Interdisciplinary Experiences (3IE1/2/3)

Fall 2017 Modules

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 Forest, and McMarsh, a reclamation project for Parking Lot M. Other project ideas can be discussed with the Instructor as potential options for grant funding.

A weekly meeting time will be determined that works for everyone’s schedule once Term starts. This meeting time will be used to discuss various aspects and purposes of writing a grant and to keep tabs on progress throughout the process. Meetings will be informal and collaborative.

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

Instructors: Jason Brodeur and Matt McCollow

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 intimidating, as they often appear inaccessible to many students from non-technical backgrounds. This doesn’t need 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.

This two-day workshop-style course aims to introduce students to the world of simple electronics and programming; give students an opportunity to develop their skills by designing and building a functional electronic device; and allow them to apply their skills and creativity in the process of creating an original device.
Module Schedule:
22 September 2017 5-9pm (Thode Library Makerspace)
23 September 2017 10:30am-4:30pm (Thode Library Makerspace)

Winter 2018 Modules

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

Instructors: Dale Askey and John Fink

3D printing has seen an explosion in popularity over the past few years. The technology is now settling to the point where it is becoming increasingly accessible to more people; however, most people however are still disintermediated from the process — they find a print online, take it to a printer, and have someone run the print off for them. This is completely wonderful and adequate for most people, but perhaps you’re the kind of person who wants to know more about how prints are made – from the design phase to the magical moment when your object comes off the printer bed. This course will be an introduction to that whole process, with the end result being a print that you designed yourself.

This three-day workshop style course aims to introduce students to 3D printing design software and hardware; give students an opportunity to apply their knowledge of software and hardware by producing a 3D printed object from start to finish; provide students with a greater understanding of the current and future state of 3D printing.

Module Schedule:
8 February 2018 5-8pm (Sherman Centre, Mills Library)
9 February 2018 4-6pm (Sherman Centre, Mills Library)
10 February 2018 11am-4pm (Sherman Centre, Mills Library)

McMaster University’s Nuclear Research Facilities (ARTSSCI/ISCI 3IE2)

Instructor: Andrea Armstrong

A week of experiential learning based at McMaster University’s Nuclear Research Facilities, including the McMaster Nuclear Reactor, the High Level Laboratory Facility, and the McMaster Accelerator Laboratory. Participants will be introduced to a wide range of nuclear science topics through a blend of practical sessions and classroom learning. In-class sessions will include an introduction to radioactivity, health effects of ionizing radiation and safe work practices, generation of radioactive materials, medical applications of radioisotopes, and neutron-based analysis techniques. Participants will get hands-on experience in detecting and characterizing radioactive materials, the production of radioisotopes and radiopharmaceuticals, neutron radiography, and more.

A background in nuclear science or engineering is neither expected nor required. Participants must consent to be designated as Nuclear Energy Workers. For more information on NEW designation, see http://www.mcmaster.ca/healthphysics/users/faq.html.
Module Schedule:
20 February 2018 9am-4pm (Nuclear Research Facilities)
21 February 2018 9am-4pm (Nuclear Research Facilities)
22 February 2018 9am-4pm (Nuclear Research Facilities)
23 February 2018 9am-4pm (Nuclear Research Facilities)

Kentucky Caving Fieldtrip (ARTSSCI/ISCI 3IE1)

Instructors: John Maclachlan and Chad Harvey

This is a four-day fieldtrip to Cave City, Kentucky (21-24 February 2018) 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 $400 trip fee to cover accommodations, transportation, and park entrance fees. A $150 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.

Module Schedule:
21-24 February 2018 (Cave City, Kentucky)

Egyptian Hieroglyphs (ARTSSCI/ISCI 3IE1)

Instructor: Sarah Symons

This module is an introduction to the script used by ancient Egyptians to decorate temples, tombs, and artefacts. Participants will learn principles of reading and translation via a combination of worksheets, exercises, and object studies. The objects are drawn from museum collections around the world and offer insight not only into the language but also into the culture of ancient Egypt. The module consists of four three-hour evening workshops and some out-of-class study. The module will end with a Saturday visit to the Royal Ontario Museum to view the Egyptian collection and try out newly-acquired reading skills.

Module Schedule:
26 February 2018 7-9pm (ThInk Space, Thode Library)
5 March 2018 7-9pm (ThInk Space, Thode Library)
12 March 2018 7-9pm (ThInk Space, Thode Library)
19 March 2018 7-9pm (ThInk Space, Thode Library)
24 March 2018 Time TBD (Royal Ontario Museum)

The Forge @ Mac: Student Entrepreneurship Explorations (ARTSSCI/ISCI 3IE1)

Instructor: Sarah Symons
This one-unit module will introduce students to entrepreneurship and The Forge. The Forge is Hamilton’s startup incubator and McMaster University’s on-campus entrepreneurship initiative. The Forge supports new tech companies and students interested in entrepreneurship by providing co-working space across two locations (at McMaster Innovation Park and in downtown Hamilton), training, resources and a network of alumni and mentors. Students will be required to attend 3 of 10 workshops offered by The Forge during the winter term (listed below), attend 2 Makerspace Meetup sessions in The Thode Makerspace (Monday evenings, details to follow), and review The Forge Student Startup Competition Application.

Monday, January 8th- Makerspace Meetup Launch (every Monday)
Tuesday, January 9th- Startup Competition Information Session
Wednesday, January 17th- So you want to be an Entrepreneur?
Thursday, January 25th- The Art of the Fail
Saturday, January 27th-28th- Deltahacks Hackathon
Wednesday, February 7th- Build and Brand: How to leverage the value of storytelling
Saturday, February 10th- MSS: Quantum Leap Conference
Tuesday, February 13th- SSC x Forge: Find your Love for Entrepreneurship
Tuesday, March 6th- Story Series: From Degree to Company
Thursday, March 22nd- Student Startup Competition