FNRM 4501/5501

Urban Forest Management: Managing Greenspaces for People

Spring Semester, 2020

Instructional Team:

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Office Hours: By appointment.

Contacting each other: The official University of Minnesota form of impersonal communication – email.

Time and Room: Mondays and Wednesdays, 2-3:15 p.m., Green Hall 19.

Required Assignments:

	Unit Points	Total Points
Attendance (% of classes attended)	29 classes	100
Critiques (4)	35	140
Experiential Learning Project: *Developing the UMN Twin Cities Arboretum: Part II.*	610	610
Group-led Class Discussion	100	100
"Tree Board" Meeting and Report	50	50
Total Points		**1,000 points**

Grading:

Urban Forest Management Grading Scale:

A = 900-1,000 B = 825-890 C = 750-800 D = 650-725 F = <650

University Grading Standards:

A Achievement that is outstanding relative to the level necessary to meet course requirements.

B Achievement that is significantly above the level necessary to meet course requirements.

C Achievement that meets the course requirements in every respect.

D Achievement that is worthy of credit even though it fails to meet fully the course requirements.

S Achievement that is satisfactory, which is equivalent to a C- or better.

F (or N) Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an Incomplete..

I (Incomplete) Assigned at the discretion of the instructor when, due to extraordinary circumstances, e.g., hospitalization, a student is prevented from completing the work of the course on time. Requires a written agreement between instructor and student.

Academic workload:
The University of Minnesota has the expectation that students will spend 3 hours a week per course credit (including time in class) working for a class. **This is a 3 credit course, meaning 2 hours in class and 7 hours outside of class each week**. Readings and assignments have been designed to be able to be completed in no more than 7 hours outside of class (and in many cases much less). For more information on expected workloads as a University of Minnesota students, please refer to the:
University of Minnesota Policy
http://www.policy.umn.edu/Policies/Education/Education/STUDENTWORK.html.

Other Course Policies:

- **Classroom conduct:** Students come from a variety of backgrounds and everyone (including the instructors) is expected to be respectful and polite. No wiggle room here. No extra credit options, either.
- **Academic Dishonesty:** Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F for the entire course. https://isss.umn.edu/Academics/academic-integrity.html.

- **Sexual Harassment:** Sexual harassment (or harassment of any kind) will not be tolerated. https://policy.umn.edu/hr/sexharassassault.
- **Students with Disabilities:** The University is committed to providing quality education to all students regardless of ability. Determining appropriate disability accommodations is a collaborative process. **You as a student must register with Disability Services and provide documentation of your disability**. The course instructor must provide information regarding a course's content, methods, and essential components. The combination of this information will be used by Disability Services to determine appropriate accommodations for a particular student in a particular course. For more information, please reference Disability Services: https://disability.umn.edu/.
- **Religious Observances:** Should you need to miss class or turn-in assignments late due to a religious observance, please make arrangements at the start of the semester. Refer to the course schedule below for exam and assignment due dates. There will be NO penalty, prejudice, etc. for classes, or assignments needing to be rescheduled due to religious observances.
- **Mental Health Services:** As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.
- **Equity, Diversity, Equal Opportunity, and Affirmative Action**: The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_equity_diversity_equal_opportunity_and_affirmative_action.pdf.

Course Outline

A COMPLETE LIST OF PAST COURSE PROJECTS MAY BE FOUND ON: www.urbangreenforpeople.com, the official website for urban greenspace management.

Date:	Topic
1/22	The role/s of volunteers and volunteer programs in managing urban greenspaces. ***Before class, read or view these resources:*** ***1.*** Best Practices for Managing Volunteers in Your Park (video, 17:09) https://www.youtube.com/watch?v=Fvvfa9ySjWU ***2.*** Examining Motivations and Recruitment Strategies for Urban Forestry Volunteers - Moskell, Allred, & Ferenz (2010). https://pdfs.semanticscholar.org/c612/8daa15f1022b30e6caf44fd0eebe6d05ce14.pdf. ***3.*** Urban ecological stewardship: Understanding the structure, function and network of community-based urban land management - Svendsen & Campbell (2008). https://pdfs.semanticscholar.org/cdcd/a6c253dadbbdc7d205cea3e8593fc61a1a80.pdf.
1/27	Green and Nature Based Education in Correctional Facilities. ***Before class, please review the following web sites and video:*** ***1. Science in Prisons. (view both videos)*** https://nalininadkarni.com/science-in-prisons/ ***2. Conservation projects in prison.*** https://bioone.org/journals/natural-areas-journal/volume-35/issue-1/043.035.0113/Conservation-Projects-in-Prison--The-Case-for-Engaging-Incarcerated/10.3375/043.035.0113.full ***3. Riker's Island Horticulture.*** http://bronx.news12.com/clip/13862644/video-rikers-island-utilizes-horticulture-program-for-inmates ***4. Green prison programmes, recidivism and mental health: A primer.*** http://sustainabilityinprisons.org/wp-content/uploads/2017/09/Green-Prison-programmes-recidivism-Linden.pdf

1/29 Community capacity, greenspaces and participation.

Before class, please review the following articles and videos:

1. ***What is community capacity building?*** https://www.youtube.com/watch?v=oNr9_riy5XU
2. ***Opportunities and challenges in working with volunteers in local parks.*** https://www.thenatureofcities.com/2015/11/05/opportunities-and-challenges-in-working-with-volunteers-in-local-parks/
3. ***Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management.*** https://canvas.umn.edu/courses/156614/pages/wednesday-january-27th
4. ***The importance of trees and nature in community.*** https://canvas.umn.edu/courses/156614/pages/wednesday-january-27th

2/03 Managing a campus landscape: issues of capacity, policies and expectations. Guest: Tom Ritzer, landscape architect and director of UMN Landcare.

Before class, please read the following:

1. ***The 30 Most Beautiful College Arboretums*** ***https://www.collegerank.net/most-beautiful-college-arboretums/;***
2. ***Tree Campus USA*** ***https://www.arborday.org/programs/treecampususa/***

Discussion and description of the required tree board assignment. First deadline is February 19.

2/05 Review of Experiential Learning Project: Developing a UMN Twin Cities Campus Arboretum. **Part II: Inventorying significant trees, landscapes/plant communities, and special places.** Assignment of task teams, selection of task team leaders, clarification and details of deliverables and project timelines. ***Before class, please review results and recommendations from Part I, 2019.***

Guidelines for Selecting a Team Leader [2.1.7.g]
The implementer/team leader needs to be a person who understands the goals and can coordinate the plan. This person should have authority, or access to those in authority, in order to build internal support and secure necessary approvals.
The team leader should have the knowledge, skills and abilities to be responsible for:
Developing and overseeing the action plan;
Providing support to team members;

Communicating the plan's objectives and tasks;
Monitoring resources; and
Communicating to those not involved in the action plan, such as authorities and key influencers.
The project manager or team leader's task is to help keep the focus on the goals of the project. How to Manage A Project lists specific tasks assigned to the project manager.

Assignment: Critique No. 1: Urban Greenspaces and Social Equity. Due February 17. See Appendix A.

2/10 Effects of greenspaces on people: recreation, business, property values and ecological assets.

Before Class, read or view the following:

1. ***Midwest Community Tree Guide, Chapter 2.*** http://www.fs.fed.us/psw/publications/documents/psw_gtr199/psw_gtr199.pdf.
2. ***You Tube video "Benefits of Urban Trees" by American Forests, 2012. 5 min. 38 seconds:*** https://www.youtube.com/watch?v=jlz_rZH1lYk
3. ***Beyond Planting: An Urban Forestry Primer. In:*** http://scenariojournal.com/journal/issue-4/.
4. ***Resident preferences for urban greenspaces***. http://joa.isa-arbor.com/request.asp?JournalID=1&ArticleID=122&Type=2.
5. ***Urban Forests as Landscape Artifacts. In:*** http://scenariojournal.com/journal/issue-4/

2/12

Student-led Discussion Session One (Team Red Star) on a changing climate and the impacts on "community" which can include the landscape community as well as the two-legged community. See Appendix C for preparation and presentation requirements.

Following the Red Star production of approximately 45 minutes, there will be a continued discussion on which areas of the UMN Twin Cities campus have the greatest heat island effects, and how (if it's even possible) greenspaces could soften that issue.

2/17 **Critique Number One due today by 11:59 p.m. Electronic submission to Gary is preferred.**

Group work on the campus arboretum project. It is recommended that you go into the "field" to start discovering those significant trees, plant communities and special/sacred spaces to start creating your inventory. Tablets will be available for you to GPS locate members of your inventory.

2/19 Putting tree canopy in perspective. Where is it most important? Where is it most prevalent? How can the two ends get closer together?

Before class, please read the following references:

Tree canopy and social equity. The Vibrant Cities web site with several case studies and supporting data: https://www.vibrantcitieslab.com/equity/
Monitoring and assessment of urban forests and trees. **Read Tools To Assess Ecosystem Services and Values.**
http://www.nrs.fs.fed.us/urban/monitoring/.
How many trees are enough? Tree death and the urban canopy. In:
http://scenariojournal.com/journal/issue-4/

TREE BOARD MEETING announcement and details due no later than today in class.

2/24 **Critique No. 2: Green vs. gray infrastructure conflicts: what happens when it works? DUE March 4, 11:59 P.M**

Converting gray, impervious infrastructure to effective stormwater management landscapes. Guest: Peter MacDonagh, landscape architect.

Before Class, review the PowerPoint: "Is This Normal?"

2/26 Youth programs in urban greenscapes. Connecting youth with nature through "green" programs.

Before Class references to be assigned by February 19.

3/02

Student Group-led Discussion Number Two (the Bullseye group) on the value of using citizen scientists in urban greenspaces, and the accuracy of the information they collect.

The remainder of the class following the Bullseye presentation will be devoted to engaging the public with their tree resources: Brewing A Better Forest. Guest.

3/04 Group work day on the campus arboretum project.

Critique #2 Due by 11:59 p.m. Electronic submission to Gary is preferred.

3/09-11 Spring Break…Woo Hoo!

3/16 Group work on campus arboretum project during class period.

3/17 and 18 Minnesota Shade Tree Short Course. Student Scholarships available. Talk with Monica, Gary or Ashley about them.

3/18 **Mid-point projects' check-ups. Short (<10 minutes each) group presentations on status of research, inventories and locations. Reports should include approximate modes of transportation to get to the trees/plant communities/sacred places, e.g. by foot, bus, mass transit, bicycle.**

Remainder of class will be a discussion on Communicating Scientific Information to normal people.

3/23 **Critique #3. Risk assessment in urban greenspaces: what is acceptable, what is unacceptable? Due by 11:59 p.m. on April 1.**

Urban greenspaces and cultural perspectives. Guests.

Before class, references will be provided by 3/16.

3/25 Urban food forests. Guest.

Before class, references will be provided by 3/18.

3/30 

Student Group-led Discussion Number Three (Team Eeyore) on impacts of invasive species on urban forests and urban forestry.

The remainder of the class will include a discussion on how tree/canopy losses due to invasive species affect public health.

4/01 Group work day on campus arboretum project.

Critique #3 Due By 11:59 P.M.

4/06 The effects of urban greenspaces on the mental and physical health of community members and visitors. Guests.

Before class references will be provided by 3/30.

4/08 Water management in urban greenspaces: water quality and quantity; designing water-conservative landscapes and runoff capturing gardens.

Walking "field trip."

"Urban Bioswales." https://hixon.yale.edu/practice/bioswales

4/13 **Critique # 4: Technology and the ability to manage urban greenspaces smarter, more efficiently and more effectively. DUE APRIL 22, BY 11:59 P.M.**

Guest lecturer on technology and urban forest health management.

Before class, references will be provided by 4/6.

4/15 Group Work Day.

4/20 Preserving legacy trees: the practice of Conservation Arboriculture. Guest.

Before class references will be provided by 4/13.

4/22 

Student Group-led Discussion Number Four (Team My Little Pony) on Street Tree Programs: stocking levels, genetic diversity, planting programs.

Critique #4 Due by 11:59 p.m.

April 22, 2020 **EARTH DAY**. https://www.earthday.org/earth-day-2020/

4/27 ***Practice presentations in class: first 45 minutes.***

Wrapping up details the second half.

TREE BOARD MEETING REPORT DUE NO LATER THAN TODAY IN CLASS.

4/29 Greenspace health issues: What are the roles of pollinator gardens in urban greenspaces? Guests.

Before class, references will be provided no later than 4/22.

4/24 ***Arbor Day in Minnesota.*** *http://www.arborday.org/arborday/history.cfm*. Tree City USA. http://www.arborday.org/programs/treeCityUSA/index.cfm.

5/04 **Final presentations to interested and invited audience members.**

APPENDICES

Appendix A: Critique Assignments.

All critiques are written assignments. Review the reading assignments before class. Write a critique on the topic and the assigned readings (I don't care which side of the fence you are standing), discuss and summarize the main topics, any bias found in the readings, points for future research. Include in the critique the success of each article/video in explaining the topic to a diverse audience, citing specific examples. An example of a critique at the end of Appendix A.

These are writing assignments. Correct grammar and spelling, sentence structure and references are required for an acceptable paper for credit.

All critiques are due approximately 10 days after the assignment date in the syllabus, by 11:59 p.m. No critiques will be accepted after that date and time.

ARTICLES FOR EACH CRITIQUE ASSIGNMENT WILL BE PROVIDED DURING THE SEMESTER ON THE ASSIGNED DATES IN THE SYLLABUS.

No. 1: Urban greenspaces and social equity. DUE FEBRUARY 17, By 11:59 P.M.

There are many challenges and conflicts with infrastructure (both biotic and abiotic) in an urban environment. Urban forests provide many benefits including economic and social benefits, but it's not just a matter of inserting trees into sidewalks or near store fronts. Not everyone in a community equally benefits from urban greenspaces, and often the ones who could benefit the most are the ones least accommodated. There is no minimum or maximum length of this critique. However, it should be complete enough to demonstrate your knowledge of each research study and ability to lead a discussion of it if called upon.

No. 2: Green vs. gray infrastructure conflicts: what happens when it works? DUE March 4, BY 11:59 P.M.

Theoretically and ideally, the green and gray infrastructure of a community is designed in concert, not in separate vacuums. Unfortunately, that's not the case and one or the other or both tend to lose in many instances. When the gray infrastructure wins out, it's one of the reasons why the average lifespan of a "downtown" tree ranges between 7-28 years (Roman et al, 2014). When the green gets the edge, communities end up with sidewalks that look like roller coasters, and sewer lines are filled with tree roots. But, sometimes it works well, and both infrastructures benefit from each other. There is no minimum or maximum length of this critique. However, it should be complete enough to demonstrate your knowledge of each research study and ability to lead a discussion of it if called upon.

No. 3: Risk assessment: what is considered an acceptable risk; what is considered an unacceptable risk? DUE April 1, 11:59 P.M.

Okay, there's no such thing as a risk-free landscape. But that doesn't mean that people take their lives in their hands when they go for a walk through a park, or hunt for wildflowers in a forest floor, or park under the shade of a tree in a public parking lot. The goal for managing urban greenspace risks is to minimize the risks, allowing for acceptable risks and eliminating unacceptable risks as much as possible. That's your challenge and the assigned resources will help you get there. There is no minimum or maximum length of this critique. However, it should be complete enough to demonstrate your knowledge of each research study and ability to lead a discussion of it if called upon.

No. 4: Technology and the ability to manage urban greenspaces smarter, more efficiently and more effectively. DUE APRIL 22, BY 11:59 P.M.

Urban greenspaces are intended to add to the quality of life for the residents and visitors to the area. Therefore, managing the resources to be physiologically healthy and safe are critical. Having said that, there are a lot of acres in urban greenspaces, a lot of flowers, groundcovers and trees…an overwhelming inventory to manage for any one department. These articles address some the real and emerging technologies that hold the promise of improving those benefits to a community and those who live there.

Example of a previous critique from a previous class:

Critique #2

More than half of the people in the world live in urban landscapes, and this figure is increasing. As more people move to cities, land is converted from its natural conditions into manufactured ones, being predominantly grey spaces. This manufactured area creates a heating effect in the city. This is done through the heat generated from buildings as well as the concrete and other aspects of the landscape radiating the heat that they absorb. This increase of temperature can have a negative effect not only on people's comfort, but also health. The urban heat island, as it is generally termed can have a drastic effect on vulnerable people such as elderly. The effect of the heat island will increase in the future as it is further influenced by climate change.

There are steps that we can take in designing our cities with the goal of ameliorating the problem of the urban heat island. One way we can do this is through designing more efficient building, which use less energy and are better insulated so that the heat does not build up to the extent that it currently does in the city. Another step we can take when thinking about reducing heat is incorporating greenspaces into urban design in order to decrease temperature. Trees reduce temperature through producing shade where people can take refuge outside and by transpiring, which like sweating has a cooling effect. Many types of greenery can also have this effect, however the design of greenspaces has a large effect on its effectiveness. For instance, turf grass may need to be watered which may not be practical when using limited resources, even more so in the face of climate change.

In order for landscape architects and other designers to make the proper decision when designing a place it is important that they know what problems they or the city are facing and about designs aspects that can ameliorate these problems. In the video by University of Technology Sydney the narrator talks about the problem of the urban heat island and how it will increase in the face of climate change. This short two minute video is designed to communicate with the public and increase awareness of the problem. It is important that the populace knows about the urban heat island so that they can properly influence elected decision makers to take action. This video is short and concise, and more so covers general ideas than going into details. It is meant to spread awareness, not to inform designers and resource managers. The video does this effectively by staying short and having a positive message. The first half of the video they talk about the problem which may seem depressing, but this is followed by the second half of the video which discusses what they are doing with their technology and mention that there is a solution or at least a partial solution. In addition to this, the music is light and hopeful and with nice video shots of cities and greenspaces. This creates more of an inspiring video, because if the viewer became depressed about their situation they would not be likely to act.

Besides inspiring the common person to influence officials, politicians and city managers are more commonly persuaded by numbers and what their decisions would mean financially. The paper by Brown titles, “Designing urban parks that ameliorate the effects of climate change”, they present their results using energy budgets as the figure. This figure would be more likely to influence managers and business minded people than abstract ideas of comfort or perhaps even health risks. The paper has a stated goal of allowing landscape architects to make better management decision, whereas the paper doesn’t really discuss design of greenspaces at all. They are more of an analysis looking at general models of simulating the effects of climate and climate change on the city’s energy budgets and comfort effects. They recommend that designers look at a separate paper. This research paper is more so also about the importance of thinking about this subject and how greenspace can be utilized as a part of the solution.

When one is managing natural landscapes, one must think about impacts their decisions can have that aren’t apparent at first. The webpage by the Climate Institute titled “Invasive species & Climate Change” discuss the impact of climate change on invasive species. This publication is focused on informing those that wish to know about the effect of climate change on invasive species. The author is a Ph.D. student and such is rather information dense, however still readable by the average person without too much jargon. There is also a section for management which resource managers may wish to look if they are thinking about climate change. As resource managers not only is the urban heat island influenced by climate change, but also our native ecosystems, which will continue to be invaded by nonnative species, and may see an increase in this because of climate change. Warmer temperatures allow species to spread farther and more prolifically into new areas that are now survivable for them. Managers must think about this when making management decisions. One way they can do this can be through focusing on planting native vegetation. This may limit natural resource managers that plant certain plants for the greatest benefit they provide. In some cases this may be a nonnative, and not being able to plant it is a tradeoff for not having a drastic effect on the natural environment. Natural resource managers and designers need to think about these tradeoffs when creating solutions to their problems such as ameliorating the urban heat island effect.

In order to reduce the risks of the urban heat island effect natural resource managers and other designers or those in power must take action to decrease the severity of the problem. This can include designing buildings in a certified energy and heat efficient way or by incorporating greenery into designs to create a cooling effect. In order for this to happen effectively, resources including technical information need to be available for designers and managers to use in order for them to make practical decisions that actually create the desired effect with minimal undesired consequences. Resources that inform the public are also needed so that they then contact their representatives to persuade them to help mitigate the urban heat island.

References

Brown, R. D., Vanos, J., Kenny, N., & Lenzholzer, S. (2015). Designing urban parks that ameliorate the effects of climate change. *Landscape and Urban Planning, 138*, 118-131. doi:10.1016/j.landurbplan.2015.02.006

Invasive Species & Climate Change. (2010). Retrieved from http://climate.org/archive/topics/ecosystems/invasivespecies.html

Sydney, U. O. (2017, March 15). UTS Climate Change Cluster (C3) – Urban Heat Island Research. Retrieved from https://www.youtube.com/watch?v=TOX98wak0YU

Appendix B: Experiential Learning Project: The University of Minnesota Twin Cities Campus Arboretum. Part II: defining, locating and inventorying significant trees, special and significant plant communities, and sacred/special places.

You will be a member of one of three development teams:

1. **Significant trees on the Twin Cities campus.**
2. **Significant and/or special plant communities on the Twin Cities campus or contiguous to it.**
3. **Sacred places on the Twin Cities campus.**

Assignment to the teams will be made on February 5, with more details on the assigned tasks and deliverables.

Evaluation of Project Deliverables

1. Written product of final report (group grade, 20% of total points).
2. Journal reports from each group work day, including tasks accomplished (deliverables), who was present from your team, amount of hours worked on the project that day, on-site or in classroom (group grade, 5% of total points).

3. Delivery of interim and final presentations (group grade):
    a. Creation of Power Point presentations (10% of total points).
    b. Delivery of update and final presentations on May 4 (15% of total points).
4. Electronic map of assigned inventory (i.e., significant trees, significant plant communities, sacred/special places); (group grade, 15% of total points).
5. Peer evaluation (10% of total points).
6. Timeline due dates met (10% of total points).

Timeline: **Dates listed are the deadlines. It's smart to get ahead of them, though.**

1. Acquisition of electronic maps from UMN Landcare. **By February 10, 2:00 p.m.**
2. Guiding definitions of Significant Trees, Significant or Special Plant Communities. **By February 19, 2:00 p.m.**
3. List of potential people or groups who would be interested in your perspective of the arboretum plan, i.e., significant trees, significant plant communities, sacred/special places. **By March 4, 5:00 p.m.**
4. Initial list and locations of trees, plant communities, sacred places. **By March 18, 5:00 p.m .**
   Short presentations of team status.
5. Second draft of significant trees, plant communities or sacred places. **By April 1, 5:00 p.m.**
6. Third draft of list of trees/communities/sacred places, descriptions, locations on electronic maps, and report text describing and summarizing your recommendations. **By April 15, 11:59 p.m.**
7. **Power Point for final presentation draft and practice presentation in class. April 27.**
8. Presentation to invited audience. Final recommendations for each task group. Power Point presentation, executive summaries completed and printed. In class, **May 4.**
9. **May 6.** Final PowerPoint and Report with electronic map due, 11:59 p.m.

Appendix C: Group-led class discussions. Look for the Icons!




Each student group will lead one class discussion period. In other words, each group will "teach," "direct," "engage" the class on the topic that they have "selected" on an assigned date. The topic will be determined during the first class period when each student group randomly draws a coded paper that includes the assigned topic which corresponds to the syllabus date for said topic.

One week prior to the assigned discussion period, the student group will email the class a reading assignment consisting of a minimum of three articles, publications, videos or Power Points to review before the class. The student group then leads the class in a discussion of the topic via Power Point/Prezi, interactive games or exercises, hands-on experiments, tours or however the student chooses to direct a discussion of the subject. The key to the success of the class is discussion, so don't think you need to stand in front and talk for the entire length of the class. **The student group-led class discussion is limited to 45 minutes in length.**

Your grade is based on: sending out the references one week ahead of time (20% of grade), the quality of the references (25% of grade)…no blogs, no "my opinion dot com," no social media of any sorts, and the content, intent and delivery of the discussion (55% of the grade). You will not be graded for fluency of speech or anything other than content, intent and delivery. Just so you understand what delivery is, it's the quality of the PowerPoint if you use that, or the organization of any activities, the use of props or examples, and any other types of media supplements, such as videos as well as effective use of the 45 minutes provided for the discussion..

Appendix D: Tree Board Meeting and Report.

In a local community that has a tree board/task force or an environmental committee or an environmental advisory commission, attend a scheduled meeting. Print off their monthly or quarterly meeting schedule and submit to the course instructor no later than February 19, 2020 (that amounts to 10 of the assignment points). Beautification committees are also acceptable. Attend the meeting, take "minutes" and write a report on the actions of the committee during that meeting. In this report, also explain the responsibilities of the board/committee, how often they meet and the make-up of the board. Due by April 27, 2020.

Meetings that you have attended before this taking this course do not count.