

E522 Urban Forest Management – Syllabus (Info, Operating Procedures & Rules), Sp 17, 3cr, 1-4-17

Meeting Schedule and Location:

TTH 11:15-12:30pm, **Rm 111 Psychology > A221 SPEA O'Neill Graduate Center (TBD Shortly)**

Exams: Midterm

Burnell “Burney” C. Fischer, Ph.D., CF, Clinical Professor Emeritus, IUB SPEA
Senior Research Fellow & Affiliated Faculty (formerly Co-Director/Interim Director) Ostrom Workshop
Building #3, Ostrom Workshop, 513 N. Park Ave (note: I do not have an office at SPEA)
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Burney is in his 12th year at IUB. He was previously State Forester/Director, IDNR Division of Forestry (1990-2005), Professor/Extension Forester at Purdue University (1977-97) and Assistant Professor at UMass (1974-77). For the past 11 years he has taught E422/E522 Urban Forest Management (UFM). The course increased in size from 18 the first semester offered to now 40/year. UFM course graduates in both internships and full-time positions in urban forestry/ecology related employment. In 2014 UFM was split into separate undergraduate and graduate sections for a one-time experience. E555 Urban Ecology was initiated in fall 2010 per the request of master's students taking UFM in spring 2010 and offered again in spring 2012, 2014-15-16. Urban Ecology is being offered again in spring 2017.

Dr. Fischer has been active in urban forestry at local, state and national levels for the past 25+ years. He is Past President of the Indiana Urban Forest Council, serves on the Arbor Day Foundation's Tree Campus USA Advisory Committee and has been a board member of the national Alliance for Community Trees (ACTrees) and Keep Indianapolis Beautiful (KIB). He served on the Lafayette IN Tree Commission as chair (2001-04), the Bloomington Tree Commission (2006-10) and the IUB Campus Tree Committee (2008-14). Professor Fischer is active in urban forestry research and service at IUB and with the City of Bloomington by providing leadership in a variety of initiatives including tree inventories, IUB Tree Campus USA designation and securing urban forestry research/service/teaching grants. He is lead PI for the Bloomington Urban Forestry Research Group (BUFRG) at the Center for the study of Population, Institutions and Environmental Change (CIPEC) at the Ostrom Workshop. He received the 2013 Frederick Law Olmsted Award from the Arbor Day Foundation, which recognizes an outstanding individual who has had a positive impact on the environment due to their lifelong commitment to tree planting and conservation at a state or regional level. The following story highlights his award http://www.indiana.edu/~spea/news/burney_arbor.shtml. In 2014 the Indiana Urban Forest Council recognized him with their Outstanding Lifetime Achievement Award in promoting the principles of urban forestry in Indiana.

Secretary:

Jennifer Mitchner jmitchne@indiana.edu

Teaching Assistant:

Donovan Moxley DMOXLEY@IUPUI.EDU

Office Hours:

I will be available most TTH's 12:30-1:30pm at the SPEA Atrium; individual meetings can be scheduled via email

Prospectus:

The discipline of urban forest management includes planning for and managing the trees, forests, and greenspaces in communities, in order to provide ecological, economic, and social benefits to all residents. Trees and related vegetation have long been protected and planted in cities and towns for a variety of reasons. Recently, urban forestry has expanded to be a lead focus in the broader arena of urban ecology and urban ecosystem management with a clear goal of creating sustainable ecosystems. This course will look at urban forests through the lens of social-ecological systems (SESs) of linked human and natural components, with a focus on the basic knowledge and skills of urban forestry. We will utilize the talents of a number of guest speakers who are professionals in urban forestry to give students a practical, real world introduction to the subject. The IU-Bloomington campus and the City of Bloomington will serve as our field laboratory to view an actively managed urban forest.

Course Objective & Teaching Strategy:

By the end of the semester you will be a knowledgeable resident of the urban forest. Through a combination of readings in the urban forestry literature, discussion with experts in the field and selected field exercises, we will learn to apply the principles of urban forest management to real world cases.

Our UFM course is organized around two teaching approaches – topics and themes. Each week we will cover a topic: Introduction to urban forests and urban forestry, Sustainable Urban Forests as Social-Ecological Systems (SES's), Understanding UTC Analysis, Benefits/costs of trees, Players in urban forestry, Municipal urban forestry & tree law, Tree planting/canopy campaigns, Measuring the urban forest, Tree biology, Tree care/management, Tree planting, The green industry. Coverage of these topics will give each student a solid understanding of the urban forest and how it is managed. Overarching these topics will be a set of themes: Sustainability, Defining the urban forest, Governance of urban natural resources, Rules-of-Thumb & Do-the-Math, What's in the News, Tree biology and urban forest ecology – what are the trees/forest telling us, and Urban forestry for the City-are we talking about In, Of &/or for the city and Inherit trees from our Ancestors and Grow for our Children.. We will revisit on a weekly basis to identify which we have touched upon and assess our progress. A brief explanation of each theme will be explained in a handout during the first week of class.

Learning Outcomes: (subject to some modifications as the course develops):

- Develop an understanding of the benefits and costs of street trees and urban forests to municipal regions/cities/towns
- Become familiar with the concept of cities as urban SESs and the roles of trees and urban forests
- Develop a familiarity with urban governance systems (including local, state and national) and their impact on the urban forest and how it is managed
- Acquire a working knowledge of urban tree biology and street tree planting and maintenance strategies
- Develop skills in street tree and urban forest inventory and analysis
- Acquire an understanding of sustainability as it pertains to urban forests and urban forestry programs in metropolitan regions, cities, towns, communities and neighborhoods
- Engage in a practical urban forest case study project, culminating in a team presentation.

Course Format & Style:

This is an elective course and it is assumed that enrolled students are interested in learning about and discussing the topic of urban forest management. The course will consist of 2-75 minute class meetings per week, which will be a combination of lecture, much class discussion, field experiences, etc. There will be ~6 guest speakers. Most will be practitioners who will give us a real world connection. *Note: Some guest speakers are employers who have hired SPEA urban forestry students.*

Readings, Materials & Canvas

There is no assigned textbook. The instructor will provide handouts as well as post readings on Canvas in Weekly Readings Folders (Week 1-15). Note: Instructor's third Canvas experience, so I'm getting more proficient! It is expected that reading assignments will be read and that students will be knowledgeable of the material. Questions from readings should be brought to class or emailed to the instructor before class. The Instructor can always be contacted via email. Regarding Canvas – We will utilize the following functions:

Announcements – general course updates, course flyer-syllabus-course calendar (topics, reading, homework assignments), employment opportunities, etc., periodically posted.

Assignments – Weekly folders of reading assignments, PPT's used in class, etc.; Separate folders on special topics and Discussion Paper (Homework) Assignments are also posted.

Chat Room – any questions for the instructor outside of class can be posted on this public section. I will review daily and respond to questions in the Chat Room. It is important that course policies and content questions be posted by Mon/Wed evening so they can be addressed during class the next morning. Note: the Chat Room is open site for all course registrants.

Grade Book – all homework assignments, classroom attendance and participation, case study and research paper, and exam grades will be promptly posted for your review.

Homework Assignments:

All written assignments should be typed in the following format: Times New Roman 11-12 font, last name, first name and topic on the top line of the first page, double-spaced and one-inch margins all around. Use appropriate footnotes, charts, tables, graphics, illustrations and citations as needed.

Assignments will be given a page/word limit. The instructor will lower grades on assignments beyond the limit. Assignments should be concise, organized and when necessary appropriately supported with relevant literature. Always cite everything you quote directly or paraphrase. Use in-text citations whenever you quote or paraphrase.

Assignments are to be submitted on the specified due date. Late assignments will be accepted with a penalty of -33.3%/day, unless we have agreed in advance to an alternative. Genuine emergencies where proper documentation is provided may result in the acceptance of a late assignment with a different grade adjustment. If you anticipate a serious conflict that prevents you from completing an assignment, please email the instructor beforehand.

Discussion Papers - There are series of discussion papers required of each student during the semester, mostly before spring break. These are described within the Course Schedule. The basic idea for a discussion paper is to briefly summarize the main ideas of a topic or readings or field experiences, tie them together, critically explore the subject to demonstrate your understanding and relate the subject to the broader course context.

Case Study – A team project will be described in a handout later in the course. The team projects will be either a project for the City of Bloomington, a 'neighborhood' on the IUB Campus or in Bloomington, or something else.

Research Paper and Presentation – Each student will select a topic in consultation with the instructor to write a research paper. A title and pre-proposal (250 words) defining the research question(s) and your plan to address it are due to the instructor by COB Friday, February 19. The research paper can be biologically, policy or SES based. The topic must broadly be within the framework of the urban forest ecosystem. The paper can be based upon a literature review or focused on real data. We have access to datasets/sources to suggest but students are free to locate others. The text of the paper is limited to 10-15 pages and should include all necessary citations, etc. Additional pages for appendices – tables, figures, etc., are allowed. Each student will

schedule a ½ hour meeting with the instructor during March to review progress. Final submission date is COB, Friday, April 8. Each student will give a brief 5 minute PowerPoint presentation on the results of the research paper during weeks 14-15, 125 points (100pts paper & 25pts presentation).

Class Professionalism Policy¹:

Students are expected to act in a professional manner. Excessive violations of professionalism will result in a significant reduction in the participation portion of the grade for the course, which will lower your grade. Violations of professionalism include, but are not limited to the following:

- Activated cell phones or ipods – they should be stored away during class
- Reading the newspaper or sleeping during class
- Arriving late for class or leaving class early (unless agreed upon by instructor beforehand)
- Accessing email or surfing the web during class; quietly taking notes with a computer is acceptable
- Working on material for another course during class
- Exhibiting disrespect for the instructor or classmates
- Disruptive behavior – e.g. carrying on conversations or being excessively noisy
- Engaging in any activity that prevents you from fully participating in the class
- The class period is 75 minutes long. Be prepared to stay for the whole session. Please leave the classroom if you must engage in anything other than class activities and return for the next class period when you can fully participate.

¹Adapted from Murphy, S. 2006. Surfing in Class, A New Temptation. The ISS Newsletter (July 2006), p 4-5.

Attendance & Classroom Participation:

Informed attendance is required for participation in class discussion. Each student is held responsible for all material presented in class and all assigned readings. Lectures are to emphasize important topics, answer questions, and provide information from recent research, etc. It is expected that students will attend all classes. Arrangements should be made with a classmate to take notes and obtain copies of handouts when absence is unavoidable.

Attendance and classroom participation during class meetings is necessary to excel in this course. I will record attendance. Each lecture attended is worth 2pts and will be posted monthly. The instructor will also assign a periodic classroom participation grade (~115 pts available for the semester). A special note about classroom participation: I have found SPEA students to be great “listeners” but not so great classroom participants. There are of course exceptions to both generalizations. I will encourage students to be classroom discussion leaders as well as to interact with guest speakers. Quality classroom participation is expected and will impact your participation grade.

Exams, Grading, etc:

A necessary evil is that we will have a mid-term exam, homework will be graded, a case study and research paper will be evaluated, participation will be assessed weekly and at the end of the course each student will receive a final grade. There will be no quizzes in this course. The 1st day pretest is a good example of mid-term exam questions. To quote a fellow instructor “life may be a multiple choice test, but you will never have a multiple-choice conversation, give a multiple-choice speech, or author a multiple-choice memo or report. Employers are desperate for people who can communicate clearly and concisely. Essay questions are the academic version of communicating clearly and concisely. Think of essay answers as really short informational memos.” The mid-term will be closed book with material drawn from lectures, assigned readings and homework assignments.

All homework assignments count. There are no make-ups and extra credit is not available.

My expectation for the distribution of points during the semester is as follows (could be modified slightly):

Participation (attendance & class participation)	175 points
Discussion papers	100 points
Research paper	125 points
Case Study	100 points
Mid-term Exam	100 points
Total	600 points

The semester grading scale is 92-100% = A, 82-92% = B, 72-82% = C, 62-72% = D & <62 = F. The instructor reserves the right to adjust this scale downward for variability in testing/grading.

Other Policies & Information

Indiana University Code of Student Rights, Responsibilities, and Conduct:

Available online: <http://www.iu.edu/~code/code/index.shtml>. Portions are cut and pasted below.

Indiana University/SPEA Academic Policies:

Available online: http://www.indiana.edu/~spea/about_spea/SPEA%20Policies%20.shtml. Portions are cut and pasted below.

Academic Dishonesty

SPEA faculty do not tolerate cheating, plagiarism, or any other form of academic dishonesty. 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.

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 individuals 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 reading the newspaper, listening to headphones, talking or laughing with others, chronically arriving late, and so forth. These behaviors are distracting to the instructor and classmates, and SPEA faculty will address these problems as they arise. Maintaining and fostering civility inside and outside the classroom is especially important to SPEA, which is a professional school.

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.

Communication between Faculty and Students

In order to verify the identity of all parties involved, effective September 1, 2004, all email communication from current SPEA students to SPEA staff must originate from an Indiana University email account. For email communication with SPEA faculty, current SPEA students should refer to course syllabi for instructors' preferences (Canvas, Webmail, etc.). This policy applies to current students only. Instructions for forwarding your IUB email to another account can be found at: <http://kb.indiana.edu/data/beoj.html?cust=687481.87815.30>

Course Withdrawals

Students who stop attending class without properly withdrawing from the class may receive a grade of F. It is important to withdraw from a course within specified timeframes (see chart below). Note that withdrawals after Week 12 of a regular session or Week 4 of a summer session are rarely granted. **Poor performance in a course is not grounds for a late withdrawal.**

E422/E522 UFM, Sp 2017 – Syllabus Part 2 - Course Calendar – 1-5-17

Topics, Readings & Homework - Highlighted items are helpful reading guides

Week 1 – Introduction to Urban Forests and Urban Forestry - Course/Instructor introduction; Pretest & review; Review Syllabus & Course Calendar & Canvas; Blogs - Treebune, The Nature of Cities & others; Review Class Themes; Introduction to urban forests, arboriculture & urban forestry; Urban forestry historical review; Urban land use trends;

Reading assignments:

History of Urban Forestry (Focus on early urban tree mgmt history, particularly in the Northeast)

Ricard, RM. 2005. Shade Trees and Tree Wardens: Revising the History of Urban Forestry. *J. For.* 103(5): 230-233.

Gerhold, HD. 2005. The Origins of Urban Forestry, Letter to the Editor. *J. For.* 103(7): 369-370.

Defining Urban Forests and Urban Forestry (Two foci here – USA history, Europe comparison)

Konijnendijk, C., et.al. 2006. Defining urban forestry – A Comparative Perspective of North America and Europe. *Urban Forestry & Urban Greening (UF&UG)* 4:93-103.

Current Trends in Land Use (Focus – land use change research; urbanization/Anthropocene)

Rudel, TK, et al. 2005. Forest transitions: towards a global understanding of land use change. *Global Environmental Change* 15: 23-31.

Nowak, DJ, Greenfield, EJ. 2012. Tree and Impervious Cover Change in U.S. Cities. *UF&UG* 11:21-30.

The Economist. 2011 (May 26). Welcome to the Anthropocene: Humans have changed the way the world works now they have to change the way they think about it, too. 11p.

Discussion Paper #1 – Welcome to the Urban Forest Writing Assignment – 750-1000 words, figures are extra and encouraged - should include a map, drawing, or pictures of the location (hint: Google Earth) of the street block so the instructor can find where you are writing about. Describe the benefits/ecosystem services (ecological, environmental and/or social) of the street trees in one street block (both sides of the street) found within the Bloomington Downtown Commercial Zoning District (search City of Bloomington Map Gallery). To enhance your written presentation use the National Tree Benefit Calculator (www.treebenefits.com) to evaluate one individual tree from the street block to learn more about the environmental and economic benefits of urban trees and present these findings in a figure/table. Finally, close the paper with a paragraph discussing whether the street's urban tree canopy cover is sustainable, has limitations, etc. You are writing as a technical paper to the instructor. Upload file (file name as follows: last name, first name, DP1) to Canvas Assignment #1. Due 11:30am Thursday, January 19, 25 pts.

Week 2 – Sustainable Urban Forests as Social-Ecological Systems (SES's) – Defining the urban forest – Guest speaker - Dr. Sarah Mincey, Associate Director IPE, IUB SPEA; Urban forest sustainability models and metrics; Introduction to institutions, resilience, robustness thinking; Urban trees/forests - public goods or common pool resources?; See “About the Bloomington Urban Forestry Research Group” (2 pages) website at http://iu.edu/~cipec/research/bufrg_about.php; SOP - Debrief guest speaker

Reading Assignments:

Sustainable Urban Forests and SES's (Course theme; Clark, et al., benchmark UFM publication!)

Clark, JR, et al. 1997. A Model of Urban Forest Sustainability. *J. Arboriculture* 23(1):17-30.

Kenney, WA, et al. 2011. Criteria and Indicators for Strategic Urban Forest Planning and Management. *Arboriculture & Urban Forestry (A&UF)* 37(3):108-117.

Ostrom, E. 2009. A General Framework for Analyzing Sustainability of Social- Ecological Systems. *Science* 325: 419-422.

Intro to Sustainability & Urban Forestry (a mixture of simple urban forest sustainability “metrics”)

American Forests - Setting Urban Tree Canopy Goals, 2p. See <http://hpi-green.com/tag/american-forest/>.

Arbor Day Foundation. 2015. Tree City USA Standards, 2p. ADF website

Ball J, S Tyro. 2016. Diversity of the Urban Forest: We need more genera, not species. *Arborist News* 25(5): 48-53.

Cray, D. 2007. Why Cities are Uprooting Trees. *Time Magazine*, June 21, 2007, 2p.

Louks, P. 2009. The Urban Forest and Community Sustainability. *CitiesGoGreen.com*, p19-22.

Week 3 – Urban Tree Canopy (UTC) Analysis – What is UTC and how is it analyzed; Perceptions and reality; Use and abuse as management tool; Guest speaker Bob Neary, Information specialist, IN Chapter, The Nature Conservancy

Avins, M. 2013. Baltimore's Forest Patches: Emerald assets for ecosystem services. 34p.
<http://baltimoregreenspace.org/downloads/ForestPatchesWeb.pdf>

Grove, M., O'Neil-Dunne, J. 2011. Urban Tree Canopy Analysis Helps Urban Planners with Tree Planting Campaigns. USFS NRS Res. Rev. No. 13 (Summer 2011), 6p.

Nowak, David J. 2012. A Guide to Assessing Urban Forests. NRS-INF-24-13, 4 p.

O'Neil-Dunne, J. 2015 (December draft). Tree Canopy Report: Indianapolis-Marion County, IN. USFS, University of Vermont Spatial Analysis Lab, 12p. (2 items, includes 1-page summary)

DP #2 – Introduction to Urban Tree Canopy Analysis Writing Assignment, 750-100 words.

Review the Tree Canopy Report: Indianapolis-Marion County, IN and identify three important takeaways (conclusions, impressions or action points resulting from reading the report). The takeaways might relate best to city-county officials or Keep Indianapolis Beautiful or the media or neighborhoods or individual private citizens, etc. The format of the discussion paper is as follows: Introduction describes how you determined (criteria, etc.) the three important takeaways and then displays the three takeaways as bullet points. Then, prepare three tightly written sections explaining the importance of each takeaway. Finally, for closure consider the combined Bloomington/IUB campus, which has not done such a canopy analysis, and write one really important question you would want addressed locally if such a study was proposed. Upload file (last name, first name, DP2). Due 11:15 am Thurs., Feb. 2, 35 pts.

Week 4 - The Benefits/Cost of Urban Trees/Urban Forests – themes: Perceptions & reality, correlations & causation, ecosystem services/disservices; See Human Dimensions of Urban Forestry & Urban Greening at www.naturewithin.info (K Wolf's U. Washington website); National Tree Benefits Calculator <http://www.treebenefits.com/calculator/>

Reading Assignments (Selected readings; more available in vibrant, growing field of research)

Donovan, GH, et al. 2012. Comment on "Green Space, health inequity, and pregnancy". Environmental International (Correspondence) 39:133.

Donovan, GH. M. Oliver. 2015. Exploring Connections between Trees and Human Health. U.S.D.A. Forest Service, Pacific Northwest Research Station, Science Findings 158. 6p.

Hanson, et al. 2016. Human Health & Social Benefits of Urban Forests. Dovetail Partners. 13p.

Hauer, RJ, JM Vogt, BC Fischer. 2015. What is the cost of not maintaining the urban forest? Arborist News 24(1): 12-17.

Lyytinen, J, M Sipila. 2009. Hopping on one leg –The challenge of ecosystem disservices for urban green management. UF&UG 8:309-315.

McDonald et al. 2016 (Ex Sum). Planting Healthy Air: A global analysis of the role of urban trees in addressing particulate matter pollution and extreme heat. The Nature Conservancy. 12p.

McPherson, G., et al. 2005. Municipal Forest Benefits and Costs of Five US Cities. J. For. 103(12):411-416.

Nowak, DJ. et.al. 2007. Oxygen Production by Urban Trees in the United States. A&UF 33(3): 220-226.

Peper, PJ, et.al. 2009. Lower Midwest Community Tree Guide: Benefits, Costs and Strategic Planting. USDA FS PSW-GTR-219. 115p. (Read Chap 2 in depth & Chap 3 for an overview)

Wolf, K.L. 2013. Why Do We Need Trees? Let's Talk about Ecosystem Services. *Arborist News* 22(4): 32-35.

Week 5 – National-State-Local Players in Urban Forestry (general overview, “chalk talk” presentation by Burney) – State/National players summarization & how things operate for urban forestry funding for programs & research federal>state>local (think neighborhood!) level; Guest speaker - Bill Kinicus, Indianapolis City Forester

Reading Assignments:

State U&CF Case Stories (2014 compilation of 1p state stories, review several for themes), 46p.

State Urban Forestry Program Assessments (Academic assessment of state program)

Wolf, K L. 2007. Urban Forestry in Washington's Cities and Towns: Programs and Progress. Washington Department of Natural Resources Community Forestry Program, No. 20, 3p.

National perspectives on urban forestry (review for general overview and connection to chalk talk)

Vibrant Cities & Urban Forests Task Force. 2011. Vibrant Cities & Urban Forests – A National Call to Action. New York Restoration Project, First Ed. 42p.

Sustainable Urban Forest Coalition (SUFC) - Policy Principles & Operating Procedures, 5p, & Fact Sheet, 2p.

NUCFAC. 2015. Ten-Year Urban Forestry Action Plan Summary (2016-26). 1p

Week 6 – Municipal Urban Forestry & Tree Law - Tree ordinances/boards/planning; Urban forest disturbance planning; Institutions “governing” urban trees; Tree law talk

Reading Assignments:

Municipal Urban Forestry (see Municipal Forestry Folder)

Burban L. 2013. Tree Emergency Plan Worksheet. White paper, 12p.

Johnson G, et al. 1990. Four Phases of a U&CF Program. White Paper, 1p.

National Arbor Day Foundation. 2007. Sample City Tree Ordinance. 1p.

Mincey, SK, BC Fischer. 2013 (April). Solutions for Sustainable Urban Forest Governance and Management. IUB SPEA Insights, 4p.

(Compare two plans for class discussion)

Orndorff, R. 2005. Master Street Tree Plan. City of Rockville Md. 1p.

Bloomington Urban Forestry Plan (2014-2019) 1p.

Urban trees public goods or CPR's? (See PPT used in class.)

Hardin, G. 1968. The Tragedy of the Commons. *Science* 162:1243-1248 (specifically read section “Tragedy of the Freedom in a Common” and ponder public spaces and trees).

USFS. 2009. Understanding and Caring for New York City's Urban Forest. USFS NRS Research Review, USFS No. 8 (Autumn 2009), 6p.

Trees and the Law (Review prior to Tree Law Talk presentation – See Tree Law Folder)

Beerling, PS, Scott, JR. 2006. Premise Liability and Your Trees. 13p.

Macey, SL, Scott, JR. 2008. Why do I Need to Understand Alternative Dispute Resolution. 12p.

Lewis, M. 'Arborcide' and 4 other nasty tree fights. MSN Real Estate, 5p.

May v. George, 910 N.E.2d 818 (2009). From WestlawNext 2012. 7p.

Ortiz v. Jesus People, U.S.A., 405 Ill.App.3d 967 (2010). From WestlawNext 2012. 9p.

Parr, et al. 2010. Boundary Line Trees – Who Owns Them? 1p.

Stackhouse v. Royce Realty and Management Corp., 2012 IL App (2d) 110602 (2012). From WestlawNext 2012, 10p.

Stephenson, CE. 2004. Tree Law: More complicated And Plentiful than Many Lawyers Think. *Lawyers Weekly USA*. 8p.

Light Staff. 2007. Trees: what's your liability? *Point Reyes Light*, 3p.

DP#3 – SWOT of current tree planting/canopy campaign, 750-1000 words

The assignment is to conduct a brief SWOT (*Strengths, Weakness, Opportunities and Threats; Google SWOT for references and helpful aids, if you are unaware of this analysis technique*) analysis of an active/current (*i.e. on-going, not completed or terminated*) nonprofit, municipal or regional tree planting or canopy campaign. You will select a campaign of your choice (*KIB is not allowed!*) and do an on-line review and analysis of the campaign (make sure to include citations of your work). The discussion paper, 750-1000 words, should clearly describe the initiative and its purposes, the key stakeholders, etc., and then you will construct a brief SWOT to analyze the campaign, not the whole organization conducting the campaign. Finally, you should end the paper with a succinct prediction on the possible success of the initiative. Figures and tables are extra. Upload file (last name, first name, DP3). Due 9:30 am, Tues., Feb 28, 40 pts

Week 7 – Tree Planting &/or Canopy Cover Campaigns (Selected regional/city greening initiatives); NGO's – tree planting & otherwise; KIB presentation – Nate Faris, Molly Wilson & Ned Brockmeyer, review <http://www.kibi.org/programs/overview/>, click on Planting Trees & Youth Program

Reading Assignments:

Roman, LA. 2014. How Many Trees Are Enough? Tree Death and the Urban Canopy. *Scenario Journal* 04. 8p

McPherson, G., Young, R. 2010. Understanding the Challenges of Municipal Tree Planting. *Arborist News* 19(6):60-62

Week 8 – Midterm Exam Week. Catch-up day on Tuesday and Exam on Thursday

Note: Schedule and Reading after Mid-Term Exam are subject to change, per guest speakers, weather and field trips and search for new articles. So, more to come.

Week 9 & 10 Tree Inventory and Assessment – field trip for class exercise/short Discussion Paper #4 (see in-field handout); Guest lectures by Sarah Widney, Craft Lab Mgr., Planted tree survival, growth and i-Tree (March 8) and Aren Flint, Davey Resource Group, TreeKeeper software/project management (March 22); i-Tree software <http://www.itreetools.org/>

Spring Break – March 13-17!!!!

Reading Assignments - See Week 9 & 10 folder for handouts, etc., for field exercise, etc.

Mincey, SK., BC. Fischer. 2009. The Woodland Campus: A Historic Walking Tour of Indiana University – Bloomington. IU-B SPEA Pub. 20p. <http://www.indiana.edu/~spea/pubs/woodland.pdf>.

Widney, SE, et al. 2016. Tree mortality undercuts ability of tree-planting programs to provide benefits: results of a three-city study. *Forests* 7(65), 21p.

Discussion Paper #4 – short street tree inventory report, 3-4 person teams. Details TBD!
Note: instructor will conduct a peer review of each team after homework assignment is received.

Weeks 11 – Introduction to Tree Biology (Understanding basic tree biology)

Reading Assignments: (Review Tree Owner's Manual for Next 4 Weeks of Class)

Chaney, WR. 1993. *Acer saccharinum* – Silver Maple: the “Coyote of Trees.” *Arbor Age* 13(4):31.

Johnson J., et al. 2008. *Tree Owner's Manual for the Northeastern and Midwestern U.S.* USDA FS NA S&PF, NA-FR-04-07, 36p. Each student will receive a hardcopy of this publication.

USDA. 2006. *How a Tree Grows.* FS-32, 8p.

Case Study Discussion (Review before PowerPoint lecture in class)

Culley, TM, NA Hardiman. 2007. The Beginning of New Invasive Plant: A History of the Ornamental Callery Pear in the United States. *BioScience* 57(11); 956-964.

Week 12 - Tree Care and Management – Pruning, risk rating, etc.; Urban tree health management; EAB and other pest case studies

Reading Assignments:

Pruning (Major management activity by city foresters)

Clark, JR, N Matheny. 2010. What does research tell us about the practice of pruning in arboriculture? *Arborist News* 19(1):41-44.

UF Tree Care Myths Summary by B.C. Fischer. 2017. 3p.

Emerald Ash Borer (EAB) will be our thematic pest species for urban forest health mgmt.)

See National EAB website <http://www.emeraldashborer.info/#sthash.YuulWNhA.dpbs>

See Indiana EAB <http://extension.entm.purdue.edu/EAB/>

Aukema, et al. 2011. Economic Impacts of Non-Native Forest Insects in the Continental United States. *PLOS ONE* 6(9): e24587. doi:10.1371/journal.pone.0024587.

Vannatta, A., et al. 2012. Economic Analysis of Emerald Ash Borer (Coleoptera: Buprestidae) Management Options. *Econ. Entomology* 105(1):196–206.

Week 13 - Tree Industry Review - Economic impacts, trends, job opportunities; **Field Day (April 13) with Davey Tree Expert Company/Davey Resource Group – Mark Noark, Aren Flint, etc.**

Reading Assignments:

Searching for another article to be added about the green industry?

Schmidlin, TW. 2008. Human fatalities from wind-related tree failures in the United States, 1995-2007. *Nat. Hazards, Orig. Paper.* DOI 0.1007/s1069-008-9314-7, 13p.

Weeks 14 - Tree Planting – Tree selection (& invasive spp.); Diversity, rules-of-thumb; Right Tree, Right Place; Living Memorials; **Planting/care field demo, B'ton City Forester Lee Huss**

Reading Assignments:

Louks, P (Ed). *Indiana Community Tree Selection Guide: Recommendations by Indiana's City Foresters & IDNR, Community & Urban Forestry.* IN DNR, 16p.

Purcell, L. 2011. *Tree Installation: Process and Practices.* Purdue Extension FNR-433-W, 7p.

Struve, DK. 2009. Tree Establishment: A Review of Some of the Factors Affecting Transplant Survival and Establishment. *A&UF* 35(1): 10-13.

Week 15 – Graduate Research Paper Presentations, Team Case Study Presentation(s), Course closure & evaluation; Final Exam for UG's, Graduate Research Papers