inventories to problem detection, diagnosis, rehabilitation, remediation and conservation, involving participatory implementation and conflict resolution. The course focuses on the relevant issues related to the management of watersheds anywhere but provides an international perspective particularly from developing countries.

Objectives

This course will:

- a). Introduce students to the universal principles involved in watershed functions and those underpinning watershed management problems and decision-making.
- b). Examine strategies for planning and managing watersheds in general, and in the particular contexts of developing countries.
- b). Provide exposure to watershed management issues for a wide range of conditions from watersheds relatively non-impacted by human development to restoration techniques and issues in watersheds heavily impacted by development.
- c). Provide an opportunity for in-depth practical teamwork in the formulation of watershed management strategies and plans.

Course requirements, assignments, grading and deadlines.

The course is delivered in a one 2-hour lecture and a one 3-hour workshop session weekly. Lab/ Tutorials will be based on a combination of:

- a). Workshop sessions will be oriented to practical work and to "learning by doing" and putting to practice technical knowledge acquired in lectures for particular aspects of watershed management, through an assigned case study.
- b). Presentations of specific research topics by students (tutorials).
- c). Presentations given by invited speakers experts in the different fields of watershed management (tba).

Attendance to all workshop sessions, tutorials and to presentations is mandatory and will be noted.

The focus of this course is on the confluence of science, policy and community participation on problem-solving and the formulation of management strategies through real case studies in watersheds, following the IEM approach. The formulation of an integrated watershed management plan is a major component of this course and will be performed by student teams. Work on the management plans will progress in parallel to the course and will be performed during the larger part of the lab/ workshop sessions. The final watershed management plan is assembled as the integration of all the lab/workshop sessions.

Software Tools: Computer models of various kinds and other digital modelling software, statistical software, databases, GIS and other data processing tools will be utilized in the completion of the integrated watershed management plans. It is assumed that students have a basic degree of familiarity with these tools.

Workload Warning: Due to the nature of the case study sessions, the successful completion of the assignments may require time in excess of the times indicated in the calendar and time-table, depending on the ability of student teams and the ability to proceed independently.

Field Trip: A field trip to watersheds in the vicinity of Trent University during the development of the course (graded to count for the final mark) or to a watershed in a developing country at the end of the exam period (voluntary and not counting for the final mark) are a possibility and will be discussed and arranged depending on circumstances surrounding the development of the course.

Grading of the course will be according to the following scheme:

Complete Integrated Watershed Management Plan (case-study)	35%	(marked as the aggregate of individual labs)
Tutorial Presentations (specific topics presented by students).....	15%	
Presentation (defense) of Watershed management Plan.....	20%	
Final Exam.....	30%	

Academic Dishonesty:

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offense and carries penalties varying from failure in an assignment to suspension from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's Academic Dishonesty Policy which is printed in the University Calendar.

Grammar and Style: It is expected that written submissions in Geography courses will conform to high standards of grammar and style. Although the penalty may vary from course to course, and from one kind of written work to another, bad grammar and style will be penalized in all grading of written work submitted in Geography courses.

Access to Instruction

It is Trent University's intent to create an inclusive learning environment. If a student has a disability and/or health consideration and feels that he/she may need accommodations to succeed in this course, the student should contact the Disability Services Office (BL Suite 109, 748-1281, disabilityservices@trentu.ca) as soon as possible. Complete text can be found under Access to Instruction in the Academic Calendar.