Interdisciplinary Experiences (3IE1/2/3)

Fall 2014 Modules

Kentucky Caving Fieldtrip (ARTSSCI/ISCI 3IE1)

Instructors: John Maclachlan and Chad Harvey

This is a four-day fieldtrip to Cave City, Kentucky (October 16th-19th) to explore karstic geomorphology, perform underground biological inventories, discuss the rich local caving history, and consider the environmental issues caused by mismanagement of these natural features. Among the caves visited will be the Hidden River Cave System, Cub Run Cave and an extensive tour of the largest cave system in the world, Mammoth Cave. Student evaluation will be based upon a pre-trip assignment, course participation, and a post-course reflection.

Please note that there is a $350 trip fee to cover accommodations, transportation, and park entrance fees. A $100 deposit is due upon application submission. All participants must have a valid passport for travel to the U.S.A. Proof of valid passport must also be submitted with the application.

Enrolment Limit: 18 students
Application Deadline: September 10, 2014 at 1pm

Grant Writing: Integrating Science, Sustainability and Community (ARTSSCI/ISCI 3IE1)

Instructor: Chad Harvey

The ability to research, write and apply for grant funding is a skill that is truly interdisciplinary. Whether an individual is pursuing a career in academics, government, or private industry, proficiency in grant writing is necessary and a highly marketable asset. Students will experience the entire grant writing process, from research of potential funding sources; scripting an appropriate background, purpose, budget and timeline; to writing and submission of the finished grant application.

Grants will be sought to support and maintain community outreach initiatives here at McMaster. Examples of these initiatives include the McMaster Teaching & Community Garden (MTCG), McMaster Outdoor Learning Space (MOLS), McMaster Eco-Lab (MEL), and McMarsh, a reclamation project for Lot M.

Enrolment Limit: 8 students
Application Deadline: September 10, 2014 at 1pm

Electronics for the Rest of Us! (ARTSSCI/ISCI 3IE1)

Instructors: Dale Askey, Jason Brodeur, John Fink and Matt McCallow

To most of us, the workings of the electronic devices that accompany (and enable!) our everyday lives often seem mysterious and opaque, an area of concern for only the most qualified “techies.” Though a basic understanding of electronics and programming is
generally viewed as a core competency for 21st century success, these topics remain intimidatim as they often appear inaccessible to many students from non-technical disciplines. This doesn’t have to be the case. The development and widespread availability of inexpensive, user-friendly and well-documented electronics — such as the Arduino — has made learning and developing these skills accessible (and dare we say, even fun) for students of every age. Such resources now make it possible for even the most inexperienced student to create with electronics, while simultaneously reaping the educational benefits associated with the application of logic and rules to make cool stuff.

Over the span of 3 classes (September 18th-20th) and open access to equipment and documentation, students will be introduced to the world of simple electronics and programming, and will have an opportunity to develop their skills by designing and building an electronic device of choice.

Please note that there is a $70 fee to cover the purchase of the custom course equipment pack. This fee is due upon application submission.

**Enrolment Limit:** 20 students  
**Application Deadline:** September 10, 2014 at 1pm

**Winter 2015 Modules**

**A Celebration of Winter as Place (ARTSSCI/ISCI 3IE1)**

**Instructors:** Bob Henderson and Patrick Byrne

Winter is the misunderstood season. We will explore winter as a fundamental expression of Canadian identity through the lenses of history, geography, and literature. While travelling by snowshoes and skis, and of course sitting around the fire, we will examine key stories and characters in our Canadian understanding of winter, including Franklin, Wendigos, Sam Magee, and Grey Owl. This exploration will also include the “idea of North” and the Norwegian friluftsliv approach to winter outdoor life. The central goal is to embrace the winter season as a “place” in our personal psyche and Canadian consciousness.

To do this we must be active in a thriving winter place where we are engaged in winter chores of chopping wood for our fires, drawing water from our ice hole, and clearing roofs of burdensome snow. We will learn the key winter activities of snowshoeing, cross-country skiing, building a snow shelter (Quinzee) and setting up a wall tent wood stove camp. This course will take place in Algonquin Park from February 19th – February 22nd.

Please note that there is a $200 trip fee to cover accommodations, transportation, and equipment rentals. A $100 deposit is due upon application submission.

**Enrolment Limit:** 15 students  
**Application Deadline:** September 10, 2014 at 1:00 pm

**Electronics for the Rest of Us, Part II: Adventure in the Making (ARTSSCI/ISCI 3IE1)**
**Instructors:** Dale Askey, Jason Brodeur, John Fink and Matt McCallow

**Prerequisite:** “Electronics for the Rest of Us!” or permission of the instructor.

In this intermediate-level course, students will further develop their electronic prototyping and production skills to conceptualize, design and prototype a working electronic device. Individually or in groups, students will work in an internally-motivated manner, where instructors provide support, resources, instruction and guidance as needed. Students may choose to work with their previously-purchased Arduino devices and peripherals, or may consider other devices such as Raspberry Pis, Beaglebone boards, Phidgets and Microsoft Kinects.

This module will run on the evenings of Tuesday 13 January, Tuesday 10 February and Tuesday 3 March.

**Enrolment Limit:** 20 students

**Application Deadline:** January 9, 2015 at 1:00 pm

**Introduction to Forensic Investigation (ARTSSCI/ISCI 3IE1)**

**Instructors:** Russ Ellis and Sarah Symons

Forensic science plays a crucial role in the criminal justice system. Interest in forensic science has increased dramatically in the recent years largely due to investigative television shows like CSI: Crime Scene Investigation, NCIS and Bones. Contrary to popular view, forensic experts do not “solve” crimes or “prove” guilt, they analyse evidence and indicate the likelihood of events. The emphasis on rigorous critical approaches and communication of results is obviously useful to young scientists and thinkers in any discipline.

This module is an introduction to the basic processes of forensic investigation. Topics will include crime scene investigation, evidence analysis, forensic anthropology, and the legal system over a six week period. Each week, material will be presented by expert professionals in selected fields of forensics for one hour, followed by an hour of hands-on experimentation in related topics. The course will run for 6 consecutive Monday evenings starting 23 February-30 March 2015.

Please note that there is a $30 course materials fee. This fee is due upon application submission.

**Enrolment Limit:** 16 students

**Application Deadline:** September 10, 2014 at 1:00 pm