Life Sciences 2AA3
Introduction to Topics in Life Sciences

Note: This is a tentative outline as of September 2017.
Modifications to module order/content may vary slightly.

LEAD INSTRUCTOR:
Kimberley Dej, Ph.D., dej@mcmaster.ca

GUEST INSTRUCTORS:
various

INSTRUCTIONAL ASSISTANT:
Sajeni Mahalingam, Ph.D.

COURSE DESCRIPTION:
This course is an opportunity to explore contemporary fields of research in the Life Sciences and the application of this research to questions about human health and well-being. Our topics will stem from the Millennium Development Goals. Your exploration of these fields will occur through a series of lectures including some from McMaster researchers conducting basic and applied research relevant to these fields. In listening to these lectures, we will hear how basic research has been translated to real-world challenges. The tutorials will be an opportunity to work with upper-year mentors to develop diverse skills in scientific communication including presentations, essays, data reports, and discussions.

This course was developed in collaboration with students in the Life Sciences program. Their hope is that this course offers students exposure to a unique experience that will broaden student learning in the Life Sciences. Students will have the opportunity to view contemporary topics from multiple diverse perspectives, which will enhance critical thinking skills, expand knowledge, and develop an open-minded and collaborative approach to learning. The eclectic approach of this course will allow students to draw upon ideas from multiple areas of study, helping them gain complementary insights into a field of study.

COURSE AIMS:
• Students will be introduced to interdisciplinary perspectives on current topics in Life Sciences
• Students will practice and develop foundational or ‘soft’ skills including communication, collaboration, and presentation.
• Students will engage in diverse forms of communication including written and oral communication to diverse audiences.
• Students will receive formative feedback to allow for foundational skill development.
• Students will practice and develop technical or ‘hard’ skills including data analysis and interpretation, knowledge translation, research design, and critical thinking.
• Students will prepare a proposal for a research or community engagement project that applies to a specific topic from the Millennium Development Goals.
• Students will be introduced to different careers through alumni guest speakers.
• Students will engage in critical and reflective practices as part of their learning.

LEARNING OUTCOMES:
• Students will have a program plan that is founded on the academic mandate of the Life Sciences Program.
• Students will outline short and long-term goals that are part of their program plan.
• Students will have developed their foundational and technical skills.
• Students will have an awareness of the relevance of basic research to human health issues in their local and global communities.
ONLINE CONTENT:
This course uses Avenue to Learn to post the course outline, assignments, and other notices. Go to http://avenue.mcmaster.ca to find out how to log-on to the course’s platform.

TEXTBOOK:
There is no required textbook for this course. Required readings will be provided for each module. In addition, for many lectures there will be an online learning expectation that includes readings, videos, and short tutorials. You will also be asked to read primary research articles on module topics for individual and group assignments.

EVALUATION:
- There are two group projects that will occur in the tutorials: Data Analysis Project (DAP) and Knowledge Translation Project (KTP).
- Working in groups of four, you will maintain a collaborative electronic notebook in which you will share work, ideas, drafts, and final assignments.
- You have a responsibility to your group to attend all tutorials, develop a project plan, and stick to the plan.
- There are four individual written assignments: two critical review papers and two research application papers.
- There is a single individual science literacy assignment.
- There is a final test on course content in class.
- Participation in lectures and tutorials is expected. Lecture participation will be evaluated in the form of end of lecture quizzes.
- Reflections and your ePortfolio are important parts of this course

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<thead>
<tr>
<th>Assignment Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Critical reviews (individual; 5%, 7%)</td>
<td>Total = 12%</td>
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<tr>
<td>Research Application papers (individual; 5%, 7%)</td>
<td>Total = 12%</td>
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<tr>
<td>Science literacy Assignment (individual)</td>
<td>Total = 10%</td>
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<tr>
<td>End of term Test (individual)</td>
<td>Total = 10%</td>
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<tr>
<td>Data analysis project (Group; weeks 2 through 6)</td>
<td>Total = 18%</td>
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<td>(4 stages, 2%, 4%, 4%, and 8%)</td>
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<tr>
<td>Knowledge translation project (Group; weeks 7 through 11)</td>
<td>Total = 30%</td>
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<tr>
<td>Annotated bibliography (10%)</td>
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<tr>
<td>Final report and recommendation (10%)</td>
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<tr>
<td>Presentation (10%)</td>
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<tr>
<td>Reflections and EPortfolio (individual; foundational skills)</td>
<td>Total = 5%</td>
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<tr>
<td>Participation in lectures through classroom response questions (individual in lecture on material in the same lecture)</td>
<td>Total = 3%</td>
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<tr>
<td>Course total</td>
<td>100%</td>
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COURSE OVERVIEW AND ASSESSMENT

• Lectures are a combination of:
  o Modules on research related to the UN Millennium Development Goals. Lecture will be introduced by Dr. Kim Dej with guest lecturers sharing their research and how the research might be translated to address real-world challenges.
  o Science Literacy components will provide the tools to develop your skills in research methods and science communication. These lectures are led by Abeer Siddique, Science Librarian.
  o Lectures on translational skills will include project management, goal setting, personal development, and approaches to learning.

• Lectures occur Monday and Wednesday afternoons and most are associated with an in-class participation quiz that will be completed online or on paper.

• Each week there will be an independent learning expectation that includes assigned reading, a video, or a short online tutorial. The time estimate for this is 1 hour, equivalent to a lecture.

• Critical reviews and research application papers are based upon the research modules.

Modules include a focus on the following UN Millennium Development Goals (MDGs):

1. Eradicate extreme hunger. Access to food is a complex social, economic, and geographic issue. Research in food sciences can seek to explore increased efficiencies in food production and increased nutritional value in food.

4. What is the impact of maternal health on the health of children? What are the greatest risks to child mortality? Basic research can be translated to effect change in public and global health policies that impact societal health.

5. Ecosystem health and human health are inextricably linked. What are the key targets in environmental sustainability that impact human health and well-being globally?

6. What are the most-lethal vector-borne diseases and how can research on the vectors, the pathogens, and the impact of disease on human physiology help us to proactively stop disease spread?

For a full list of UN MDGs see: http://www.un.org/millenniumgoals/

SCHEDULE AND DUE DATES

The full course schedule is posted separately on Avenue to Learn.

At certain points in the course it may make good sense to modify the schedule and deadlines outlined below. The instructor reserves the right to modify elements of the course and will notify students accordingly (in class and labs, and post any changes to Avenue).
POLICY ON MISSED WORK, EXTENSIONS AND LATE PENALTIES:

We recognize that the use and reliance on the MSAF by students is closely tied with both stress and time management. With that in mind, we have developed a more flexible grading scheme to help you plan and manage both stress and time. This reflects our commitment to Universal Instructional Design Principles as well as McMaster’s Forward with FLEXibility, which ‘aims to enhance accessibility and to equitably meet the learning needs of a diverse student body’.

**Participation quizzes**
Quizzes are completed individually on Avenue to Learn or on paper at the end of lectures. If you miss a quiz, there is no opportunity to make it up. You are expected to exhibit academic integrity in completing this quiz in the lecture room and not before or after the lecture.

The lecture quizzes will contribute to a final grade of 3%. Two quiz grades will be dropped including two missed quizzes.

**Electronic collaborative notebooks (ECNs)**
ECNs are completed in your group’s shared Google Drive, which is shared with your TA and Peer Mentor(s) at the beginning of term. Updates to your ECN will occur in real time on Google Drive (Docs/Sheets/Slides).

It is generally expected that you will have sufficient time in tutorial to finish group assignments and updates, but these notebooks are for your work and you may decide to complete certain tasks after tutorial. Make sure that everyone in the group knows the expectations for completing tasks before leaving the tutorial.

**Assignments**
Assignments are submitted as a single PDF by one member of your group to your ‘Group Assignment Folder’ on Avenue. This includes weekly milestone assignments and final evaluations.

Group assignments can be submitted up to 48 hours after the due date (your tutorial) with no late penalty applied and no MSAF required. Group assignments not submitted within 48 hours of the due date will receive a grade of zero. Assignments submitted late may not receive feedback in time for the next phase of the project. MSAFs are not required or accepted for the group assignments, and we will not provide additional accommodation for assignments beyond the 48-hour grace period.

**Missed Tutorials**
Attendance at all tutorials is mandatory. If you miss a tutorial, you are accountable to your group. At the beginning of the year, you and your group will complete a group contract that outlines how your group will organize itself, work, communicate and deal with issues such as absences of group members. If you are away for a week and can’t contribute to the group assignment or ECN, you are responsible for following up with your group and determining how you will make up for the missed contributions. There will also be peer evaluations for assignments and weekly group updates and a negative evaluation, including missing group work, could result in a lower grade on the assignments compared to other members in your group.

When deciding on your group’s approach for distributing workloads and completing the assignments, be aware that all of the assignment material and associate skills are considered testable for tests and individual assignments.

**Individual Assignments: Critical Review (CR) papers, Research Application (RA) papers, and the Science Literacy assignment**

Assignments submitted by the due date will receive both feedback and a grade. You may submit your lab report up to 3 days late with no late penalty applied and no MSAF required. If you submit during the 3-day grace period, you will receive a grade, but there will be no feedback provided by the TAs. Lab
reports not submitted within 3 days of the due date will receive a grade of zero. MSAFS are not accepted or required for these assignments, and we will not provide additional accommodations beyond the 3-day grace period.

**Lecture Test**
If you miss the lecture test, you must submit an MSAF and contact the Instructional Assistant. You will be required to complete a makeup test in the last week of class. The test may be of a different format form the original test e.g. a short answer or oral test in place of the original multiple-choice test. Please see ‘REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK’ for details.

**Reflections and E-portfolio**
Reflections are completed individually on your PebblePad ePortfolio and shared with your TA and Peer Mentor(s). Details on sharing the ePortfolio will be provided.

Portfolios shared by the due date will receive both feedback and a grade. You may submit your reflection up to 3 days late with no late penalty applied and no MSAF required. If you submit during the 3-day grace period, you will receive a grade but there will be no feedback provided by the TAs. MSAFS are not accepted or required for the reflections, and we will not provide additional accommodations beyond the 3-day grace period.

**REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK:**
If you are absent from the university for a minor medical reason, lasting fewer than 3 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/Program office, with documentation, and relief from term work may not necessarily be granted.

When using the MSAF, enter the Instructional Assistant and email (LS2AA3@mcmaster.ca) as the contact for the course. Refer to ‘LifeSci 2AA3 Flexible Grading and MSAF Policy’ in the course syllabus to learn what the accommodation is for missed course work, and whether an MSAF is required or accepted. Most course work already has an accommodation provided that does not require the submission of an MSAF. In those cases, additional accommodation will not be granted, even with the submission of an MSAF.
If the missed work (e.g. test) requires the submission of an MSAF, you must contact the Instructional Assistant immediately after the MSAF is submitted.

**ADDITIONAL STATEMENTS**

**ACADEMIC INTEGRITY**
You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results, or could result in unearned academic credit or advantage. This behaviour 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. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at http://www.mcmaster.ca/academicintegrity

The following illustrates some 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.
Improper collaboration in group work. While we encourage you to work with your peers in solving
problems on your assignments, copying of answers is not acceptable. Your final work must be your own.
Copying or using unauthorized aids in tests and examinations.
Submission of work previously submitted to another course.

Use of Turnitin.com
In this course we may be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.

ACADEMIC ACCOMMODATIONS OF STUDENTS WITH DISABILITIES
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator (Instructor or Instructional Assistant). Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities.

GRADES
Grades obtained in Life Science 3L03 will be converted according to the scheme generally used at McMaster University which can be viewed here: http://registrar.mcmaster.ca/exams/grades/
When the final marks are obtained, ALL borderline cases will be reviewed and, where warranted, adjustments will be made in the final mark.