ENVIRONMENTAL DESIGN PROGRAM
FACULTY OF ARCHITECTURE • THE UNIVERSITY OF MANITOBA
Summer 2020

ENVIRONMENTAL TECHNOLOGY EVDS 1680

Instructor’s Name: Suchita Ghosh
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Availability for consultation: by appointment only

Number of Credit Hours: 3
Class Times & Location: MTWThR 1:00 pm - 2:30 pm, Remote Learning Course

Pre-Requisites: None

Calendar Description
An examination of the scientific principles embodied in the natural laws which govern the science and technology of building, landscape and environmental design in the context of sustainable development. Factors of climate, geology and natural resource systems and their effects upon the built environment at a range of scales are introduced.

Course Description
This course explores the intersection of the built environment and natural systems. To establish this relationship, bearings of natural systems (of sun, wind and water) on the built environment is reviewed. To better understand the challenges posed by the relationship between science and technology and issues of urbanization, the impact of contemporary design thinking, methodologies and practices on buildings, cities and landscapes are examined. Emerging environmental issues such as natural resource depletion, fossil fuel dependencies, rising sea levels and climate change are probed.

Environmental technology is presented as the application of scientific principles to document, conserve and transform the natural environment. Sustainable development is the core of environmental technologies. Students will be encouraged to develop a critical position on the relationship and interaction of natural systems and human intervention.

This class will combine lectures, project-based critique and workshops. Key theories and their application to contemporary architecture at varied scales will be considered. Lectures will introduce the theory and practice of Environmental Technology, the use of environmental design software, and the investigation of built precedent through case studies of buildings, landscapes, cities and policies.
Course Objectives

- develop knowledge of technical, analytical and design tools essential to resolving technological challenges in environmental design.
- provide foundational knowledge regarding the natural processes that give form to the environment and the ability to interpret and apply to an informed design process.
- develop recognition of the basic principles and ethics of environmental and resource conservation at the urban, regional and global level.
- cultivate understanding of the relationship between human and natural systems in applications such as resource conservation, habitat restoration and creation and urban ecology.
- develop comprehension of issues of equity and social/environmental justice at a range of scales from site to urban environments to region.
- establish a vocabulary based on key concepts related to Environmental Technology.
- identify basic methods of research to explore a topic of study and to understand existing knowledge; conduct research in a manner compatible with principles of academic integrity.
- introduce the use of software to investigate relationships between climate, comfort and the design of the built environment.

Learning Outcomes

- demonstrate knowledge of technical, analytical and design tools essential to resolving technological challenges in environmental design.
- apply and disseminate foundational knowledge regarding the natural processes that give form to the environment and foster the ability to interpret and apply these to an informed design process.
- express recognition of the basic principles and ethics of environmental and resource conservation at the urban, regional and global level.
- demonstrate an understanding of the relationship between human and natural systems in applications such as resource conservation, habitat restoration and creation and urban ecology.
- communicate understanding of issues of equity and social/environmental justice at a range of scales from site to urban environments to region.
- apply a vocabulary based on key concepts related to Environmental Technology
- apply basic methods of research to explore a topic of study; conduct research in a manner compatible with principles of academic integrity.
- demonstrate the application of software as a tool to validate the relationship between climate, comfort and the design of the built environment.