SUSTAIN 2S03 – Evaluating Problems and Sustainable Solutions

Fall 2019

Lectures: Monday 7:00pm - 10:00pm

Lecture Room: TBA

Instructor: Peter Topalovic (topalopj@mcmaster.ca)

Office Hours: Mondays by appointment

Office: Lecture Room

COURSE OVERVIEW

Students will learn how to identify problems and evaluate sustainable solutions to societal issues from an interdisciplinary perspective, with a focus on cities. The course provides opportunity for active experiential education and inquiry, which emphasizes individual actions on sustainability projects. It will also explore the importance of local decisions and actions and their impact on national and international approaches.

Important Notes:

Avenue to Learn: This course uses Avenue to Learn to post assignments, rubrics, readings, and other notices. It is important to visit Avenue to Learn regularly to be kept informed of any new information. Most course assignments will be submitted via Avenue to Learn. Go to website (http://avenue.mcmaster.ca/) to find out how to log-on to the course's home page.

Please note, this course requires an iClicker for class participation and attendance.

Information	Details	Location
Important Course News and Updates	Important updates, information about assignments, tutorials, and projects **Please check daily**	Avenue to Learn - News
Course Syllabus	Course Syllabus	Avenue to Learn > Content
Resources for Assignments	Assignment guides and rubrics	Avenue to Learn > Content > Resources for Assignments
Readings	Required readings	Avenue to Learn > Content > Readings
Interesting Community News and Events	Volunteer/job opportunities, events, surveys etc.	Available on via Instagram, Facebook, Twitter, and LinkedIn at "@macsustain"

COURSE STRUCTURE

SUSTAIN 2S03 is made up of readings, lectures, workshops, and tutorials.

- Readings are to be completed prior to each class.
- Lecture time will be used to help guide students through the readings and will expand upon key ideas by exploring case studies, current events, and by making connections to general course themes.

- Workshops will be held in place of lecture on three occasions. They will cover important issues faced by cities and involve professionals in the community who will interact with the class in a workshop format. Ideas from the class will be used to enhance community initiatives and/or solve a problem faced by the community.
- Tutorial time will be used to support student understanding and the practical application of course material from lectures and readings. Tutorial time will also be used to offer guidance and support for class assignments.

Course Learning Objectives

By the end of the course, students will be able to:

1. Understand the meanings underlying the sustainability theories presented through forming opinions on the course content
2. Retrieve relevant knowledge on general themes and major points from course content
3. Integrate knowledge from course content into personal experience through planning and implementing a personal lifestyle challenge
4. Apply course concepts and theories to create solutions that improve the sustainability of cities
5. Create meaning by generating connections between academic theory and action through reflection

Group Work

Throughout the course, students will be provided with a variety of opportunities for interdisciplinary discussion and group work. All group members will receive the same mark for group assignments. Part of this course is to provide students with the opportunity to develop their teamwork skills. If and when challenges arise, utilize the opportunity to employ strategies to better the group dynamics going forward. You are encouraged to seek support from the Teaching Assistants or Course Instructor.

In extreme circumstances, and once group members have attempted to address the situation as a team, they may approach the Course Instructor to proceed with further action. In such an instance, the group will be requested to submit documentation of the problem(s). After an initial warning, and if no significant improvement is made, the Course Instructor reserves the right to adjust any individual's assignment mark up to 50% of the group grade.

All group work submissions must indicate which group member contributed to which part of the assignment and/or include a pie chart depicting value of contributions put forth by each group member. Please include this throughout the document or at the end of the document (bullet points and/or percentages are sufficient).

Assignment and Reading Critique Submission Guidelines

All assignments and reading summaries should be submitted in Word doc. format via Avenue to Learn. See assignment-specific criteria for instructions.

Late assignments will be penalized 15% each day, including Saturday and Sunday, starting at 12:01 am the following day. A maximum of three days will be permitted for late assignments, after which the assignment will receive a grade of zero, unless specific arrangements have been made with the TA. Any arrangements for late submission must be made at least 24-hours before the assignment is due. In the case of extenuating circumstances, please contact and discuss with the TA or the Course Instructor.

MSAF Policy and Missed Classes

All MSAF's received by the professor will automatically extend the submission deadline by three calendar days. No other arrangements need to be made. Please ensure the instructor and your marking TA are included on the MSAF form to ensure it is properly recorded.

MSAFs are not required for course participation; instead, a student may miss 1 Lecture and 1 Tutorial without penalty, by notifying your tutorial TA. Missed workshops can be made up by submitting a bonus assignment. If a workshop is missed, the mark of the bonus assignment will go towards your missed workshop.

Required Readings:

There is no textbook or course pack for this class. Consistent with the goals of the Sustainable Future Program, all required readings can be found on Avenue to Learn.

COURSE EVALUATION

Please note that detailed guidelines and marking rubrics for each assignment can be found on Avenue to Learn.

Evaluation Breakdown

1. Lifestyle Challenge: 45% total
2. Attendance and Participation: 15%
3. Assignment and Opinion Responses: 40%

1. Lifestyle Challenge (45% total)

In line with the overall goals of the Sustainable Future Program, students will have the opportunity to take part in self-directed and experiential education related to their personal passions and interests in sustainability. In order to achieve these goals, students will undertake a personal lifestyle challenge that addresses some aspect of their life that relates to sustainability. Examples might include becoming a weekday vegan, taking an active mode of transportation to campus for an entire term, or reducing household waste by 50%. Students will set measurable goals and prepare a plan for accomplishing them. As part of the lifestyle challenge, students will prepare a project plan, a final presentation of the outcomes of their challenge, and and a personal reflection on their learning.

PART A: Project Plan: 15%

Students are to prepare a project plan addressing the eight questions below. Please use the subheadings provided to format your plan.

1. Purpose: In one sentence, outline the one purpose of your project, but completing the following sentence, "The purpose of my challenge is to…"
2. Learning Outcomes: What do you want to learn from your Lifestyle Challenge? Include 3-5 things you want to learn. These may include knowledge, skills, and/or abilities. These can be in point form.
3. Challenge Focus and Scope: Define the focus of your Lifestyle Challenge in line with your learning goals. Briefly describe the details and scope of your challenge. Include aspects that are both in and out of scope of your challenge. (Point form is fine. Aim for five in scope and five out of scope)
4. Project Relevance: Why is this challenge important for environmental, social, and economic sustainability? Provide an overview of the issues, which should include academic support for the claims you make. (Paragraph form with subheadings. 200-500 words)

5. SMART Goals: Please provide three SMART (Specific, Measurable, Attainable, Relevant, Time-based) goals that will help you succeed in your challenge. Please state each goal in temporal order including a breakdown of how each goal meets each of the five SMART goal components.
6. Process and Schedule: Describe your process for what you will do throughout your Lifestyle Challenge. Provide details of your Challenge, which should include at least two milestones for each SMART goal, a list of actions that will be required to achieve each milestone, and associated dates for each milestone and action. Complete the communication of your plan by creating a chart, calendar, or a bullet point list of each milestone and action, which will add clarity and guide you throughout your challenge. (200-500 words, not including the chart/calendar/list)
7. Measures of Success: Describe your measure of success for each SMART goal. Include a detailed description for how you will track, manage, and measure each goal. These can be in point form. Include a schedule and/or spreadsheet to track your progress.
8. Planning for Success: Consider what you will need to be successful. Describe what you will you do *before* beginning your challenge and what you will do *during* your challenge to ensure you are successful. Include any research/consultation you will need to perform, supplies you will need to gather, and/or any support groups you will need to form. Address at least two possible barriers and two possible opportunities you may face and how you will overcome/benefit from them. (500-1000 words)

References: 5 references minimum. Course lecture content, course readings, reports, blogs and media resources can be used. At least 2 reference must be from a peer-reviewed and academic source.

Due: TBA

Marked By: Tutorial TA

Rubric: See Avenue to Learn

PART B: Reflection Assignment: (20%)

Students are encouraged to utilize their own personal journal to reflect on their experiences and learning from their Lifestyle Challenge. Students are then encouraged to pull from these personal reflections to prepare a formal reflection of academic quality. Students are encouraged to reflect on their most significant learning, the challenges they faced, things that worked well, what they could have done differently, and the future of their lifestyle challenge. Each student will prepare their reflection papers, considering the following:

1. What has been your greatest learning from your Lifestyle Challenge? This may be related to one of your learning goals, your project plan, or even something you did not expect to learn initially.
2. What contributed to your learning and how did it happen?
3. What aspects of the course (readings, lectures, workshops etc.) supported your experiential learning? How can your experiences be better understood in relation to the course material, and vice versa?
4. How will you extend your learning going forward?

References: A minimum of three sources. At least two must be from course readings. One may be from lecture. Addition sources are encouraged, as appropriate.

Due: TBA

Word Limit: 2000 words max. Words beyond 2000 will not be considered.

Marked By: Tutorial TA

Rubric: See Avenue to Learn

PART C: Project Presentation: 10%

Students will prepare a 5-minute presentation of their lifestyle challenge. There will be time for one or two questions from the audience. The presentations can be in any format the student wishes. The presentations will be evaluated by the Tutorial TA.

Time Limit: 5 minutes max, 3 minutes for questions.

Due: Tutorials during the weeks of TBA

Marked By: Your tutorial TA

Rubric: See Avenue to Learn

2. Preparation, Attendance, and Participation (15%)

Preparation is key to success. Students are expected to attend each lecture and tutorial having completed all identified tasks, including homework assignments and readings.

Attendance will be taken during each class and tutorial. Students will need to bring their iClicker to get participation marks in class.

> *"80 percent of life is showing up" - Woody Allen*

Participation. Remember, "showing up" is more than physically being present. Students are expected to contribute during tutorial discussions and activities by providing meaningful contribution. Note that tutorials are designed to encourage participation through various means including one-on-one peer discussions, small group tasks, activities, and large class discussions.

Overview on how to receive an A+ on Preparation, Attendance, and Participation:

- ✓ *Come prepared to each tutorial with all readings, assignments, and tasks fully complete*
- ✓ *Attend and participate in all lectures and workshops*
- ✓ *Attend and participate in all tutorials*

The rubric will be discussed in class and tutorial.

The professor and TAs reserve the right to reduce participation marks when students are not paying attention in class, not participating and/or not doing work pertinent to the course on their laptops.

A physical iClicker or online iClicker is required for this course.

3. Assignments: 40% (Group Assignment and Reading Opinion Critique)

A. Group Assignment: National and City Focused Climate Change Analysis (25%)

Investigate one of the 195 countries that are signatories of the UN Framework on Climate Change (UNFCCC) and analyze that Country's targets, how they are currently performing (see IEA and OECD information on countries as a start), and your prediction on whether they will meet their established targets.

Choose one major city from that country and analyze the top three climate change threats they face and what adaptation strategies they can use to increase their resilience and regenerative capacity. The group should research adaptation strategies that are currently being considered and should also suggest their own adaptation strategies based on their research.

References: The assignment must include at least three references from peer reviewed journals.

Groups: Assignment groups will be comprised of five to six students from at least two different Faculties. Groups will be created in tutorial with the assistance from the tutorial TA. Each group in the class must research a different Country.

Rubric and Format: please review the rubric on Avenue for detailed requirements for each section, and please use headers for each section that corresponds to the rubric.

Word Limit: 5000 words

Due: TBA

Marked By: Instructor

B. Opinion Responses (15%)

Students will submit two opinion responses. Students should refer to readings, lectures, workshops, literature, and media to support each response.

B1. Opinion Response 1

Based on Lectures 1 - 5 (and their associated readings)

Question to be answered: Are cities doing enough to push towards interconnect modes of transportation?

- If yes, describe a currently implemented connected mode of transportation and the success of the solution within a city.
- If no, describe how cities should connect modes of transportation and the viability of this method.

B2. Opinion Response 2

Based on Lectures 6 - 10 (and their associated readings)

Question to be answered: Can individual behavioral change bring societal change?

- If yes, how may individuals be influenced to change?
- If no, what other actions can be taken to bring societal change?

How Opinion Response Assignments Work

Read the readings for the week and attend lecture, answer the Opinion Response Question by forming an opinion on the topic, articulate your opinion citing references from the readings and lecture to back-up your points.

References: A minimum of two, which must be from two different readings.

Word Range: 400 - 600 words

Due Dates:
Opinion Response 1: TBA
Opinion Response 2: TBA

Marked By: Your tutorial TA

Rubric: See Avenue to Learn

BONUS ASSIGNMENT (Up to 3% added to your final mark)

This is an individual bonus assignment due in the last class on April 8th. All students are encouraged to participate and develop an infographic or concept map of all the elements of the course and how they interrelate. Marks will be awarded based on creativity of information displayed, accuracy, interconnectivity of ideas and concepts, ability to represent complex ideas in the most simplest form possible, and how engaging the map/infographic is.

References: Your submission should be based on lecture and reading material, but no formal references are needed.

Word Range: This is a creative assignment that is to be presented graphically.

Due: April 8th (last day of class)

Marked By: Your tutorial TA

Rubric: No rubric.

POLICY STATEMENTS (Please read the following carefully)

Academic Dishonesty

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 result 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 only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Inclusivity

The Instructor, TAs, and Senior Manager, Academic Sustainability Programs are committed to creating an equitable environment and encourage openness to multiple perspectives and points of view. Students with diverse learning styles and needs are welcome in this course. If you have a disability or health consideration that may require accommodations, please feel free to approach one of the instructors and/or Student Accessibility Services (http://sas.mcmaster.ca/) as soon as possible.

A note about the use of Avenue to Learn

This course uses Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with a course instructor.

Course modifications

The Instructor 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 his/her McMaster email and course websites weekly during the term and to note any changes.

COMPREHENSIVE CLASS AND TUTORIAL SCHEDULE

- **Class #1 (Lecture): TBS - Happy City - an Introduction**

  Introduction, course outline, and assignment review. Plus a lecture on Happy Cities and what they require. This lecture helps set the foundation for the course.

  Readings:

  - See Class 1 readings on Avenue to Learn

  Tutorial #1 - Intro to Lifestyle Challenge

  - Question of the Week: How important are individual changes in achieving societal environmental, social, and financial change?
  - Lifestyle Challenge Start-up - get to know each other, think about your lifestyle challenge potential area of focus, and move towards setting up your challenge.

- **Class #2 (Lecture): TBA - The Food, Water, and Energy Nexus**

These three topics touch on virtually every issue related to sustainability and the environment. Students will be introduced to the concept of a "nexus" and the impacts of food, water, and energy on the environment, their influences on policy and global warming, greenhouse gasses, and supply chain demands.

Water is one of the world's most valuable natural resources. The demand on this resource has never been greater and the world's current population growth will add enormous pressure on the remaining fresh water resources available to us. Students will learn about the overall context of this issue and identify ways to reduce their water "footprint".

Readings:

- See Class 2 readings on Avenue to Learn

Tutorial #2

- Question of the Week: Explain the importance of the nexus and its potential positive and negative impacts on cities.
- Lifestyle challenge Check-in - in your groups of 4, make sure you are on the right track and ensuring that your challenge is effective, relevant, and is in line with the course objectives

- **Class #3: TBA - Climate Change Mitigation - Land Use and Transportation**
  Transportation, goods movement, land use, and buildings have a major impact on our lives and on the surrounding natural environment. Many climate change mitigation strategies directly impact cities and the activities that occur in them.

  Readings:

  - See Class 3 readings on Avenue to Learn

  Tutorial #3

  - Question of the Week: What are the land use and transportation innovations that Hamilton is pursuing and what is their potential effect on climate change. How does your lifestyle challenge contribute to climate change mitigation?
  - Lifestyle Challenge Feedback - prepare a 30-second description of your Lifestyle Challenge, which you will present to your class. Take note of others engaging in similar projects. Form small groups to discuss connections and possible collaborations for learning.

➢ ***Class #4 (Workshop 1): TBA- Climate Change Adaptation: Livability and Resiliency***

Livability and resilience, especially as they relate to cities, will be discussed. The concept of regeneration and resilience will be covered along with various examples of what can happen when systems are not resilient. Hamilton will be the area of particular focus for this workshop and we will discuss the Climate Change Action Plan for the City and evaluate and develop solutions.

Readings:

- See Class 4 readings on Avenue to Learn

Tutorial #4

- Question of the Week: How is Hamilton preparing for climate change and what adaptation strategies are being pursued? How does your lifestyle challenge make your life or ecosystem you live in more resilient?
- Lifestyle Challenge Ice-breaker - In small groups of 4, communicate your potential lifestyle challenges and their potential impact. Get feedback on whether this is a good focus area for you.

➢ **Class #5 (Lecture):TBA - Sustainable Agriculture and Food Systems**

Sustainable agriculture is the production of food - plant, fibre, or animal products using farming techniques that protect the environment, public health, human communities, and animal welfare. This lecture will provide an overview of these systems and the importance of sustainable farming to human health and well being. It will also cover the importance of the local economy and how cities can contribute.

At the individual level, there has recently been a lot of emphasis placed on the "100 – Mile" Food Challenge: Is it truly doable? The hundred mile food challenge has become a fascinating endeavor for individuals who have decided to try a diet consisting of eating food, for one year, grown within 100 miles of their home. The concept is often more important than the execution, however the class will explore the concepts, practicality, execution (if you're willing to try it for a defined period), and lessons learned.

Readings:

- See Class 5 readings on Avenue to Learn

Tutorial #5

- Question of the Week: Is Hamilton's food systems sustainable? What could be done to improve the city's ability to produce and consume local sustainable food?

➢ **Class #6: TBA - Risk and Responsibility: the role of government and the private sector**

This lecture will explore risk, the role of scientific certainty, and environmental managerialism. This will be contrasted to corporate social responsibility (CSR) and its benefits and drawbacks. This class will include a review of carbon trading and taxation schemes.

Readings:

- See Class 6 readings on Avenue to Learn

Tutorial #6

- Question of the Week: Explain the difference between carbon trade and carbon tax. How does this compare and contrast to Corporate Social Responsibility vs. Command & Control measures?

➢ **Break: TBA**

➢ **Class #7: TBA - Culture, Behaviour Change, and Engagement**

How do cultural values and behaviour change affect sustainability? We will explore the human connection to the ecosystem and answer questions such as: does all matter have life? and, are plants domesticating humans? We will also explore traditional environmental knowledge, including that of Indigenous peoples and approaches to valuing nature. Biophilia, Gaia, and theories of social change and tipping point will be explored.

Readings:

- See Class 7 readings on Avenue to Learn

Tutorial #7

- Question of the Week: Why is behaviour change important to increasing the sustainability of cities and reducing the impact of cities on the ecosystem? Does your lifestyle challenge involve behaviour change strategies? Include mention of your lifestyle challenge.

➢ **Class #8 (Workshop 2): TBA - Transportation and Complete Streets Workshop**

Transportation, goods movement, land use, and buildings have a major impact on our lives and on the surrounding natural environment. Many climate change mitigation strategies directly impact cities and the activities that occur in them. The Complete Streets concept can help advance this work and improve communities by providing a framework that balances the needs of all road users and employs interventions that achieve this goal.

An industry expert will lead the class in a workshop to discuss key issues in transportation and land-use, discuss major challenges and solutions, and develop Hamilton-specific solutions as a group. The proceedings of the workshop will be used to provide feedback to Hamilton project leads.

Readings:

- See Class 8 readings on Avenue to Learn

Tutorial #8

- Question of the Week: How are transportation and land-use linked - does the “Complete Streets” concept offer a viable solution to transportation and land-use issues? How can complete streets rebuild cities and communities to be more complete?

➢ **Class #9: TBA - Ecological Economics and Industrial Ecology**

This week, an overview of ecological economics, what it means and its importance will be covered. We will examine the concepts of growth and development, of ecosystem services, zero waste, and the concept of growth without growth. This includes an examination of Kenneth Golding - spaceman vs. cowboy economy, “No impact Man”, “Just Eat it”, and more.

Readings:

- See Class 9 readings on Avenue to Learn

Tutorial #9

- Question of the Week: How can Hamilton manage without growth? What cradle-to-cradle strategies could be employed in industry in Hamilton?

➢ **Class 10: TBA- Public Policy and Sustainability**

We will discuss municipal and sustainable planning and policy - including its positive aspects and its limitations. We will also explore issues of consumption and the citizen vs. consumer challenge. We will then explore various policy approaches and the impact of free trade, CETA, TPP, and issues with the rise of the global economy. Consequences such as precarious labour, the limits of consumer power, and the lessening power of nations will also be discussed.

Appropriate policy is an important tool to help society function in an acceptable way. Policy influences how we act as individuals and understanding policy is important to us all. Policy has a very specific influence on sustainability if properly developed and enforced. Students will learn about the definition of policy, policy development, and examples of how it influences sustainability in cities.

Readings:

- See Class 10 readings on Avenue to Learn

Tutorial #10

- Question of the Week: How do plans and policies impact the sustainability of cities. What is the potential impact on trade deals such as CETA on cities? Do these go against what city plans and policies aim to achieve?

➢ **Class #11: TBA - Natural Capitalism, Measuring Sustainability, and the Sharing Economy**

This lecture will cover various related concepts that present a methodology for establishing a new economic and ecological paradigm. Natural capitalism and the service-based economy have grown in implementation and potential since introduced in 1999. However, if such new economic paradigms have the potential to change the world and our cities, we also need a way measure these initiatives and demonstrate their success. We will discuss strategies to prove sustainable systems work, including the Social Progress Index and local examples. One important example will be the Smart Commute Initiative and how collecting data is key to the program's success.

Readings:

- See Class 11 readings on Avenue to Learn

Tutorial #11

- Lifestyle challenge presentations
- Question of the Week: What is natural capitalism and how is it important to measuring and achieving sustainability goals? How does the sharing economy implement the theories of natural capitalism and what are the implications of these new systems of commerce.

➢ **Class #12 (Workshop 3): TBA- Local-Shared Economy and Emerging Issues Workshop**

Tutorial #12:

- Lifestyle Challenge Presentations

- Question of the Week: What are some emerging issues that will affect cities in the next 10 years and how will the effects be mitigated or leveraged to ensure resilience in cities and regions?

80% of success is showing up!! … in this course it's 15%!!