The U of T campus as a living lab of sustainability

Syllabus
Fall 2019

Instructor:
John Robinson
Room 258, South Building
1 Devonshire Place
Johnb.robinson@utoronto.ca

Overview:
Sustainability is a growing priority for universities all over the world. Many are developing strong operational sustainability goals and targets, and are giving increasing emphasis to teaching and research on sustainability issues. Yet few have committed at the executive level to integrating academic and operational sustainability in the context of treating their campus as a living laboratory of sustainable practice, research and teaching. Such living lab approaches offer a large potential for universities to play a significant role in the sustainability transition. This course will explore and apply the living lab concept, in the context of operational sustainability at the University of Toronto. We will begin by looking briefly at the literature on university sustainability and the living lab concept. The bulk of the course will involve undertaking an applied research project on some aspect of campus sustainability, working in close partnership with operational staff at the University of Toronto. Students will develop the skills needed to work across disciplines and fields of study, and with non-academic partners.

Course details and Requirements:
Fall term, Tuesdays 2 – 4 PM
Location: OIL170
Instructor: Professor J. Robinson (johnb.robinson@utoronto.ca)
Teaching Assistant: Anjali Helferty
Contact information: Email is the best way to reach me. I do not have specific office hours but will schedule individual and group meetings, in addition to the scheduled class time, upon request.

Organization:
This course will put students to work on operational sustainability projects identified by U of T staff working in or with the Sustainability Office at the University of Toronto. Students will be organized into groups, each of which will be assigned one project, to be overseen by one or more U of T staff members. The bulk of the course will consist of regular meetings with the staff “clients”, with instructors, and in small groups to
undertake a group project. Each group will produce a mid-term and final report, and give a mid-term and final presentation. Each student will also submit two 360 reviews of the group process. Grad students in the course will have one additional assignment to produce an annotated bibliography, as described in more detail below.

The first two weeks of the course will be devoted to providing background on the concept of university as a living lab of sustainability, providing instruction on group process, and meeting with U of T staff to choose group project topics.

In week 1 (Sept 10), there will be a lecture on campus as a living lab (CLL) and the role of the university. A list of proposed projects will be introduced and distributed. Students will choose their preferred topics for the group project before the next class.

In week 2 (Sept 17), students be divided into groups and assigned to specific projects. They will meet with their staff “clients” and each group will make arrangements for regular meetings with them. Much of the class that day will consist of a presentation on, and discussion of, how to work effectively as a group, and with an external “client”.

Subsequent weeks will have occasional lectures, but will primarily consist of regular meetings with assigned staff and weekly check-ins with course instructors. Each group will be expected to meet periodically with their “client”. These meetings will occur during class time or outside class at a time and place to be arranged with the client. Whether client meetings are in class time or not, each group will also meet as a group during class time. The instructor and TA will be available at those times and each group will be meet with one or both of them each week during class time, to check-in on progress on their project.

Each student group will submit a problem statement on Oct 1, give a presentation and submit a short paper on preliminary findings on Oct 29, give a final presentation on or around Dec 3 (depending on scheduling with the client), and submit a final paper by Dec 6. Each student will also submit 360 reviews of the relative contributions of the other members of their group, the first on Oct 22 and the second on Dec 6.

A critical aspect of this course is the ability of students to work collaboratively together in a group environment, and to work effectively with a university staff person acting as a “client” for their work. Students will be provided with a Handbook outlining information on working in groups and the focus of the class in the second week will be on this issue. The first 360 peer review will serve to provide information on how well each group is working. Students are encouraged to discuss and resolve group process issues in the weekly group meetings, and in their regular meetings with the instructor and TA. The second 360 review will occur at the end of the term. The results of the second 360 review will be used, as appropriate, to adjust individual marks from the group averages.

Learning Objectives:

• Learn to identify a sustainability problem of practical import to the university
• Learn to develop and articulate a realistic workplan to address that problem
• Learn to work effectively with other members of a group to fulfil that workplan
• Learn to work effectively with a “client” from the organization
• Contribute in a concrete way to the university’s actions to improve sustainability
• Learn about the role of the university in achieving operational sustainability
- Develop an understanding of the campus as living lab approach to university sustainability, its potential and limitations
- Develop substantive knowledge in one area of operational sustainability at the university

**Confidentiality**
You will be working on real issues for U of T staff. Although the information you are likely to research and analyze is not secret, it may certainly be sensitive in nature and you may be given access to internal or proprietary information. You are to maintain confidentiality in all the work that you do on behalf of your client. Outside of class, you may comment generically that you are working on a project for a given organization. However, you should not discuss, tweet, Facebook, reference in LinkedIn or otherwise publicize the content of your work until you have been fully debriefed by your client on his/her preferences on the subject and receive that acknowledgement in writing via email. **Breeching the confidence of the client will result in an academic sanction.**

**Assignments:**

**Undergraduate Student Assignments**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Due Date</th>
<th>Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group problem statement</td>
<td>Oct 1</td>
<td>10%</td>
</tr>
<tr>
<td>Initial 360 peer review</td>
<td>Oct 22</td>
<td>5%</td>
</tr>
<tr>
<td>Mid-term group presentations</td>
<td>Oct 29</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-term group report</td>
<td>Oct 29</td>
<td>10%</td>
</tr>
<tr>
<td>Final group presentation to client</td>
<td>Dec 3*</td>
<td>20%</td>
</tr>
<tr>
<td>Final 360 review</td>
<td>Dec 6</td>
<td>5%</td>
</tr>
<tr>
<td>Final paper</td>
<td>Dec 6</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Graduate Student Assignments**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Due Date</th>
<th>Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group problem statement</td>
<td>Oct 1</td>
<td>10%</td>
</tr>
<tr>
<td>Annotated Bibliography</td>
<td>Oct 22</td>
<td>20%</td>
</tr>
<tr>
<td>Initial 360 peer review</td>
<td>Oct 22</td>
<td>5%</td>
</tr>
<tr>
<td>Mid-term group presentations</td>
<td>Oct 29</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-term group report</td>
<td>Oct 29</td>
<td>10%</td>
</tr>
<tr>
<td>Final group presentation to client</td>
<td>Dec 3*</td>
<td>10%</td>
</tr>
<tr>
<td>Final 360 review</td>
<td>Dec 6</td>
<td>5%</td>
</tr>
<tr>
<td>Final paper</td>
<td>Dec 6</td>
<td>30%</td>
</tr>
</tbody>
</table>

* The actual date of the presentations will depend on client availability.

**Group Problem Statement**
Your first task upon meeting with your assigned U of T staff “client”, is to agree on a specific project topic and the question that will be addressed by the group. It is extremely important to articulate this early so that the group knows exactly what is required. You will submit a description of the topic area and the specific question, in the form of a problem statement, on Oct 1.

The problem statement should be short (1 page) and should:
- Describe the general topic area (e.g. monitoring GHG emission on campus)
- Specify the objectives of the project (i.e. the research questions to be answered)
Outline the method(s) to be followed
Describe the expected deliverables

Mid Term Presentation and 1-2 page Written Memo
In the 10-minute mid-term presentation and written 1-2 page memo, both due on Oct 29, students are expected to provide:

- A brief description of the topic-area and main concerns of the client who has commissioned the consulting assignment
- A description of the overall goals and specific objectives of the work
- A description of the methodology your team has chosen, and reasons for this choice
- A description of the data or information you are collecting
- Initial findings and conclusions
- A description of major analytical questions that still need to be answered
- A description of any unforeseen issues you have encountered in your relationship with the client, and your strategy to deal with these.

Final Deliverable and Final Presentation
The final presentation to the client will take place toward the end of term 1, and occur at a time scheduled with the client. The presentations may be grouped into several sessions, or occur individually with the client. The presentations will occur around Dec 3 and the final report (max 6000 words) will be submitted by Dec 6, giving you some time to incorporate feedback you receive at the presentation.

These reports and presentations will include:

- A brief description of the topic area, scope and objectives of the project
- A description of the methodology you employed
- Main findings from your research and analysis
- Recommendations

Note that all assignments are group projects, so learning how to work effectively with other members of your group is a critical requirement for successful completion of the assignments. Please consult the course Handbook for more information on effective group work.

Additional Grad student assignment
Prepare an annotated bibliography, consisting of 10-20 references (20-30 if you have multiple grads students in the group and are completing the assignment together) that speak to the current state of the literature on your project topic. There are sets of literature around each of the project topics-areas. If you consult relevant journals you will be able to see who is writing around them (and most likely citing each other - so it’s a good idea to look at reference lists). There should be one well-written paragraph for each of the references, in which you identify the key findings related to your class project. This assignment is due on Oct 22, although we suggest you get started on it sooner since it will be helpful in situating and designing your project. We expect that your group will include a minimum of 5 sources from the literature in the context section of your final report, which are likely to be from your annotated bibliography.

A note on professionalism:
Whether in draft or final form, work plans, interim reports and presentations that are distributed to the professor and client are expected to be of professional quality. This includes an expectation of superior intellectual ideas, writing, formatting and presentation of products. Remember that an important aspect of successful interactions includes the way in which you prepare, rehearse your material, look and sound when you communicate with clients and staff in their organizations. Please note that client satisfaction throughout the term will inform their interactions with you.

360 Peer Reviews
The first peer review will be used to determine if there are issues in your group that need to be addressed. The second peer review may be used to adjust the individual marks on group projects. They are due on Oct 22 and Dec 6. The group projects will each be assigned a single grade. If the second peer review provides strong evidence of better than average, or worse than average, performance by a member of the group, then the grade of that individual for that group project may be adjusted up or down by 5%.

Important Term Work Policies:
All assignments are due on the due dates stipulated above. Because these are group projects, requests for extensions necessarily impact everyone in the group. In addition, it is critical to meet deadlines for clients. As a result, requests for late submission of the assignments will require compelling reasons and must work for everyone in the group.

There can be no exceptions to the deadlines for the group presentations.

All written assignments should be submitted by email to Professor Robinson (as Word or PDF files). No hard copies are required, and assignments will be returned by email.

Readings:
There exists a rich literature on various forms of applied problem-based learning in the sustainability arena. For a good list, see the References and Recommended Reading section of:


That paper is also a leading edge example of such work.

There exists an overlapping literature on the idea of university-community partnerships on developing “living labs” of sustainability. For a recent discussion of this idea, see


The various chapters of that book report on living lab activities in ten universities in Europe, North America and Asia.

Much of this literature describes living lab activities that are focussed university-city partnerships that address sustainability problems in the world outside the university. Less attention has been paid to seeing
the physical campus of the university itself as a living lab of sustainability. This is the approach that has been taken at The University of British Columbia (UBC). This version of a living lab is described in:


Finally, the Environmental Association of Universities and Colleges in the UK has developed a national living labs program for UK universities. They have three reports on living labs, which can be found here: [http://www.eauc.org.uk/eauc_living_labs_project](http://www.eauc.org.uk/eauc_living_labs_project).

The three readings listed above will be made available, and students are asked to read them, and look over the three EAUC reports, to familiarize themselves with the context within which the work undertaken in this course takes place. However, the specific knowledge needed for the group projects themselves will be supplied by the client or determined by you as the project is articulated.

**Academic Integrity:**

The University of Toronto treats cases of academic misconduct very seriously. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that your UofT degree is valued and respected as a true signifier of your individual academic achievement.

The University of Toronto’s *Code of Behaviour on Academic Matters* outlines the behaviours that constitute academic misconduct, the processes for addressing academic offences, and the penalties that may be imposed. You are expected to be familiar with the contents of this document. Potential offences include, but are not limited to:

**In papers and assignments:**
- Using someone else’s ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the Professor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment (this includes working in groups on assignments that are supposed to be individual work).

**On tests and exams (not applicable for this course):**
- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else’s answers.
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

**Misrepresentation:**
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor’s notes.
- Falsifying institutional documents or grades.
- Signing attendance reports on behalf of other students.
Any instance of suspected academic dishonesty will be reported to the appropriate University authorities. For further information on “How Not to Plagiarize”, you might find Margaret Proctor’s guide helpful – click “Using sources” in the advice link: http://www.writing.utoronto.ca/advice

Accessibility Needs:
The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: http://studentlife.utoronto.ca/accessibility.

Course Schedule:
Sept 10 – Introduction; distribute topics; lecture on campus as living lab and the role of the university
Sept 17 – choose topics; session on group process; meet with clients
Sept 24 – meet in groups during class time; meet clients separately
Oct 1 – meet in groups during class time; meet clients separately; problem statement due
Oct 8 – meet in groups during class time; meet clients separately
Oct 15 – meet in groups during class time; meet clients separately
Oct 22 – meet in groups during class time; meet clients separately; first 360 review due
Oct 29 – mid-term presentations; mid-term reports due
Nov 5 – Fall Break
Nov 12 – meet in groups during class time; meet clients separately
Nov 19 – meet in groups during class time; meet clients separately
Nov 26 – meet in groups during class time; meet clients separately
Dec 3 – final presentations sometime this week
Dec 6 - second 360 review due
Dec 6 – final report due