

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

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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. 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. 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 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 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 and instructor-offered lectures, peer-to-peer / group activities, classroom and field exercises, and importantly, guest presentations. Numerous guests who are significant players in urban forestry in Indiana will join us over the course of the semester. Students should go out of their way to engage these professionals 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, tree species identification, tree planting and maintenance strategies for urban settings and apply it in inventorying urban trees.
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 their network for service, internships, and career opportunities.

Readings and Canvas

There is no textbook for this course. Rather, I will supply course reading material via Canvas. Readings will be uploaded to "Files" in Canvas and linked from thematic "Modules" which are generally tied to one individual week of the course schedule (see below). Canvas will also generally be used for dissemination of and submission of assignments through the "Assignments" tab in Canvas and linked from "Modules." Grades for individual assignments will be posted through Canvas; do not trust the "overall" grade assigned through Canvas, however, as assignments are weighted as described below under "Course Grades."

Graded Course Assignments

1. Class participation

Class participation is vital to learning in this class because much of it is experiential in nature. As a result, participation is a significant portion of the grade. The points received are an assessment of your engagement including the expectation that you will attend all classes and course excursions and, while present, actively engage by being on time and prepared, completing ungraded classroom exercises as they arise, staying focused on classroom activity (as opposed to phone/laptop), asking questions and offering informed observations that contribute to the collective good,

and contributing fully and collaboratively to group work. You cannot receive participation credit for classes that you do not attend.

Students will be evaluated on a (nearly) daily basis in the following manner: 2 = strong participation; 1 = weak participation, 0 = no participation. Participation grades will be averaged for a final grade. See Grading Rubric in the Appendix of the syllabus.

2. Individual discussion questions

In an effort to support your classroom participation and ensure that you engage with your assigned reading to support your learning and assignments, you will write at least two and no more than three discussion questions regarding the readings for each week/theme. These questions are due no later than **noon on Monday each week**. LATE QUESTIONS ARE NOT ACCEPTED. I absolutely encourage you to bring in outside examples/video clips or make connections to readings and theories from other classes to expand our horizons. Just be sure you can briefly explain any outside material so we can engage with your question should it come up in class.

Your questions will be graded on their ability to stimulate thoughtful discussion and meaningful connections to other course material and to other areas of research and practice, on a 1-3 point scale. A 3 point question is one that requires deep analysis or synthesis, a 2-point question is one that is more application based, extending the ideas as they are to other areas such as education or practice, and a 1-point question is one that is merely factual in nature or confirms comprehension. Each day's set of 3 questions is worth up to 5 points total, so while you need not hit a home-run with every question, you need to have at least one outstanding or two very good questions in the mix to get full credit. See Grading Rubric in the Appendix of the syllabus.

3. Team short reports

During the semester, you will be asked to produce two short reports in teams. These reports will include:

- A report comparing the three different sets of urban forestry monitoring data
- A neighborhood street tree re-inventory report

Short reports are about ~5 pages in length and require students to work together to collect primary data and/or analyze secondary data and synthesize these data in the context of course concepts to draw conclusions. Each short report assignment and rubric will be given to you with greater detail later in the semester.

4. Midterm exam

To assist in you in keeping up with the course, you will be given a midterm exam that will assess your comprehension of the course content to date. The exam format will combine short answer, multiple choice and essay questions.

5. Final team project: Neighborhood urban forest assessment

Small student teams will work with the instructor to choose a neighborhood within Bloomington for which they will produce an urban forest management report as a final team project constituting 25% of the final grade. A more detailed assignment and grading rubric will be offered later in the semester. Generally, teams will either work in a neighborhood association within the City of Bloomington, or in a “neighborhood” on campus to assess the social-ecological sustainability of a neighborhood urban forest in order to make recommendations for its management. Neighborhood tree inventory data and canopy cover data will be made available to students. Beyond this, students will be expected to collect additional data about the neighborhood in order to provide a holistic, social-ecological systems assessment. The form of the assignment’s products include a brief report (due at the end of the semester) and an oral presentation of that report to be given on one of the final two days of the class.

6. Service learning / Extension (required for graduate students only)

Extending oneself to work tasks outside of our course assignments is an opportunity for service learning – effort that allows you to apply and contextualize the knowledge gained in the classroom as well as to learn from those outside the classroom in the real-world practice of urban forest management. Graduate students are required to choose and engage in a service activity for throughout the semester in teams. Generally, per service activity, student teams will develop a scope of work with community partner, fulfill that scope of work, and report back to the class on their efforts. Possible service activities are listed below and more details about each will be provided in class. Students will be required to choose a service activity by the 3rd week of classes.

- City of Bloomington Tree Commission - rewrite plan / edit tree care manual
- IU Tree Board & Sustain IU Environmental Quality and Land Use Working Group - evaluate new tree inventory data
- Environmental Resilience Institute’s Urban Green Infrastructure Research Group – engage in research tasks
- Others TBD

See Grading Rubric in the Appendix of the syllabus.

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 (undergraduates)	% of overall grade (graduates)
1. Individual class participation	15	10
2. Individual discussion questions	15	10
3. Short team reports	25	25
4. Midterm	20	20
5. Final team report and presentation	25	25
6. Service learning / extension	0	10
Total	100	100

Course Schedule and Itinerary

The following course schedule is VERY susceptible to change. Much of the course is field-based and weather may require scheduling adjustments. Additionally, the likelihood of calendar adjustments is higher with more guest speakers, and we have many!

Class Meeting	Topic	Due dates* / Notes
8/27	Course introduction	
8/29	Defining urban forests, history of urban forests and current trends in land use	
9/3	Sustainable Urban Forests: Frameworks for sustainability	
9/5	Sustainable Urban Forests: Outcome metrics	

9/10	Benefits/Costs of urban forests: Literature review	Grad students only for last 15 minutes of class
9/12	Benefits/Costs of urban forests: Valuation	Handout Team Short Report assignment #1
9/17 *Evening activity	Monitoring data: KIB and Urban Tree Canopy, Planted Tree Inventory <i>Guest speaker: Karl Selm, Keep Indianapolis Beautiful</i> *7pm State of Bloomington's Urban Forest presentation at Bloomington City Council Chambers	
9/19	Monitoring data: IU's Woodland Campus – Tree inventory <i>Guest speakers: IU Landscape Managers, Sustain IU staff</i>	
9/24	Debrief on <i>Monitoring data</i> sessions Tree planting primer	Due: Team Short Report #1
9/26 *in field	Tree planting with City of Bloomington <i>Guest speaker: Lee Huss, Bloomington Urban Forester</i>	
10/1	Tree biology & Tree ID (tree planting rain date)	
10/3	Tree biology & Tree ID	
10/8	Tree care and management	
10/10	Tree care and management <i>Guest speaker: Lindsey Purcell, Urban Forestry Extension Specialist, Purdue University</i>	
10/15	Catch-up and review for exam	
10/17	Mid-term exam	
10/22 *in field	Tree inventory training	Handout Team Short Report assignment #2
10/24 *in field	Tree inventory exercise	
10/29	Planted tree survival, growth and i-Tree	
10/31 *in field	Tree care industry <i>Guest speakers from Davey Resource Group</i>	Due: Team Short Report #2
11/5	Tree care industry	Handout Final Team Report and Assignment
11/7	National/State/Local players in urban forestry	

	<i>Guest speaker: Dr. Burney Fischer</i>	
11/12	Municipal urban forestry <i>Guest speaker: Bill Kiniscius, Indianapolis Urban Forester</i>	
11/14	Tree law: Plans, reports, ordinances	
11/19	Tree law: The nature of the good, legal cases	
11/21	Communities and trees <i>Possible guest presentation by Carrie Tauscher, DNR CUF Coordinator</i>	
12/3	Communities and trees: Tree planting programs <i>Guest speakers: KIB Community Forestry staff</i>	
12/5	Communities and trees / Group work session with instructor	
12/10	Final group presentations	Due: Final Team Presentation / Reports
12/12	Final group presentations	Due: Final Team Presentation / Reports

Course Policies

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 medium 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. In order to verify the identity of all parties involved, all email communication must originate from an Indiana University email account.

Behavioral policies of course:

You are expected to function as a civil* person during any activity associated with this class. Should you behave otherwise, I reserve the right to ask you to leave my classroom and cease participation in any outside activities associated with my class. Such outcomes will result in loss of participation points for at least the day of concern and potentially for associated assignments.

***Civility:** Civility is important in an academic community to ensure that all parties—students, staff, and faculty—are working in an environment that fosters achievement of the individual’s and community’s goals and objectives. Civility requires all parties to demonstrate personal integrity and conduct themselves in a manner that shows respect, courtesy and tolerance to others. Examples of discourteous behaviors during class include and all phone activity, laptop activity that does not contribute to the course, talking or laughing with others during presentations/instructions, chronically arriving late, etc. These behaviors are distracting to the instructor and classmates, and we will address these problems as they arise. Pursuant to the Indiana University Student Code of Conduct, disorderly conduct which interferes with teaching, research, administration, or other university or university-authorized activity will not be tolerated and will be immediately reported to the Office of The Dean of Students for appropriate disposition which may result in disciplinary action including possible suspension and/or expulsion from the university.

Academic Policies:

Again, you are required to read the syllabus and understand all policies and dates of submission for all assignments. There will be no extra-credit assignments. **All late assignments will be penalized (-25%) each day they are late.**

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/code/index.shtml> 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.

Important Indiana University Policies

Students with Learning Disabilities

Students with a learning disability, hearing impairment, speech impairment, or any other

disability that may affect their ability to fulfill a requirement of the College should contact the Disability Services for Students in Franklin Hall 096, (812) 855-7578, prior to registering. Requirements will not be waived for students with disabilities; however, some modifications may be made within specific courses.

Religious Holidays

To ensure freedom of religious observance throughout our increasingly diverse population, a set of Calendar Principles were approved by the Bloomington Faculty Council, including a Religious Holidays Policy. This policy requires instructors to make reasonable accommodation when a student must miss an exam or other academic exercise because of a required religious observance. Under IU policy, students are required to request accommodation for religious observance before, not after, it occurs. Students are not required to supply evidence of their attendance at the religious services or events in order to qualify for any accommodation granted to them.

Appendix: Rubrics

(For Participation, Discussion questions, and Service-Learning; other rubrics will be appended to assignment as they are given throughout the semester).

Assignment: Participation

Class participation is vital to learning in this class because much of it is experiential in nature. As a result, participation is a significant portion of the grade. The points received are an assessment of your engagement including the expectation that you will attend all classes and course excursions and, while present, actively engage by being on time and prepared, completing ungraded classroom exercises as they arise, staying focused on classroom activity (as opposed to phone/laptop), asking questions and offering informed observations that contribute to the collective good, and contributing fully and collaboratively to group work. You cannot receive participation credit for classes that you do not attend.

Assessment Rubric – Participation			
	Strong participation (2pts)	Weak participation (1pt)	No participation (0pts)
	Student is on time and demonstrably prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.	Student falls short on any <u>one</u> of the following: on time and demonstrably prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.	Student falls short on more than one of the following (or is absent): on time and demonstrably prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.

Assignment: Individual discussion questions

In an effort to support your classroom participation and ensure that you engage with your assigned reading to support your learning and assignments, you will write at least two but no more than three discussion questions regarding the readings for each week/theme.

These questions are due no later than **noon on Monday each week for the topics to be address that Tuesday and Thursday**. LATE QUESTIONS ARE NOT ACCEPTED. I absolutely encourage you to bring in outside examples/video clips or make connections to readings and theories from other classes to expand our horizons. Just be sure you can briefly explain any outside material so we can engage with your question should it come up in class. Your questions will be graded on their ability to stimulate thoughtful discussion and meaningful connections to other course material and to other areas of research and practice, on a 1-3 point scale (see rubric below). Each set of 3 questions is worth up to 5 points total, so while you need not hit a home-run with every question, you need to have at least one outstanding or two very good questions in the mix to get full credit. While you will provide questions each week, only seven of your question sets will be graded at random.

Example of a 1-pt question: *What proportion of canopy cover is recommended for East-coast and Midwestern cities in the US? How and why does it differ in the West?*

Example of 2-pt question: *Compare and contrast Ostrom's Social-Ecological Systems Framework to Clark's Model for Urban Forest Sustainability. How might an urban forest manager operationalize either?*

Example of a 3-pt question: *Divide yourselves into 3 groups: Renters, Landlords, and Urban Forest Managers. Imagine that you all live within a city where increasing the equity in canopy cover is a key goal. A targeted block of the city in a low-income neighborhood has only a couple private backyard trees and no street trees – almost no canopy cover. Urban Forest Managers want to plant street trees there but plan to do so without involvement of the residents. Landlords are mixed in their opinions; some agree with UF Managers that street trees would be a benefit while others are frustrated with the expectation of future costs. Most renters are opposed. Consider the position of your group. In theory, what are reasons that your group may hold their position? Take a few minutes to conduct online research – can you find anecdotal or empirical evidence supporting your position or the position of the other groups involved?*

Assessment Rubric – Individual discussion questions

	Strong question (3pts)	Moderate effort (2pts)	Weak effort (1pts)
	Question requires deep analysis or synthesis. Draws students into research, data collection and analysis. Requires evaluation or creation.	Application-based question which simply extends the course content (e.g. to practice or education). Requires application of facts.	A question that is merely factual in nature or confirms comprehension; requires understanding / recall.

Assignment: Service Learning / Extension (required for graduate students)

Extending oneself to work tasks outside of our course assignments is an opportunity for service learning – effort that allows you to apply and contextualize the knowledge gained in the classroom as well as to learn from those outside the classroom in the real-world practice of urban forest management. Graduate students are required to choose and engage in a service activity for throughout the semester in teams. Generally, per service activity, student teams will develop a scope of work with community partner, fulfill that scope of work, and report back to the class on their efforts. Possible service activities are listed below and more details about each will be provided in class. Students will be required to choose a service activity by the 3rd week of classes.

- City of Bloomington Tree Commission - rewrite plan / edit tree care manual
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- Others TBD

Grades will be assessed based on the following rubric.

Assessment Rubric – Service Learning / Extension		
	Students meet or exceed expectations (1 pt)	Students do not meet expectations (0 pts)
Development of scope of work	Develops a complete scope of work with service partner. Complete SOW should be about one page and describe the needs of the service partner, the specific goal(s) of the students involved, the timeline of the project including expected meeting dates, communications/check points on progress, final product/outcome format, and due date. Complete SOW should be approved by students, partners and instructor. Should adjustments need to be made to SOW, all parties agree to changes through SOW edits.	Fails to develop a complete scope of work. Incomplete SOWs fail to address one or more of the components.
Fulfillment of scope of work	Fulfills scope of work (original or adjusted) with service partner. SOW-defined goals are met with quality work (error-free, in agreed upon format) in a timely manner (by due date) through the agreed upon process of meetings, check points and communications.	Fails to fulfill scope of work. Students do not fulfill scope of work by failing to meet any one or more of the components.
Presentation of work to class	Once service is completed, students schedule a 5-10 minute presentation about their service for the class. These presentations can occur at any point in the semester and should include: SOW overview, methods for the service, final product/outcome, and linkages to course content.	Fails to fulfill presentation as outlined.