Course Syllabus for Geography 2130Y and Earth Sciences 2130Y:

Field Geography and Geology of Southwestern Ontario

Course Information:
Lecture: Tuesday 9:30-11:30 Location: Social Sciences 3010; Field trips (see below)
Prerequisites: none
Transportation fee: yes
Instructor:
Dr. Desmond Moser
Rm. 1070, BnG Bldg., desmond.moser@uwo.ca/ Rm. 2410, Social Sciences Bldg.
*TA:*Sara Belontz (sbelontz@uwo.ca)

Calendar Description:
A field-trip based course exploring the history and patterns of the geology, physical landscapes and resources of southwestern Ontario. Usually offered in the first half of the Fall semester; four mandatory, full day field excursions (transportation fee required, tbd in first week of class) supported by a weekly lecture.

Course Objectives:
The main objective of this course is to provide field-based education in the natural history of the geology and natural resources, and physical and rural landscapes, of southwestern Ontario while teaching basic technical skills beneficial to field studies and research. The course is also intended to increase the number of potential field education experiences for students early in their undergraduate programs.

Learning Outcomes:
Technical learning outcomes will be map and air photo interpretation, field orientation skills (hand-held compass and Global Positioning System unit), awareness of basic field safety protocols, rock and mineral identification, soil and landform identification, distance estimation skills, and basic water quality measurements. This skill set is deemed beneficial to all field-based study and research. A broader learning outcome will be an increase in general knowledge of the geography and geology of southwestern Ontario, as well as an appreciation of how the features studied in these two disciplines are related in nature.
Upon successful completion of this course, students will be able to:
* Identify several rocks and fossils common to Southern Ontario bedrock and glacial deposits (e.g. limestone, sandstone, shale)) as well as basic primary sedimentary structures (e.g., beds, ripple marks) based on exercises and questionnaires completed in the field;
* Identify glacier-related sediments such as till, pro-glacial muds and aeolian deposits based on field exercises and questionnaires;
* explain the geologic, resource, and hydrologic substructure of southwest Ontario based on field visits and questionnaires;
* Describe how regional climate and tectonics have shaped southwestern Ontario landscape and vegetation through lectures and field questionnaire using regional Digital Elevation Models;
* Identify common Carolinian tree species and their historical distribution through lecture combined with mapping exercises and questionnaires completed in the field (e.g. Pearce Prov. Park);
* Apply geolocation and basic mapping skills to future fieldwork
* be aware of the First Nation community approach to land stewardship and conservation through field visit with community leaders (conditional annually on community approval of access)

Activities and scheduling:
The main course activity will be the four full-day field excursions. These will be run on Friday's in the early part of the Fall semester and will depart and return from a clearly designated location on the UWO main campus. A typical trip will depart at 9AM sharp and return late afternoon. **Participation on all trips is mandatory** (details concerning alternative weighting of course materials due to severe illness, dire personal circumstances etc. are included in the course outline), and students must use the class transportation provided. Each trip will have a main theme around which sub-themes will be developed.

Friday *field trip dates for* ***2017*** *are:*
Sept. 22nd
Sept. 29th
Oct. 20th
Oct. 27th
Weekly, 120-minute, classroom lectures in ***2017*** will begin **Tuesday, Sept 13th**. Lectures will introduce background material supporting the field trips, and allow review of written assignments related to the previous field excursion. The FINAL evaluation in ***2017*** is scheduled for **Tuesday**, **Nov 7th in class**.

Evaluation:
Course performance will be evaluated on the basis of written assignments mainly completed on field trips, and quizzes on lecture and field course content written in the classroom.

Field trip assignments will be handed out at the outset of each trip and returned to the TA upon return to UWO. They will consist of short questions accompanied by maps and air photos. They will be of 'questionnaire' format with questions coordinated in sequence with field trip sites. The successful completion of the assignment will require basic, independent, and sometimes group, problem solving. Completed answers on field questionnaires may require, for example, provision of a definition of landform features accompanied by clear and proper field sketches (i.e. scale, oriented perspective), distinguishing features of minerals, soil or plants, correct identification of field locations on maps and airphotos as well as features such as outcrops, old shorelines or channels, vegetation types. During the course of the excursion, and the preceding classroom lecture, the instructor will provide information required to assist problem solving and questionnaire completion.
For certain field trips, a take-home tutorial assignment will be due the week following the field excursion. This may consist of compilation and review of data collected during the excursion by the student (e.g. compiling and plotting GPS locations using web-based resources).
Classroom written evaluations will require a mixture of multiple choice, short-answer and longer format written responses as well as completion of brief map-based questions. A Mid-course evaluation will serve to alert the students to the level of field excursion content for which they are responsible in addition to familiarizing the students with the style of questioning they will see in the final, comprehensive course evaluation.

Evaluation structure
Field excursion assignments: 60% (4@15% each)
Mid-course written evaluation: 5%
End-course written evaluation: 35%

Field trip themes anticipated for* ***2017*** *are:*
Sept. 22nd – Crustal structure of SW Ontario; Niagara gorge and escarpment
Sept. 29th – OGS core library, petroleum resources, St. Mary's quarry, rock and drill core examination, Quaternary sediments, modern hydrology

Oct 20th – Postglacial and Modern Shorelines, Canadian Shield detritus; Lake Erie Bluffs
Oct 27th– Lake waters, soils and Carolinian forest biogeography (Bkejwanong Territory, Walpole Island*)

*pending permission of host community

Field trip safety:
Students will be required to wear appropriate field safety equipment at all times. Details will be given in class. **Signed field trip safety waivers are prerequisite.** This form is available on the Geography Health and Safety website:
http://geography.uwo.ca/undergraduate/docs/field_methods/field_methods_waiver.pdf

Lectures:
*Classroom topics in chronologic order for **2017***
1) **Sept. 12th**: INTRODUCTION; Course introduction, examples of Geographic and Geologic field research, overview of field excursions and their relationship to SW Ontario natural history and resources, nature of the field work, explain data collection and recording tasks
2) SW ONTARIO AT DEPTH, THROUGH TIME; overview of the subsurface geology, structure and paleogeography of the region, timescale of events in the landscapes and subsurface of SW Ontario, introduction to types of maps/ DEM of SW Ontario.
3) SW ONTARIO LITHOSPHERE; EVOLUTION AND RESOURCES Unconsolidated and consolidated
sediments, crystalline rock types in the context of the rock cycle; A vertical cross-section of SW-Ontario from surface to base of lithosphere; Synopsis of tectonic, eustatic and glacial history of the region; Fossil fuel resources of SW Ontario related to subsurface structure and history, e
4) **Oct 3rd: Mid-course written evaluation in class**
5) CRYOSPHERE PROCESSES AND SW ONTARIO. Glacial and Post-glacial history of SW Ontario, Isostatic rebound – process and consequences for SW Ontario post-glacial topography; coastal processes of erosion, sediment transport and deposition, coastal landforms; lacustrine stratigraphic records of climate and post-glacial change,;
6) SW ONTARIO EXO-BIOSPHERE. Soil types related to bedrock and quaternary deposits; Introduction to biogeographic change and flora of SW Ontario; Limnology of hydrology of SW Ontario, Carolinian forest types
7) SYNOPSIS. Overview of natural history of SW Ontario; Review class
8) **Nov 7th: Final written evaluation in class**

NB:
An excuse from a field trip or evaluation is only allowed in cases of serious medical illness. If UWO requirements are met completely (see below), an alternate work assignment may be arranged.

Materials:
No textbook is required for this course. Students may wish to consult map information on the region at http://www.mndmf.gov.on.ca/mines/ogs_earth_e.asp

Statement on Use of Electronic Devices
No electronic devices will be allowed during classes (field trips), tests and examinations.

For UWO Policy on Accommodation for Medical Illness and a downloadable SMC see:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf
[downloadable Student Medical Certificate (SMC):
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

Statement on Academic Offences
Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: **http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.**

Support Services:

Registrarial Services: http://www.registrar.uwo.ca/
Student Development Services: http://www.sdc.uwo.ca/

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 if you have questions regarding accommodation.

The policy on Accommodation for Students with Disabilities can be found here:
www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Learning-skills counsellors at the Student Development Centre (http://www.sdc.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western (http://www.health.uwo.ca/mental_health) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, http://westernusc.ca/services.

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit the site below for more information on mental health resources:
http://www.uwo.ca/uwocom/mentalhealth/.