

Green Urban Infrastructure: Sustainable City Forests (FOR421H1-F) & Urban Forest Conservation (FOR416H1-F). -- Fall 2018

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Office Hours: Email to arrange outside classroom time meetings, held in the
Faculty of Forestry, 33 Willcocks St, Room 2011

Class Schedule: Fall, Wednesdays 4-6pm, GB (Galbraith Building, Room 405)

Course Description

Imagine a city without green space – no street trees, no grass, no front yards, no parks – a true concrete jungle. Such a city does not exist in the world as there is always some private properties with a backyard and a bit of lawn or trees. Most Canadians live in urban centres, like Toronto, and most Canadian cities have a great variety of green infrastructure on both public and private land.

This course introduces undergraduate and graduate students to some of the challenges and opportunities that planners, and managers are faced with in their efforts to sustain and enhance the supply of environmental, economic, and social benefits derived from green urban infrastructure, and especially urban forests. The emphasis of this course and lecture series for undergraduate students is on urban forest management plans and the importance of vigorous tree inventories that are part of such plans. Lectures cover diverse topics surrounding the functions, benefits, value, and challenges of green urban infrastructure and urban forest conservation. Several guest lectures will be given by experts from different institutions, spanning topics from green roofs, design and engineering, to policy.

There will be no final exam in this class. However, the multiple assignments for undergraduate students are challenging and are aimed at providing students with the ability to work in multidisciplinary teams and as individuals to complete manual exercises, written reports, and oral presentations. The goal of the assignments is to maximize the knowledge of students about green urban infrastructure and urban forestry, and to prepare them for real life challenges they may encounter in the working world.

Course Objectives

The course will provide students with an opportunity to:

- 1) Understand the environmental and socio-economic roles of green urban infrastructure and the urban forest;
- 2) Develop an understanding of planning and policy approaches to the conservation of green urban infrastructure and urban forests;
- 3) Identify the issues, challenges, and opportunities around green infrastructure in cities; and
- 4) Be challenged with tasks that they may encounter in a working environment.

COURSE ASSIGNMENTS (FOR421H1F & FOR416H1F)

Course Evaluation

The assignment of marks in this course is intended to determine how well each student has progressed towards the objectives of the course. Consequently, each mark will be based on the student's aptitude to demonstrate an ability to:

- 1) Analyze and synthesize the information in a scientific manner;
- 2) Apply original, critical thought to the issues;
- 3) Communicate his/her thoughts in writing and/or orally; and
- 4) Work in a team towards a specific goal.

Assignment	Due Date	Mark
1) Media Presentation	Ongoing to 21 November	5% (individual)
2) Tree Inventory Exercise	3 October	20% (group)
3) Inventory Report to Council	17 October	15% (individual)
4) Info-Sheet	31 October	10% (individual)
5) Urban Forest Plan Critique	a) Presentation: 28 Nov & 5 Dec b) Report: 28 Nov & 5 Dec	10% (group) 20% (group)
6) Learning Journal Report	19 December**	20% (individual)
Total course marks		100%

**** Note: Learning Journal Written Report Due after Classes End (19 December)**

Assignment 1: News Media Presentation (5%)

Objectives:

The objective of this assignment is to:

- inform students about current issues in green urban infrastructure and urban forestry.
- teach students how to give concise presentations about a specific subject.
- teach students how to effectively communicate new information to colleagues.

The Task:

Each student will search for and choose a current news media article related to green urban infrastructure or urban forestry and *present it to their classmates in a 3-min oral presentation at the beginning of the lecture*. Any subject related to the broad theme can be chosen, depending on the student's preference. Students will sign up for a preferred date for the presentation, so that one to four students will present before each lecture throughout the course. The chosen article should have been published within the last year. Newspapers (e.g. Toronto Star or Metro), news websites (e.g. BBC), popular journal articles (e.g. National Geographic), or scientific articles (e.g. Science or Nature) can be used as sources for the presentation. Social media outlets such as Facebook or Twitter are not a valid primary source but can be used to find the original source of the news. Please communicate with the course instructor if you wish to use a different source for the assignment.

The presentation must include but is not limited to the following three elements: Primary source of the information (e.g. website of BBC News), date of publication, and summary of the published information. *It is not acceptable to just read out the article, even if it can be done in 3 minutes.*

Evaluation:

Students will not be evaluated on the chosen subject, as long as it relates to green urban infrastructure or urban forestry. The individual assignment is worth 5% of the course and will be evaluated based on:

Completeness of the information	30%
Analysis, Synthesis and Application	30%
Communication	20%
Organization	10%
Time	10%

Assignment 2: Tree Inventory Exercise (20%)

Objectives:

Effective urban green infrastructure management is built on a clear understanding of what is present, its condition, and trajectory. This ensures the greatest likelihood of success for developing green urban infrastructure management plans. More specifically, this assignment will help you understand the background needed to justify urban forest inventories and facilitate your subsequent formal Report to Council (*Assignment 3*).

Specifically, the objectives of this assignment are to provide the student with:

- An opportunity to learn tree species identification, size, health condition, and location.
- Experience working with individuals with different experiential background and training.
- An understanding of information used to build tree inventories for green urban infrastructure and urban forest management.
- Experience in compiling and writing technical documents in urban forestry.

The Task:

There are several approaches to collecting inventory data on green infrastructure in urban settings. All require sound knowledge of tree species identification, size, condition, and map location. Using the *Neighbourwoods* protocol outlined in class, each assigned team will select one location on campus (or elsewhere if easier), with a minimum of 30 trees, and provide a brief inventory report on the status of this area. Include in your report details on species, size (DBH, height, canopy dimensions, etc.), as well as signs of condition and a map of location. Besides the inventory, your report should include an interpretation of your results (what you have, what size, etc.), and the implications of your inventory for immediate action and long-term planning in terms of sustaining a growing urban forest canopy in your area (tree health, risk, etc.).

Requirements:

Each student team is required to **submit their Report by 3 October on Quercus**. Papers must be single-spaced with 12-point Times Roman font in Word, with ***a maximum length of 8 pages (excluding references, figures, maps, tables, appendices)***. Remember to use proper referencing in all cases (APA or similar format), the key being consistency in formatting. Web sites will be valuable resources but make sure they are reputable and be sure to reference them properly (date they were accessed).

Evaluation:

The team assignment is worth 20% of the course and will be evaluated based on:

Knowledge	30%
Analysis, Synthesis and Application	40%
Critical Thought	10%
Organization	10%
Communication	10%

Assignment 3: Inventory Report to Council (15%)

Objectives:

To provide the student with:

- An opportunity to demonstrate understanding on the role of inventories in effective urban forest conservation and management.
- Experience in writing a concise technical document for a non-technical audience.

The Task:

You are the manager responsible for the urban green infrastructure for a municipality of approximately 100,000 people. You have been directed by City Council to develop a strategic urban forest plan that will address all street and park trees within the jurisdiction of the municipality (thus, excluding “natural areas” such as ravines or woodlots). You have determined that one of the first steps in the development of such a strategy is the completion of an appropriate inventory. Your task is to *develop a Report to Council that clearly outlines why such an inventory is necessary, what it will involve, how and when it will be completed, and at what cost.*

Assumptions:

You must work with the following assumptions:

- Council is extremely busy and will not seriously consider long reports. So, you must be very concise; you must be able to inform and convince them or lose the opportunity.
- Council is made up of a diverse group of business people and professionals who have no training or experience in resource management (or urban forests in particular).
- The urban forestry budget has been frozen for the last two years (so it will be a challenge)!
- The municipality does not currently have an urban forest plan or inventory.
- While a “real” report to council may not include referencing, you **MUST** provide appropriate references in your report.

Requirements:

Students are required to work individually and submit an *electronic version (PDF preferred) to Quercus of their Report to Council on 17 October*. Papers should be single-spaced, 12-point Times Roman font and of **maximum length 5 pages (excluding references, figures, tables, budget)**. Remember to use proper referencing in all cases (APA or similar format), the key being consistency in formatting. Web sites will be valuable resources but make sure they are reputable and be sure to reference them properly (date accessed).

Evaluation:

The assignment is worth 15% of the course and will be evaluated individually based on:

Knowledge	30%
Analysis, Synthesis and Application	40%
Critical Thought	10%
Organization	10%
Communication	10%

Assignment 4: Info-Sheet (10%)

Objectives:

The objective of this assignment is to teach students how to effectively inform the public about a complex subject, maximizing the information provided while still making it interesting and enjoyable to read.

The Task:

You are hired by a municipality to manage the conservation and maintenance of their green urban infrastructure. New progress, changes, or challenges have been coming up that merit informing the public. Your task is to create an information sheet that catches the public's attention and informs them about a recent matter.

Requirements:

You may choose any subject related to green urban infrastructure that you have heard about during the lectures of this course, including your classmates' short presentations (*Assignment 1*). Do not invent a progress, change, or challenge, but rather choose one from real life. The ***Info-Sheet must be one letter-sized page only and should include a maximum of 2 figures or photos.*** The design is up to you, but it has to be well-organized, visually attractive, and easy to understand. The text must be concise, precise and easily readable, both in font and text-flow. Be enthusiastic and creative to catch the reader's attention! Submit an ***electronic version (PDF preferred) to Quercus by midnight on 31 October.***

Evaluation:

The assignment is worth 10% of the course and will be evaluated individually based on:

Knowledge	30%
Analysis, Synthesis and Application	25%
Creativity	15%
Organization	15%
Communication	15%

Assignment 5: Strategic Urban Forest Plan Critique (30%)

Objective:

The objective of this task is to provide an opportunity to consolidate the issues of urban forest conservation discussed in class through a critical examination of an existing urban forest plan.

Task:

Students will work in pairs to select one plan for examination from a list that will be provided. ***If a plan is selected that is not on the list, please clear it with the instructor before you start.*** The team will work through the plan systematically and consider the various aspects of urban forest conservation that were discussed in class and any other issues that are appropriate. What aspects of the plan are particularly good and what gaps are apparent? How could the plan be improved? Be sure to explain your arguments in detail. You should be innovative but practical.

A list of plans available for review will be posted on Blackboard; they will be **assigned to you on 31 October**. Students should consider the plan they are reviewing with respect to the various aspects of urban forest conservation that were discussed in class and any other issues that you feel are appropriate. What aspects of the plan are particularly good and what gaps are apparent? How would you improve the plan? Be sure to explain your arguments in detail. You should be innovative but practical.

Evaluation:

This final critique will be evaluated on both oral and written components.

Oral presentation: The oral presentation is worth 10% of the class mark. Individuals will present an overview of their report in ***one of the last two classes*** according to the assigned schedule. Each team will have a maximum of 10 minutes for their presentation. Time will be tight so it will be enforced strictly. On the day of your presentation, please arrive in the room early to load your PowerPoint.

Written report: The written report is worth 20% of the class mark and should be well-presented and appropriately referenced. Organize the report using effective headings and, if necessary, subheadings to guide the reader. *You will provide a ~300-word Executive Summary. The report will be between 1,500 and 2,000 words in length (excluding the executive summary).* You may identify the sections that were written individually or as a group. If no such identification is present, the assignment will be evaluated entirely as a group. Papers must be single-spaced with 12-point Times Roman font and **submitted electronically on Quercus by midnight on the day of the presentation.** Remember to use proper referencing in all cases. Web sites will be valuable resources but make sure they are reputable and be sure to reference them properly.

Both the oral presentation and the written report will be evaluated using the following weights:

Group component		Individual component	
Knowledge	10%	Knowledge	10%
Analysis, Synthesis, & Application	10%	Analysis, Synthesis, & Application	10%
Critical Thought	10%	Critical Thought	15%
Organization	10%	Organization	5%
Communication	5%	Communication	15%

Assignment 6: Learning Journal Report (20%)

Objective:

The objective of this component of the mark is to encourage each student to think critically about various aspects of green urban infrastructure and urban forestry. The analysis and reporting process is also intended to facilitate a review and reflection of the material covered and to encourage thought about how various aspects of urban forestry integrate (or fail to integrate).

Report Content and Approach:

The report IS NOT your notebook where you jot down information from lectures. **It IS** intended to be more like a diary of ***your thoughts and observations*** from the various lectures and readings. This is not to be something that you frantically work on the night before it is due. It should be something you add to regularly through the semester and as the issues or observations present themselves. The analysis will be a living document; you will want to go back to previous entries as new information becomes available, or as you think of something new and relevant.

What are some things that you should consider incorporating into your analysis? You might consider identifying the three most important "take home messages" from each lecture or reading. How does the information from one lecture or reading relate to that of the other lectures? What aspects of the lecture or reading did you not completely understand? How did you feel about the issues discussed? Perhaps most importantly, how did the information from the lecture or reading relate to green urban infrastructure in sustainable land-use?

As in all the other assignments in this course, we will be expecting to see excellent evidence of a familiarity and understanding of the information provided in the lectures, readings and in-class discussions as well as evidence of analysis & synthesis of this information (and any other sources you feel are appropriate - news items from the media, discussions with friends, other course material, etc.); critical thought; excellent organizations and effective communications.

The total length of the ***Learning Journal Report should be between 2,000 and 3,000 words***. Don't follow this guideline strictly for each topic; you may be more interested in one than another. However, your final document should not exceed 3,000 words in total. Please divide your document using headings representing the major topic areas.

The paper must be submitted single-spaced with Times Roman 12-point font and should be posted ***electronically to Quercus, preferably in PDF format, by 19 December 2017***. Remember to use proper referencing in all cases using the APA or similar format. Web sites will be valuable resources but make sure they are reputable and be sure to reference them properly.

Evaluation:

The report is worth 20% of the class mark and the weighting for each of the mark components is:

Knowledge	25%
Analysis, Synthesis & Application	30%
Critical Thought	25%
Organization	10%
Communication	10%

COURSE AND UNIVERSITY POLICIES

Assignments:

Unless stated otherwise, assignments are to be submitted electronically to Quercus at midnight on the due date. *Late assignments will be penalized 10% per weekday up to a maximum of 40%, unless discussed with the instructor.* Assignments should be single-spaced, 12pt Times Roman.

Grading Standards:

The University of Toronto grading scale will be used for marking.

Percentage	Letter Grade	Grade Definition	
90-100	A+	Excellent	Strong evidence of original thinking; good organization; capacity to analyze and synthesize; superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.
85-89	A		
80-84	A-		
77-79	B+	Good	Evidence of grasp of subject matter, some evidence of capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with literature.
73-76	B		
70-72	B-		
67-69	C+	Adequate	Student who is profiting from his/her university experience; understanding of the subject matter; ability to develop solutions to simple problems in the material.
63-66	C		
60-62	C-		
57-59	D+	Marginal	Some evidence of familiarity with subject matter and some evidence that critical and analytic skills have been developed.
53-56	D		
50-52	D-		

Academic Integrity:

The University of Toronto's Code of Behaviour on Academic Matters, which all students are expected to know, says it is an offence to:

- Use someone else's ideas or words in their own work without acknowledging that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism.
- Include false, misleading or concocted citations in their work.
- Provide unauthorized assistance to another student. This includes showing another student completed work.
- Submit their own work for credit in more than one course without permission.
- Falsify or alter any documentation required by the University. This includes, but is not limited to, doctor's notes.
- Use or possess an unauthorized aid in any test or exam.

Thus, plagiarism is unacceptable and will be penalized according to [University of Toronto policy](#). Assistance in avoiding plagiarism can be found [here](#) (Ctrl + click to follow).

Please be aware that all written assignments may be reviewed using TURNITIN.

Attendance:

It is expected that all students attend lectures, as they are chosen and designed to help with the course assignments. If a student cannot make it to a lecture, it is expected that the student will get updates from fellow classmates. Whenever possible, PowerPoint presentations of lectures will be uploaded to Quercus, but be advised that this material alone will often not suffice to understand what was taught in the class. It is not the instructor's nor the TA's responsibility to inform students about a lecture's content when a lecture was missed.

All students are expected to appear some minutes ahead of the lecture, so that the lecture can start on time. This is especially important for guest lectures, as it is a sign of disrespect to the guest lecturer if students arrive late and thus disturb the lecture. To avoid lateness due to time required to change rooms from a previous lecture, the course will start every week at 10:10am (which means that you are required to arrive BEFORE that time).

Communication with the Instructor and the TA:

You can communicate with the course instructor either in person before or after the lecture, or by email (see email addresses above). Office hours are to be arranged with the Professor and TA as necessary. The TA will announce his availability for Office Hours, but students can write the instructor for a meeting anytime. The TA will not attend all lectures, but will generally be able to answer emails and arrange meetings by email, if needed. For all communication by email, it is advised to use your official University of Toronto account (e.g., @mail.utoronto.ca), as sometimes emails coming from other email providers will end up in the spam folder.

Health and safety:

The course follows the [University of Toronto's Health and Safety Policy](#) and students are responsible for being safe in compliance with this policy.

Accessibility needs:

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or Accessibility Services at (416) 978 8060; accessibility.utoronto.ca.

Student support:

In order to excel in this course, students must keep up with the assignments and readings, as well as attend lectures. The course is designed to help students achieving excellency, when all instructions are followed. If in doubt about the understanding of any course content, please contact the TA or course instructor. Because writing is a key-component in the assignments of this course, please refer to the [University of Toronto's Writing website](#), where useful advice can be found.

Mental health and wellness:

As a university student, you may experience a range of health and/or mental health issues that may result in significant barriers to achieving your personal and academic goals. The University of Toronto offers a wide range of free and confidential services and programs that may be able to assist you and you should seek out these resources early and often.

Student Life Website: <http://www.studentlife.utoronto.ca>

Health and Wellness Website: <http://studentlife.utoronto.ca/hwc>

If, at some point during the year, you find yourself feeling distressed and in need of more immediate support, visit the Feeling Distressed Webpage:

<http://www.studentlife.utoronto.ca/feeling-distressed>, for more campus resources.

All students in the Faculty of Engineering have an Academic Advisor who can advise on academic and personal matters. You can find your department's Academic Advisor here:

<http://undergrad.engineering.utoronto.ca/advising-support-services/academic-advising/>

Immediate help is available 24/7 through Good2Talk, a post-secondary student helpline at 1-866-925-5454.

Acknowledging Toronto's First Peoples:

Toronto is a city of immigrants and has been for hundreds of years and has been a gathering site for humans for over 15,000 years. This sacred land is the territory of the Huron-Wendat and Petun First Nations, the Seneca, and most recently, the Mississaugas of the Credit River.

The territory was the subject of the Dish with One Spoon Wampum Belt Covenant, a coming together of the Iroquois and Ojibwe Confederacies and other allied nations to peaceably share and care for the resources around the Great Lakes.

Today, Toronto is still a meeting place for Indigenous people from across Turtle Island, and immigrants, both new and old, from across the world. We are grateful to have the opportunity to work in the community, and on this territory.