

Fall 2022 Course Syllabus
Urban Forest Management
SPEA E422/522 (3 credit hours)



Faculty Instructor:

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Teaching Assistant:

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MPA/MSES Candidate
O'Neill School of Public and Environmental Affairs
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Class meetings (in-person):

DAYS & TIME: Tuesday / Thursday, 11:30am – 12:45pm EST

LOCATION: Tocqueville Room, Ostrom Workshop (513 N Park Ave.)

ZOOM: <https://iu.zoom.us/j/89885948533>

Instructor/student meetings:

By appointment; email Sarah or Neil to schedule

Course Description

This course, framed by a social-ecological systems perspective, explores the theory and practice of sustainable urban forest management for resilient cities. Urban trees and their associated vegetation provide a myriad of ecological, social, and economic benefits to communities, particularly as adaptation and mitigation to climate change. Arguably, some aspects of urban forests are said to produce disservices, as well. In either case, urban trees impact people. Likewise, people impact trees; human decision-making and actions – active and passive ones – help to structure the urban forest. For example, while communities may commit to plant millions of street trees, they may simultaneously ignore vulnerable remnant forest stands planned for removal by developers. Similarly, while trees help us adapt to/mitigate climate change, they are also affected by climate change. In other words, urban forest structure and therefore function are embedded within a complex, adaptive system with emergent properties – an ecological system intricately linked to human social systems. Such systems require management for the sustainable production and equitable distribution of their public good.

This course will cover both the theory and practice underpinning urban forest management. Such an approach requires a multi-method course format. Students will be expected to read a moderate amount (~2 hours / week) of scholarly and gray literature as well as popular media to prepare for class activities and to undertake course assignments. Classroom time will be spent in a mix of discussion, instructor-offered lectures, group presentations, peer-to-peer/group activities, classroom exercises, and importantly, guest presentations. Numerous guests who are significant players in urban forestry will join us over the course of the semester. Students should give great effort to be prepared for these professionals and engage them for their generosity of time and the expert network they represent for supporting students' course projects and future careers.

Course Learning Goals and Objectives

This course is designed to equip each student with the knowledge and skill sets to successfully evaluate the sustainability of urban forests through a holistic, social-ecological lens. At the end of the course, students should be able to:

1. Apply a social-ecological systems framework and relevant theory to evaluate urban forest management decisions for sustainable outcomes that contribute to resilient cities.
2. Understand the benefits (ecosystem services) and costs of urban forests and apply their valuation for management strategies.
3. Evaluate urban forests through data - street tree and urban forest inventory analysis.
4. Understand basic tree biology, morphology and taxonomy, tree planting and maintenance strategies for urban settings and apply it to urban tree inventories and management.
5. Understand the governance of urban forests (e.g. governing bodies across scales, tree law, etc.) and apply that knowledge toward sustainable governance strategies.

6. Understand the variety of actors and organizations across sectors influencing urban forest structure and evaluate their positionality in developing management strategies.
7. Understand local and regional urban forestry contacts which expand students' networks for service, internships, and career opportunities.
8. Apply general management skills (leadership, communication, planning/organizing, holistic and strategic-thinking, problem-solving, conflict management) through group work.

Course Format and Required Equipment

This course will run in person but I will do my best to also run each class on Zoom and record it, as well. Why? The pandemic has taught us that we may have to adjust quickly and often to changing circumstances (as individuals and as a class). For example, I expect that through the semester some of you may have to quarantine, some of you may have kids at home quarantining, and although I certainly hope not, some of you may need to care for friends, family, or yourself through illness. If I am in any of these circumstances, there may be occasion where we cannot meet in person but only on Zoom. So please be prepared to switch to Zoom and watch your email for notification. Otherwise, class will generally meet in the Ostrom Workshop Tocqueville Room. We have numerous field days over the course of the semester, so be prepared with appropriate dress and weather accommodations.

Readings and Canvas

Students will be expected to read a moderate amount (~2 hours / week) of scholarly and gray literature as well as popular media to prepare for weekly class discussions and activities and to undertake course assignments. There is no textbook for this course. Rather, I will supply course reading and viewing materials via Canvas. Individual readings are contained within "Modules" which are tied to individual weeks of the course schedule (see below); each week's readings should be completed prior to our Tuesday class in addition to the related Class Prep Prompts (graded reading comprehension assessments; see details below in Graded Course Assignments – Class Preparation Prompts).

Graded Course Assignments

Canvas will be used for dissemination of and submission of assignments through the "Assignments" tab in Canvas and linked from "Modules." Grades for assignments will be posted through Canvas. There are four main graded assignments for this course. These assignments are summarized below but more details, including grading rubrics, are included in Canvas Assignments.

1. Individual Class Participation (25% of overall grade) – assessed throughout semester

There are 10 Participation Assessment Activities (detailed below) across the course of the semester. Some are in-class activities, some will be out-of-class activities, and some will be completed individually, and some will be group activities. For each activity, your participation will be assessed on a simple scale of 0 to 2, where 0 = no participation, 1 = weak/moderate participation, and 2 = strong/full participation (a specific grading rubric for each will be on Canvas). At the end of the semester, full credit for participation is equivalent to a participation assessment activity score which sums to 20. Participation Assessment Activities include:

- I. UF News & Current Events (individual activity; anytime during the semester):** At the start of each class, I'll allot up to 5 minutes of class for anyone to share *course-related* news or current events. Presenters must 1) summarize the story, 2) share its connection to specific course content, and 3) provide the source.
- II. Tree Benefit/Cost Debate (group activity – assessed on 9/1):** You will read literature focused on the ecosystem services and disservices of urban trees. Your group will use the discussion board to develop notes for an in-class debate. In class, your group will defend a position using your literature notes.
- III. SES Mapping (group discussion board – assessed on 9/8):** In a group discussion board, identify an urban forest news story and then work to map the SES factors that appear to be contributing to a specified outcome.
- IV. Technical Writing Workshop (assessed in class on 9/29):** In-class activities that will allow you to practice technical writing, data visualization, graphing, etc. You will work on small groups and offer peer review to earn points.
- V. Tree ID (individual out-of-class activity + group discussion board – from 9/22, due 10/20):** Your tree ID skills will be improved through documenting your process with a few trees from the field. You will upload tree ID photos/process to a discussion board and critique your group member's work there as well.
- VI. Tree Planting (complete in October; campus tree planting date TBD):** Over the course of the semester, participate in a tree planting; document this activity in photos and through a reflection on your concerns / questions about the process and the experience.
- VII. Group Research Project Progress (group discussion board – assessed on 10/27):** A discussion board post that identifies the group's research project topic, timeline for research project completion, roles for group members.
- VIII. Tree Law Cases (group activity – assessed on 11/10):** You will be presented with a few legal cases that involve urban tree issues. Your participation in this group discussion board and class discussion will be assessed.
- IX. Redlining Map Reflection (group discussion board – assessed on 12/1):** You will individually research a specific location in a redlined city, develop a discussion post for your group, and offer feedback to your group members for assessment.

- X. Attendance in compliance with Covid policy (see attendance policy below):** You will receive 2pts for perfect attendance, 1pt for missing no more than 1 class, and no points here for missing 2 or more classes.

2. Individual Street Tree Inventory and Analysis (25% of overall grade) – Due on October 21 by midnight

The goal of this assignment is to collect and analyze street tree data like an urban forest manager. Individually, you will be responsible for inventorying at least 30 consecutive street trees on a city street segment of your choosing. You will collect each tree's location, genus, species, size and condition. You will then analyze these data to assess the sustainability of your street tree population using urban forest management benchmarks discussed in class. You will present your analysis in a short, technical report (~5-7 pages) that heavily utilizes figures and tables and references literature from the field. More details about this assignment are provided through the Canvas assignment and through in-class discussion.

3. Class Preparation Prompts (25% of overall grade) – due by Tuesday's class*

For every weekly module, you will have a set of materials – journal articles, government technical reports, news media, recorded lectures or videos, etc. – meant to prepare you for class on that week's topic. Your careful review of these materials is key to meet the course learning outcomes and for us to have time in class for critically thinking about and discussing the issue and making connections across course themes. So, to incentivize you to take time to review these materials, you will respond to a few questions in Class Preparation Prompts related to the week's material. Generally, these are assigned each week, but *there may be a few weeks without them (check Canvas Modules). Each course module is opened at least one week in advance and Class Preparation Prompts will be available on Canvas at that time and for only one week after the due date. Please pay attention to answer all components of the question(s) with no less than 100 words, no more than ~300 words.

4. Group Research Project (25% of final grade) – Due 12/6 and 12/8

We can't possibly cover all topics or any one topic in great depth over the semester, so the goal of the group research project is to allow you to explore a topic of your group's interest in greater depth and share it with your classmates. Regardless of the topic you choose, the research must be framed through a social-ecological lens, considering the interacting social, ecological and institutional factors in play. There are two products that will come from this research project – an annotated bibliography/synthesis and a research presentation to be given to your classmates. The research will be completed by both graduate and undergraduate students together. More details about this assignment and a grading rubric will be posted to Canvas and introduced in class the week of Oct. 4th. On October 20, a Participation Assessment Activity related to this research project will require that you submit a research topic, a timeline for research project completion, and roles for

group members. Final research presentation slides and annotated bibliographies are due on your groups' presentation day - 12/6 and 12/8.

Course Grades

Course grades will follow the scale:

Letter grade	Percentage	Letter grade	Percentage
A+	97-100	C+	77-79.9
A	93-96.9	C	73-76.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	67-69.9
B	83-86.9	D	63-66.9
B-	80-82.9	D-	60-62.9

Course assignment contribute to course grades in the following manner:

Assignment	% of overall grade
1. Participation (multiple assessments)	25
2. Class Preparation Responses (multiple assessments)	25
3. Street Tree Inventory Report	25
4. Group Research Project & Presentation	25
Total	100

Course Schedule and Itinerary

The schedule is subject to limited change in the event of extenuating circumstances. The likelihood of calendar adjustments is higher with more guest speakers, and we have many!

Week	Class Meeting	Topic	Assignments / Notes
1	8/23	Course introduction	Complete the prior knowledge survey on Canvas
	8/25	Defining urban forests, history of urban forests and current trends in land use	
2	8/30	Benefits/Costs of urban forests	Participation assessment: Tree Planting Campaign debate
	9/1	Benefits/Costs of urban forests	
3	9/6	Sustainable and Resilient Urban Forests	Participation assessment: Urban Forest SES maps
	9/8	Sustainable and Resilient Urban Forests	

4	9/13	Monitoring data: Top-down / Bottom-up overview	
	9/15	Monitoring data: Top-down	Guest speakers: Hannah Gregory, ERI researcher and Canopy director
5	9/20	Monitoring data: Bottom-up	Guest speakers: Hannah Gregory, ERI researcher and Canopy director
	9/22	Monitoring data: Bottom-up	Assignment introduction: <i>Street Tree Inventory Exercise</i> and related Participation assessment: Group Tree ID (introduced; not due until 10/20)
6	9/27	Tree biology, morphology, and taxonomy	
	9/29	Tree biology, morphology, and taxonomy AND Technical Writing Workshop	Participation assessment: Technical Writing Workshop (in class)
7	10/4	Tree planting, planted tree inventories, survival, growth	Participation assessment opportunity: Tree Planting
	10/6	Tree planting, planted tree inventories, survival, growth and	Assignment introduction: <i>Group Research Project</i>
8	10/11	Tree care and management	Guest speakers / Field-days: Local arborists
	10/13	Tree care and management	
9	10/18	Tree care industry	Guest speakers / Field-day: Davey Resource Group + Networking Lunch
	10/20	Tree care industry	Participation assessment: Group Tree ID (Due by class this date) Due by COB on 10/21: <i>Street Tree Inventory Exercise Report</i>
10	10/25	Climate change and threats to the UF	
	10/27	Climate change and threats to the UF	Participation assessment: Group Research Project Progress
11	11/1	Governance: National/state/local actors in urban forest management	Guest speaker: Burney Fischer, O'Neill Clinical Professor Emeritus
	11/3	Governance: Municipal urban forestry and municipal institutions	Guest speaker: Bill Kincius, Indianapolis urban forester
12	11/8	Tree law: Plans, reports, ordinances, legal cases	Guest speakers: Jonathan Rosenbloom, Professor of Law, Executive Director, Sustainable Development Code
	11/10	Tree law: Plans, reports, ordinances, legal cases	Participation assessment: Group discussion of legal cases

13	11/15	Communities and trees 1: Urban tree planting and conservation campaigns	
	11/17	Communities and trees 1: Urban tree planting and conservation campaigns	Guest speakers: KIB Community Forestry / Indiana Forest Alliance staff
14	11/29	Communities and trees 2: Equity and justice	
	12/1	Communities and trees 2: Equity and justice	Participation assessment: Redlining mapping
15	12/6	Final group presentations	Due: Group Research Presentations
	12/8	Final group presentations	Due: Group Research Presentation

Course Policies

Syllabus / Canvas / Communication

You are required to read and understand this syllabus as well as the online course management tool, Canvas. If you do not understand something within the syllabus or on Canvas, you must speak with the instructor to gain an understanding as these are the media through which course material and assignments are communicated.

In terms of communication between instructors and students, I am always approachable; if you have any concern, question, or problem regarding the course, please see me. I welcome anything you would like to share regarding the course. To verify the identity of all parties involved, all email communication must originate from an IU email account.

Online Course Materials: The faculty member teaching this course holds the exclusive right to distribute, modify, post, and reproduce course materials, including all written materials, study guides, lectures, assignments, exercises, and exams. While you are permitted to take notes on the online materials and lectures posted for this course for your personal use, you are not permitted to re-post in another forum, distribute, or reproduce content from this course without the express written permission of the faculty member. Any violation of this course rule will be reported to the appropriate university offices and officials, including to the Dean of Students as academic misconduct.

Attendance Policy

I do not have an attendance policy, per say. Attendance, **counted as attending in person OR via Zoom (per caveats below)**, will be recorded to earn points toward your individual participation grade. Acceptable reasons to attend class by Zoom include illness or professional travel. If you need to attend class by Zoom, **to be counted as attending you**

must have communicated the reason to the TA and Instructor prior to class and you must have your camera on for the entire class period. This approach is designed to ensure that you largely attend class in person; that on the rare occasions you must attend via Zoom, you are engaged; and so you can comply with the following policy:

If you have 1) a positive COVID-19 test, 2) have COVID-like symptoms, 3) have been instructed to quarantine or have reasonable suspicion you should quarantine you should not attend class in person. Instead, you may attend class virtually via Zoom.

Academic Policies and Academic Integrity

You are expected to adhere to academic integrity. Via the syllabus and Canvas, you are expected to understand all policies and dates of submission for all assignments. Late assignments will be accepted for up to one week after the due date, but your grade will be reduced, generally by 10% per day late if not otherwise specified.

Academic dishonesty: I will not tolerate cheating, plagiarism, or any other form of academic dishonesty or misconduct. If you have not done so, you should read the *IUB Code of Student Rights, Responsibilities, and Conduct*, which can be accessed at <http://www.iu.edu/~code> so you will be sure to understand what these terms mean and what penalties can be issued for academic dishonesty. Academic dishonesty can result in a grade of F for the class (an F for academic dishonesty cannot be removed from the transcript). Significant violations of the Code can result in expulsion from the University.

Plagiarism is using another person's words, ideas, artistic creations, or other intellectual property without giving proper credit. According to the *Code of Student Rights, Responsibilities, and Conduct*, a student must give credit to the work of another person when he/she does any of the following:

- a. Quotes another person's actual words, either oral or written;
- b. Paraphrases another person's words, either oral or written;
- c. Uses another person's idea, opinion, or theory; or
- d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

Note Selling Several commercial services have approached students regarding selling class notes/study guides to their classmates. Selling the instructor's notes/study guides in this course is not permitted. Violations of this policy will be reported to the Dean of Students as academic misconduct (violation of course rules). Sanctions for academic misconduct may include a failing grade on the assignment for which the notes/study guides are being sold, a reduction in your final course grade, or a failing grade in the course, among other possibilities. Additionally, you should know that selling a faculty member's notes/study guides individually or on behalf of one of these services using IU email, or via Canvas may

also constitute a violation of IU information technology and IU intellectual property policies; additional consequences may result.

Behavioral Policies

O’Neill School expectations of civility and professional conduct¹

The O’Neill School takes matters of honesty and integrity seriously because O’Neill is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because O’Neill graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

O’Neill requires that all members of its community – students, faculty, and staff – treat others with an attitude of mutual respect both in the classroom and during all academic and nonacademic activities outside the classroom. A student is expected to show respect through behavior that promotes conditions in which all students can learn without interruption or distraction. These behaviors foster an appropriate atmosphere inside and outside the classroom:

- Students are expected to *attend class regularly*² and to be prepared for class.
- Students must be punctual in their arrival to class and be present and attentive for the duration of the class. Eating, sleeping, reading the newspaper, doing work for another class, wandering in and out of the classroom, and packing up or leaving class early are not civil or professional behaviors.
- Students must abide by the course policy regarding use of electronic devices in the classroom.
- Students must responsibly participate in class activities and during team meetings.
- Students must address faculty members, other students, and others appropriately and with respect, whether in person, in writing, or in electronic communications.
- Students must show tolerance and respect for diverse nationalities, religions, races, sexual orientations, and physical abilities.
- Students must not destroy or deface classroom property nor leave litter in the classroom.

Additional information for students

Counseling and Psychological Services

¹ These expectations are excerpted from the O’Neill School Honor Code.

² In compliance with this courses’ Attendance Policy regarding Covid, Covid symptoms, Covid-related quarantine.

For information about services offered to students by CAPS:
<http://healthcenter.indiana.edu/counseling/index.shtml>.

Religious Observation

In accordance with the Office of the Dean of Faculties, any student who wishes to receive an excused absence from class must submit a request form available from the Dean of Faculties for each day to be absent. This form must be presented to the course instructor by the end of the second week of this semester. A separate form must be submitted for each day. The instructor will fill in the bottom section of the form and then return the original to the student. Information about the policy on religious observation can be found at the following website: <https://policies.iu.edu/policies/aca-59-accommodation-religious-observances/index.html>.

Disability Services for Students

Securing accommodations for a student with disabilities is a responsibility shared by the student, the instructor and the DSS Office. For information about support services or accommodations available to students with disabilities, and for the procedures to be followed by students and instructors: <https://studentaffairs.indiana.edu/student-support/disability-services/index.html>

Sexual Harassment

As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help.

If you are seeking help and would like to talk to someone confidentially, you can make an appointment with:

- i. The Sexual Assault Crisis Service (SACS) at 812-855-8900
- ii. Counseling and Psychological Services (CAPS) at 812-855-5711
- iii. Confidential Victim Advocates (CVA) at 812-856-2469
- iv. IU Health Center at 812-855-4011

For more information about available resources:

<http://stopsexualviolence.iu.edu/help/index.html>. It is also important to know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus' Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed. Protecting a student's privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist. I encourage you to visit <http://stopsexualviolence.iu.edu/help/index.html> to learn more.

Celebrate diversity at IU! Learn and get involved here:

Asian Culture Center

Address: 807 East Tenth Street, Bloomington, IN 47408

Phone: 812-856-5361

Email: acc@indiana.edu

Website: <https://asianresource.indiana.edu/index.html>

First Nations Educational & Cultural Center

Address: 712 E 8th St., Bloomington, IN 47408

Phone: 812-855-4814

Email: fnecc@indiana.edu

Website: <https://firstnations.indiana.edu/contact/index.html>

LGBTQ+ Culture Center

Address: 705 E 7th St., Bloomington, Indiana 47408

Phone: 812-855-4252

Email: glbtserv@indiana.edu

Website: <https://lgbtq.indiana.edu/contact/index.html>

La Casa Latino Culture Center

Address: 715 E 7th St., Bloomington IN, 47408

Phone: 812-855-0174

Email: lacasa@indiana.edu

Website: <https://lacasa.indiana.edu/>

Neal Marshall Black Culture Center

Address: 275 N Jordan Ave Bloomington, Indiana 47405

Phone: 812-855-9271

Email: nmgrad@indiana.edu

Website: <https://blackculture.indiana.edu/index.html>