



ENVIRONMENTAL AND RESOURCE STUDIES

ERST 4810H – Ecological Design

Winter session, 2010/2011

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Course Times and Locations:

Lectures: Tuesday 9:00 – 10:50 a.m., GCS 108
Seminars: Tuesday 3:00 – 3:50 pm., GCS 108

What this course is about

Design is all around us. It is in the clothes we wear, the toothbrush we use, the sink in which we wash, the drain that moves the water out of the house, and the pipes or tile beds that carry the water away. The buildings in which we live and work, the roads and parking lots that move our cars, the cars themselves, the recreation trails and sports fields on which we play have all been designed to accommodate human needs. The list of designed “things” in our world is endless and it reaches from pole to pole with an immeasurable impact on natural systems and species.

Throughout history nature has more often than not been viewed as an obstacle to the design of the human environment. Taming, controlling and conquering the water, vegetation and wildlife has been the answer to dealing with the “obstacles” of the natural environment. The loss of forests, wetlands and many animal and plant species

suggests that human influences, through design on the land, tend to be destructive to the ecological balance. Design, however, is also concerned with the concept of change and with it the many opportunities to create diverse, healthy, and sustainable environments that may be different from the original but none-the-less environmentally beneficial.

This course will explore design theory and process and provide students with an opportunity for practical application to a real design problem. Understanding design as it relates to balancing human use of the land and environmental sustainability will be a common theme. Topics will include history of design on the land, understanding the design process, players in the design and urban planning industry, storm water management strategies, shoreline development and bio-engineering approaches, planting design and the role of plants in the urban environment, public and stake-holder input approaches and design communication, green buildings, and urban design strategies.

Students will learn first-hand practical and current environmental design approaches. Using information gained from lecture material and guest speakers, students will apply their new design knowledge to a semester-long project that will touch on the key course topics.

This course includes one two-hour lecture each week and a one-hour seminar each week. Seminar time will be used to continue lectures, clarify the design process related to the major project, or work through project related tasks in a workshop format.

Course Assignments

Semester long Design Project

Based on information and procedures presented in lectures, students will prepare a design strategy for a fictitious yet probable project on a real site. Preparation of the design strategy will touch on all the phases of the design process: collecting information from the client, setting goals and objectives, preparing a site inventory and analysis, conceptual design development, and, ultimately, a final plan.

The completed design strategy will have a combination of written, graphic and photographic information combined into a report format document suitable for complete and clear communication and presentation of the design.

Some of the course seminars will be used to discuss how lecture information can be applied to your designs. Since each aspect of the design process is built upon previous work, students are strongly urged to work through this project on a weekly basis in order to effectively apply knowledge from the lectures.

There are two due dates for the Major Design Project. The submissions of work will be based on skills learned in lectures and will follow the sequence of work required in a real design project. The first submission will be marked independent of the final submission but the product will be used to further your designs and ultimately be included in the final submission.

The **first submission** will focus on developing keen observation and analysis skills and conceptual design development. Such skills are a very important aspect of design solutions that respect natural systems and human development needs.

An opportunity statement, goals and objectives and a site program for your project will be formulated and recorded.

Students will need to spend time on the site recording information. They will then need to document that information on an inventory and analysis plan including a list of opportunities and issues to development

Synthesis of the Inventory and analysis will be conducted to prepare a framework for the design. The framework will include: a) preparation of relationship diagram options, and b) preparation of concept plan options and rationale for selecting the most favourable plan. This submission will take your design solutions to a documented conceptual level that clearly sets the functional direction of the design.

The **final submission** will be a refined design that expresses defensible design decisions related to form, function and principles of ecological design. Students will be encouraged to research and explore ecological design strategies and apply examples to the various components of their design projects. This submission will include a final refined plan and a design brief that includes a description of your plan that clearly outlines the functional, aesthetic and ecological benefits.

Tests

There will be two tests that focus on previous lecture topics including but not limited to, design process, ecological principles of design, smart growth, active transportation. Topics covered for each test will be identified the week prior to each.

Grading Scheme

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| Test | 20% |
| First project submission | 25% |
| Test | 20% |
| Final project submission | 25% |
| Seminar and lecture participation/attendance | 10% |

NOTE: There will be a 1% per day (including weekends) late penalty applied to work that is not submitted by the end of the work day (closing of the ERS office) of the due date.

Quality of Work

Communication of design ideas is critical to explaining and ultimately gaining approval of designs. The ability to write clear, well-organized, grammatically correct and properly documented academic assignments is essential. Students should consider contacting the Academic Skills Centre if you would like assistance in improving your writing skills. It would also be helpful to consult the Skills Centre's publications that discuss writing. Please feel free to contact me if you wish to discuss ways to improve your written or graphic report information.

Academic Integrity

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's *Academic Integrity Policy*. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more: www.trentu.ca/academicintegrity.

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.