ISCI 3A12 Course Outline 2013/14

Description and objectives
ISCI 3A12 is a 12 credit course open only to students registered in the Integrated Science program.

The course aims to

- provide you with a wide-ranging background of core concepts in a variety of scientific areas;
- illustrate the interconnectedness of the scientific disciplines, drawing on the research projects;
- equip you with a wide range of scientific, problem-solving, critical thinking, and collaborative skills;
- nurture a creative, student-oriented, distinctive learning environment in which you can further develop your academic identities, scientific interests, and research skills within our community of students, staff, and faculty.

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

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

Instructors

<table>
<thead>
<tr>
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Timetable
You must be prepared to be present at all of the times indicated for iSci classes, including iConS, workshops, invited speaker seminars & tutorials.

The weekly course timetable will be posted on Avenue. **The course calendar on Avenue will supersede all other calendars including MUGSI.** Any schedule changes will be announced on Avenue.

*Check the Avenue course site daily.*

There will be up to twelve hours of supervised time per week (not including field trips and exams). Attendance is mandatory for all supervised time. The course will be broken up into three group research projects and an independent research project.

Syllabus

**General Skills**
Throughout the course, you will be developing a range of skills including: research skills, team work, leadership, communication skills, information literacy, experimental design, critical thinking, data analysis, numeracy, and math literacy.

**Wine Science**
This project will introduce students to the winemaking process and give students a *taste* of a Canadian industry that is dependent on the integration of many areas of science. Project teams can pursue topics ranging from viticulture, to the processes involved in making wine, oenology, and the health or financial impacts of wine and the industry. The project will include fieldtrips, workshops, invited speaker seminars and creation of a print scientific review magazine.

**Light, the Universe, and Everything**
This project will give students the opportunity to investigate topics from astronomy, astrophysics, cosmology, and astrobiology. The project will also include creation of seminars, giving students the opportunity to develop some teaching skills.

**Climate Change**
This project will provide students with an opportunity to learn about issues relevant to current debates regarding climate change, its causes, past occurrence, and potential future impacts. The project will include seminar presentations, panel discussions, and the creation of a podcast to inform a non-specialist student audience about scientific issues related to climate change. An optional fieldtrip to the Turkey Point Climate Research Station may also be offered (weather permitting).

**Science Literacy**
Students will choose a variety of SciLit activities to count towards their SciLit component, including drafting project work, participating in the Synthesis Symposium, and blogging.
Independent Project

The purpose of the 3A12 Independent Project (IP) is to allow students to experience an independent research opportunity. This project will occur over the first eight weeks of Term 2, leading to the iSci Symposium. This project will expose students to the challenges and rewards of independent research associated with idea development and literature review, as well as the communication of research significance and societal relevance. Students will be expected to submit a research proposal in late November identifying the topic and scope of the proposed research, support/facilities required to conduct the research and the name and agreement of a potential consultant.

Textbooks and equipment

The following items can all be purchased at Titles Bookstore on campus.

**Wine Science** (recommended)

**Wine Science** (required)
Jackson, R.S. *Wine Science: Principles and Applications*. Elsevier Inc. ISBN: 9780123736468

**Light, the Universe, and Everything** (recommended)

**Climate Change**
No text required

**Independent Project**
No text required

**iClicker** (required) Electronic audience response system

**Lab coat and safety goggles** (required)

**Calculator** (required) Casio fx-991 MS Plus ONLY
Assessment

ISCI 3A12 will be assessed across three group research projects as well as an independent research project. You will also be in science literacy.

Research Project assessments may include workshops, preparatory tasks, and general “homework” and quizzes. It may also include individual and group reports, posters or presentations. Deliverables specific to each project will be clearly outlined in the Research Project Pack that will be made available to you before the beginning of the project.

Research Projects will contain varied assessed deliverables that demonstrate not only scientific skills, but also additional research, collaborative authorship, project management, peer review, and communication skills. There will be a mixture of group and individual assignments.

This course is worth 12 credits. The table below shows how the ISCI 3A12 course mark will be assembled.

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<th>COMPONENT</th>
<th>ACTIVITY</th>
<th>TOTAL</th>
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<tr>
<td></td>
<td>Continuous</td>
<td>Projects</td>
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<tr>
<td>Wine Science</td>
<td></td>
<td>45</td>
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<tr>
<td>Light, the Universe, and Everything</td>
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<tr>
<td>Climate Change</td>
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<tr>
<td>Independent Project</td>
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<td>45</td>
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<tr>
<td>Science Literacy</td>
<td>20</td>
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<tr>
<td>TOTAL</td>
<td>200</td>
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Pass-fail criteria

Passing ISCI 3A12 requires passing (i.e. grade of 50% or higher) All of the five component parts. Pass criteria for each component can be found in the component outline or project pack.

There may be opportunities to make up project topic content over the summer. It will be left to the discretion of the instructor to determine the content that needs to be made up.
Absences

Absence from iConS, Tutorials or Workshops: If you are absent from any scheduled ISCI 3A12 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. test, quiz, presentation, etc) 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 component lead 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 component lead 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 exam/quiz/test. Please note that the MSAF may not be used for final project deliverables, nor can it be used for a final examination or its equivalent.

Missed deadlines

Any late submissions will result in a penalty of 20% per day unless faculty is notified of any problems well in advance. This holds for both group and individual assignments.

Missed exams and other assessment activities

Exams or other assessment activities missed for reasons of unauthorized absence will be graded 0%. Authorized absence will result in rescheduled exams or compensation from other assessment activities.
Checking Your Grades
You will have one week from the date that an assignment (or test or mid-term exam) is returned to you to appeal your mark. If you wish to appeal a grade, you must submit to the component lead (or laboratory coordinator for labs) a written note justifying why you wish to have the assignment remarked, with the assignment attached. If your component lead or laboratory 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 component leaders and laboratory 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, teaching assistants, or the instructional team will not be tolerated. Disruptive behaviour during any iSci session (e.g. iConS, Invited Speaker Seminars, labs, tutorials) 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 faculty, students, TAs, and other support staff;
• 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 team member on group assignments;
• check the course Avenue site and your McMaster e-mail daily for updates;
• review, understand and abide by the ISCI 3A12 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) names, student numbers, and group designations if applicable, 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.