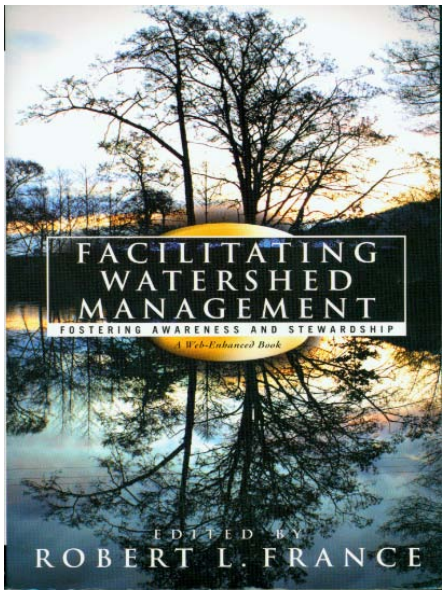
—Winter Term Module Online Course for Graduate Students—

WATERSHED MANAGEMENT



Watershed Management is a fully online, graduate level module course that offers basic knowledge about thesocial-ecological management of watersheds. It is a non-quantitative course that has a "Humanities" designation. The course will appeal to students with interests inthe environmental management, landscape architecture, sustainability policy and science, regional planning, urban design, and environmental education. See overview of course topics below. By the end of the module, students will be able to:

- Understand selected elements of Canadian water policy
- Understand the principles of effective, integrative watershed management
- Recognize how GIS analysis can aid in studying deleterious human influences on freshwater ecosystems (without learning how to specifically conduct GIS analyses per se), and the importance of stewardship and participation in successful environmental management
- Understand the diversity of options available to improve social-ecological conditions through land-use planning in international settings

The next offering of this course will begin on January 5th, 2022 and run for 5 ½ weeks.

A face-to-face version of this course has been taught at Harvard, Ca'Foscari Venice, and Dalhousie Universities. An extended version of the present online format has been taught for a half decade and has developed a reputation among students and distance learning professionals for being one of the best organized online courses offered at the

university. Its reputation is such that it has attracted students enrolled at other universities.

*[University students whom have taken this course before include those in Graduate School from the faculties of **Agriculture, Management, and of Architecture & Planning**, and undergraduate students in Environmental Science, International Development Studies, Landscape Architecture, Earth Sciences, Biology, Integrated Environmental Management, Philosophy, Marine Biology, Sustainability and Society, and Plant Science.].*

Textbook

France, R.L. (Ed.) 2005. *Facilitating Watershed Management: Fostering Awareness and Stewardship*. Rowman& Littlefield. An open-access website, *Integrated Watershed Management*, from the University of British Columbia will serve as an additional course textbook.

Module professor

Robert France is an ecologist and environmental scientist with a specialized interest in landscape processes and land use planning. For more than a decade he taught in the Landscape Architecture Department at the Harvard GSD (Graduate School of Design). He has published over two hundred papers and two dozen books which have been cited ten thousand times in the professional literature. Among his books are a handful that have helped to define the emerging field of watershed management. These include:

- *Introduction to Watershed Development: Understanding and Managing the Impacts of Sprawl*. Rowman & Littlefield. (2006).
- *Wetland Design: Principles and Practices for Landscape Architects and Land-Use Planners*. (2003)
- *Road Ecology: Science and Solutions*. (co-authored) Island Press (2003)
- *Handbook of Water Sensitive Planning and Design*. CRC/Lewis (2002)

Course format, expectations and assessment

Graduate students taking *Watershed Management* are enrolled into and take the first module of the full-length 'Watershed Management & Environmental Restoration' course simultaneous to other Dalhousie students. (Note: it is possible for graduate students to take an upgraded version of the complete undergraduate course for full grad course credit by enrolling in a linked Special Topics Grad course).

For each week, learning material is presented in several different formats. First, a set of power point presentations (PPTs) are provided that contain information distilled from many pertinent sources. These PPTs contain voice-over dialogue by the professor to guide the participant through, while emphasizing the most important elements therein. Next, one or several video lectures are viewed. These are our virtual guest speakers --

representing some of the world's leading practitioners and researchers – who were filmed previously at a series of conferences run at Harvard and Dalhousie Universities.

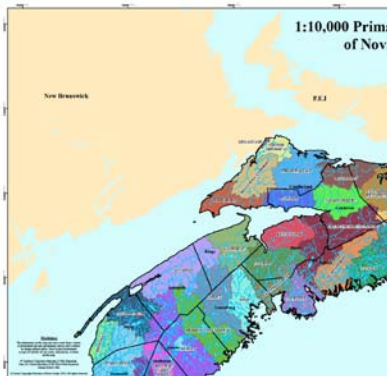
Students have to produce a list of short salient points that demonstrate they have viewed the online material and have clearly understand its take-away lessons. These are submitted several times during the module.

There is no final exam. Detailed instructions will be provided for the assignments.

In addition to the salient points (25% of grade), students will have to:

- Produce a short critique of several closely affiliated journal articles (25% of grade).
- Write a thematic essay about one element of interest concerning watershedmanagementand education based on material covered in the module (50% of grade).

<u>Watershed Management and Education</u>:



Watersheds have become recognized as being the most effective landscape units for ecologically sound environmental management and planning, as well as for environmental education. Managing watersheds is often about managing people in the watersheds. This module will explore the sociology and science of watershed management and planning by reviewing the successes and limitations of illustrative case studies. Background topics include: watershed atlases, water sensitive planning, water resource and watershed management, land-use systems analysis, and community-based monitoring and management by 'citizen-scientists.'