ISCI 4A12 Course Outline 2013/14

NOTE: This course outline supplements information provided to students in the ISCI 4A12 Integrated Science IV Thesis Course Description Document. Students must refer to the ISCI 4A12 Integrated Science IV Thesis Course Description Document for additional details regarding thesis components, deadlines and evaluation procedures.

Description and objectives

ISCI 4A12 is a 12 credit course open only to students in Level IV of the Honours Integrated Science program. The course consists of a 9-unit thesis component and 3-unit seminar component. ISCI 4A12 aims to:

- Provide students with the opportunity to conduct original research under the supervision of a full-time or associate faculty member of McMaster University;
- Engage students in collaborative discussion regarding individual research topics;
- Develop student skills in the areas of research question formulation, research design, experimentation and/or field data collection, analysis of data and communication of research findings;
- Develop student skills in the areas of research proposal writing, literature review, illustration of research findings, and thesis writing;
- Challenge students to present and defend their research findings to faculty and the general public in an oral presentation at the end-of-year iSci Symposium and in relevant departmental symposia;
- Assist students in the preparation of materials for post-graduate opportunities (e.g. graduate school, professional school and scholarship applications).

Program Website:
http://www.science.mcmaster.ca/isci/

Avenue to Learn site
http://avenue.mcmaster.ca/

Course Coordinator: Dr. Carolyn Eyles  eylesc@mcmaster.ca
Course Administrator: Ms. Sarah Robinson  sjrobin@mcmaster.ca
Instructional Team:

<table>
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<tr>
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Course requirements:
This course takes place over two terms, usually the Fall and Winter terms. The time commitment students need to allocate to this course will vary with the project, supervisor and student. As a general rule, students should expect to spend a minimum of 15 hours per week, with more time allocated to research early in the first term and to analysis and writing in the second term. It is not unusual for supervisors to require more than 15 hours per week, including time during evenings and weekends. Ideally, the experimental phase of the project should be completed by the end of January so that the remaining time in February and March can be devoted to analysis, writing and editing. All laboratory or field work must cease by early February to allow for data analysis, writing and submission of the thesis.

Course Components and Grading Scheme
Students in the course are evaluated on the basis of the following components:

A. Thesis component (150 points: equivalent to 9 units)

<table>
<thead>
<tr>
<th>Component</th>
<th>Suggested Weighting</th>
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<tbody>
<tr>
<td>Research proposal (due Friday, October 4, 2013, 16:30 pm)</td>
<td>5% (7.5 points)</td>
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<tr>
<td>Literature review (due Friday, November 15, 2013, 16:30pm)</td>
<td>15% (22.5 points)</td>
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<tr>
<td>Draft (due Friday, February 28, 2014, 16:30 pm)</td>
<td>10% (15 points)</td>
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<tr>
<td>Written Thesis (due Wednesday, April 2, 2014, 16:30 pm)</td>
<td>40% (60 points)</td>
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<tr>
<td>Work performed to collect &amp; analyze data (e.g. activities performed in the laboratory or field or using or generating data on computers). Marks due noon (12:00pm), Friday, April 18, 2014</td>
<td>20% (30 points)</td>
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<tr>
<td>Oral presentation at the Integrated Science Symposium</td>
<td>10% (15 points)</td>
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<tr>
<td>TOTAL</td>
<td>100% (150 POINTS)</td>
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All laboratory experimentation must be completed early in the second term and will form the basis of the draft. The supervisor MUST attend the presentation session during the iSci Symposium to ask questions of the student, and to grade the student on this component. Other members of the iSci instructional team may also contribute to the evaluation of the student’s oral presentation. After the supervisor provides comments on the first draft of the thesis, the student must make the corrections and submit the final thesis in a pdf format to the Course Administrator. If permission is granted by the supervisor, the document will be posted on the web or else archived in electronic format by the program.
Any modifications of the mark breakdown for the thesis must be discussed and approved by the supervisor, student and Course Coordinator.

Any change in submission deadline for any component of the thesis must be justified at least 5 days in advance, in writing to the Course Coordinator. The Coordinator will penalize late submissions by up to 5% per day.

Students must refer to the [ISCI 4A12 Integrated Science IV Thesis Course Description Document for additional details regarding thesis evaluation procedures and submission deadlines.](#)

**B. Seminar component (50 points: equivalent to 3 units)**

<table>
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<tr>
<th>Component</th>
<th>Suggested Weighting</th>
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<tr>
<td>Term 1: Participation</td>
<td>12% (6 points)</td>
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<tr>
<td>Peer review of three research proposals (2 points each)</td>
<td>12% (6 points)</td>
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<tr>
<td>Peer review of one literature review (8 points)</td>
<td>16% (8 points)</td>
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<tr>
<td>Professional development: 2 ‘reflections’ @ 2 points each</td>
<td>8% (4 points)</td>
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<tr>
<td>Term 2: Participation</td>
<td>12% (6 points)</td>
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<tr>
<td>Peer review of draft section</td>
<td>16% (8 points)</td>
</tr>
<tr>
<td>Peer review for iSci journal or Synthesis symposium</td>
<td>16% (8 points)</td>
</tr>
<tr>
<td>Professional development: 2 ‘reflections’ @ 2 points each</td>
<td>8% (4 points)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100% (50 POINTS)</strong></td>
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**Schedule of Activities** (these are subject to change so please check Avenue regularly)

**Term 1:**

Week 1: (Sept 2): NO CLASS

Week 2: (Sept 9): INTRODUCTION TO COURSE
RESEARCH PROPOSALS: Requirements & Deadlines
SCHOLARSHIP APPLICATIONS: Requirements & Deadlines

INITIAL MEETING WITH THESIS SUPERVISOR: No later than: Friday, September 13

Week 3 (Sept 16): SCHOLARSHIP APPLICATIONS (NSERC/OGS)
Overall timeline for application process, paperwork required, transcripts, reference letters, etc. (Invited Speaker TBA)

Peer Review Groups are formed for draft Research Proposal.

*Draft RESEARCH PROPOSAL due: September 19, 23:59pm via Avenue dropbox*

*CONFIRMATION OF SAFETY TRAINING: No later than: Friday, September 20, 16:30 p.m. Confirmation must be signed by student and supervisor.*

Week 4 (Sept 23): OPEN CONSULTATION SESSION: (Sign-up Sheet)
Discuss changes to proposals, research progress, literature review

*Peer Review of RESEARCH PROPOSAL due: September 25, 23:59pm via Avenue dropbox*

*Peer Review Feedback will be sent via email on September 26, 16:00pm*

Week 5 (Sept 30): RESEARCH PROPOSAL PEER-TO-PEER FEEDBACK (In class):
Class session based on written feedback (6 groups of 3, 1 group of 4)

*RESEARCH PROPOSAL: Due: Friday, October 4, 16:30 pm.*

*Proposals should be submitted directly to your supervisor.*

*Marks & Comments due to Administrator: Friday, Oct. 18, 16:30 pm.*

Week 6 (Oct 7): CREATING A CV: What should be included in your cv, what not to include

*Reflection #1 - on CV. Due in class via Avenue dropbox submission*

Week 7 (Oct 14): THANKSGIVING (no class)

Week 8 (Oct 21): GRADUATE/PROFESSIONAL SCHOOL INFORMATION:
Session on choosing a graduate school/program/supervisor
Letter of intent, personal statement, essays for graduate school apps

Week 9 (Oct 28): INTERVIEW WORKSHOP
Peer-to-peer review teams formed for draft Literature Review.

_Draft LITERATURE REVIEW due: November 3, 23:59pm via Avenue dropbox_

_Reflection #2: interview process. Due in class via Avenue dropbox._

Week 10 (Nov 4):

_STUDENT PROGRESS REVIEW:_ In class, 5 minute presentations on research progress to date.

_LITERATURE REVIEW FEEDBACK SESSION_ (peer to peer): Self-scheduled

Drafts exchanged between students for peer review. Drafts also sent to iCore.

_Peer Review of LITERATURE REVIEW due: November 10, 23:59pm via Avenue dropbox_

Week 11 (Nov 11):

_STUDENT MEETINGS WITH iCORE:_ Sign-up sheet (1 of 3 hours must be attended)

Discussion of literature review, research progress

_LITERATURE REVIEW: Due: November 15, 16:30pm_

_Literature review should be submitted directly to your supervisor._

_Marks & Comments due to Administrator: Friday, Nov 29, 16:30 pm._

Week 12 (Nov 19):

_OPEN CONSULTATION TO REVIEW GRAD SCHOOL APPS:_ Sign-up sheet (1 of 3 hours must be attended)

One-on-One feedback session to discuss CV, Letter of Intent or Personal Statement

Week 13 (Nov 26):

_OPEN CONSULTATIONS ON THESIS RESEARCH:_ Sign-up sheet (1 of 3 hours must be attended)

**Term 2:**

Week 1 (Jan 6):

_STUDENT UPDATES:_ individual presentations on research progress

_Reflection #3: research progress and research plan & timeline for January – April.
Due in class via Avenue dropbox_

Week 2 (Jan 13):

_PROFESSIONAL ETIQUETTE:_ (Lorna Somers)
Week 3 (Jan 20): DATA ANALYSIS WORKSHOPS: Sign-up sheet (1 of 3 hours must be attended)
Analytical tools - statistics programs, qualitative/quantitative data
Students can bring own data to work on.

Week 4 (Jan 27): OPEN CONSULTATION ON RESEARCH PROGRESS:

Week 5 (Feb 3): OPEN CONSULTATION ON RESEARCH PROGRESS:
Students can ask specific questions about their own data or issues with their research.
Groups can meet with iCore to discuss research progress

END OF ACTIVE RESEARCH: No later than: Friday, February 7, 2014
Peer-to-peer review teams formed for draft thesis review.
DRAFT THESIS for Peer-to-Peer review due: February 7, 23:59pm via Avenue dropbox

Week 6 (Feb 10): FEEDBACK SESSION ON THESIS DRAFT:
Rough drafts exchanged between students prior to this session (peer review).
Review edits and ask questions in the seminar.
Peer review of DRAFT THESIS due: February 10, 23:59pm via Avenue dropbox.

Reading Week (Feb 17):

Week 7 (Feb 24): STUDENT UPDATES: individual presentations on research progress

DRAFT THESIS: Due: February 28, 16:30 pm.
Draft thesis should be submitted directly to your supervisor. Marks & Comments due
to Administrator: Friday, March 7, 16:30 pm.

Week 8 (Mar 3): STUDENT PRACTICE PRESENTATIONS:
Practice and receive feedback for final oral presentations (in groups)

Week 9 (Mar 10): STUDENT PRACTICE PRESENTATIONS continued:
Practice and receive feedback for final oral presentations (in groups)
Reflection #4: Research reflections. Due in class via Avenue dropbox.
Week 10 (Mar 17): OPEN CONSULTATION ON RESEARCH PROGRESS:
Drop in hours for students to ask specific questions about their research

Week 11 (Mar 24): FINAL ORAL PRESENTATIONS: Symposium week

Week 12 (Mar 31): FINAL ORAL PRESENTATIONS: Symposium week
WRITTEN THESIS: Due: Wednesday, April 2, 2014, 16:30 pm.
Submit your final written thesis to your supervisor, and a pdf version to Course Administrator for archiving.
Marks & comments due to Administrator: NO LATER than noon (12:00 p.m.), Thursday, April 17.

DATA COLLECTION & ANALYSIS: Marks & comments due to Administrator: No later than noon (12:00pm), Thursday, April 17.

SUBMISSION OF FINAL GRADES: Monday April 21, 2014
The Course Coordinator & Administrator will be responsible for the compilation of marks accumulated by all students registered in the course, and for submission of the grade sheet.

**Pass-fail criteria**

Passing ISCI 4A12 requires passing (i.e. grade of 50% or higher) **BOTH the Thesis AND Seminar** components.
Absences

Absence from iConS, Tutorials or Workshops: If you are absent from any scheduled ISCI 4A12 session, it is your responsibility to make up missed work. If you are absent from a scheduled session that has an associated piece of assessment (e.g. reflection exercise, presentation) without authorization your mark will be recorded as 0 (see Procedure for authorized absence, below).

Absence from Invited Speaker Seminars: Unless approval for missing an Invited Speaker Seminar is obtained (see Procedure for authorized absence, below) your project mark associated with the Invited Speaker Seminar could be reduced by 20%. Attendance will be taken at all Invited Speaker Seminars.

Procedure for authorized absence:

If you are absent from the university for a minor medical reason, lasting fewer than 5 days, you may report your absence, once per term, without documentation, using the McMaster Student Absence Form. Absences for a longer duration or for other reasons must be reported to your Faculty office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to Sarah Robinson via sjrobin@mcmaster.ca. You must then contact the Course Coordinator immediately (normally within 2 working days) by email. Please refer to the contact list on the first page of this outline for appropriate email addresses. Your Course Coordinator will indicate what relief may be granted for the work you have missed, and relevant details such as revised deadlines, or time and location of a make-up assignment. Please note that the MSAF may not be used for final thesis deliverables.

Missed deadlines

Any late submissions will result in a penalty of 20% per day unless faculty is notified of any problems well in advance.

Missed assessment activities

Assessment activities missed for reasons of unauthorized absence will be graded 0%. Authorized absence will result in rescheduling or compensation from other assessment activities.

Checking Your Grades

You will have one week from the date that an assignment is returned to you to appeal your mark. If you wish to appeal a grade, you must submit to the Course Coordinator a written note justifying why you wish to have the assignment remarked, with the assignment attached. If your Course Coordinator considers the written justification to be insufficient (e.g. simply wanting a higher grade is insufficient), the assignment will not be re-graded. If the justification is considered sufficient, the entire assignment will be re-graded. You must therefore understand that your mark can increase or decrease.

Your marks will be recorded on Avenue. It is your responsibility to check that all grades entered into Avenue are recorded properly. You must notify your Course Coordinator about any errors with regards to how your mark was entered. You have until 48 hours prior to the end of term to discuss any Avenue mark issues.
Student Conduct
You acknowledge that your behaviour in all aspects of this course should meet the standards of the McMaster University Student Code of Conduct. You understand that any inappropriate behaviour directed against any of your colleagues, or the instructional team will not be tolerated. Disruptive behaviour during any iSci session such as talking, sleeping or non-iSci computing while an individual presents information, or constantly being late, will also not be tolerated. Abuse, ridicule, slander, inappropriate language, and discrimination towards instructors, teaching staff, teaching assistants and other students will not be tolerated in any capacity. Shared spaces such as iStudy are to be considered inclusive and safe.

Student Responsibilities
The level of student participation in this course is much higher than traditionally-taught courses. To get the most out of the course, you must be prepared to:

- attend all sessions, make up all missed work for all absences, and provide documentation for authorized absences;
- interact frequently with your thesis supervisor, Course Coordinator and Administrator;
- plan and manage your own time;
- complete preparatory tasks (such as reading, writing assignments, and initial research) in advance of sessions;
- develop and use reflective learning skills (for example identifying learning objectives, planning and carrying out research tasks, acting on academic feedback);
- work as an effective, efficient, and responsive member of the ISCI4A12 class;
- check the course Avenue site and your McMaster e-mail daily for updates;
- review, understand and abide by the ISCI 4A12 Student Responsibilities Contract; and
- follow all university policies and guidelines, and in all ways be a responsible university member.

Communication between students and faculty
Any e-mails addressed to faculty or staff must have a brief, relevant subject line, must include your student number, must come from a mcmaster.ca e-mail account or via Avenue, and must copy in all relevant parties (e.g. other markers, other group members). We suggest you put your student number in your e-mail signature. All e-mail communication addressed to students will be sent to their mcmaster.ca e-mail account or via Avenue.

All assignments must be handed in via Avenue, in the specified file format (usually pdf). Author(s) name and student numbers must be clearly marked on the first page of the work handed in.

Work that is late, handed in to the wrong person, inadequately identified, or in the wrong format, risks losing marks. Faculty will endeavour to return marks within two weeks of hand-in.

Senate Student Policies
You should note the Senate’s Student Policies (http://www.mcmaster.ca/policy/student.htm). Senate Policy Statements are also available from the Senate Secretariat Office, Room 104, Gilmour Hall.

In particular you should read the Academic Integrity Policy, specifically Appendix 3: http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty.

The following illustrate only four of many forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained;
- copying or using unauthorized aids in laboratory exercises
- improper collaboration in group work; and
- copying or using unauthorized aids tests and examinations.

All students are reminded of the importance of academic integrity, and the serious consequences of academic dishonesty.

Copyright Policy

In this course you will have access to material that is subject to copyright laws. This includes (but is not limited to) textbooks and all resources developed by the instructors such as lab manuals, demonstration videos, quizzes, assignments, tests, class notes and class slides. Under no circumstance are you allowed to share or redistribute this material in any printed or electronic form without the explicit written consent of the copyright holder. This includes posting any course material on Internet bulletin boards, course repositories, social networks, etc.

The instructors and the university reserve the right to alter this outline if necessary.

The instructors and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.