

Wednesday, 7:00-9:50 p.m., University Hall, Room 09

Instructor

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Course Description

This graduate course explores physical forms and functions of green cities: how landscape, land use and transportation planning affect human health and the environment. The course consists of three modules: *green infrastructure*, *sustainable transportation* and *synthesis*. It first surveys how green infrastructure can solve various environmental problems in cities and enhance human health. It encompasses planning for urban hydrology, parks, wildlife habitats, public health, and urban heat management. The second module investigates local and regional climate action plans by focusing on how municipalities reduce energy consumption and greenhouse gas emissions through renewable energy; energy efficient technologies; and smarter land use and transportation planning. The third module, “synthesis,” is a five-week project workshop to develop a climate action plan for a city in DFW. The course is a combined lecture, guest lecture from public and private sectors, field studies, student-led discussion and collaborative teamwork. As an elective course for the GIS certification, examples of GIS analyses on each topic will be presented through lectures. There is no prerequisite for this course.

Learning Outcomes

At the conclusion of the course, you will be able to:

- Demonstrate an understanding of underlying natural processes in cities and the impact of urbanization on ecosystems.
- Demonstrate an understanding of the impact of transportation –its infrastructure, mode choice, technology, and behavior on urban environmental quality, public health and climate change.

- Develop a climate action plan that can best utilize the benefits of green infrastructure and sustainable built forms for mitigating and adapting to climate change.
- Craft planning and policy implications for building a low-carbon green city from empirical research findings and best practices.

Textbooks

[Required]

- Condon, P.M. (2010). *Seven Rules for Sustainable Communities*. Washington DC: Island Press. One copy is on class reserve in the Central Library.
- Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., Chen, D., McCann, B., & Goldberg, D. (2007). *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington, DC: Urban Land Institute. (Selected reading for AICP exam preparation). One copy is on class reserve in the Central Library. The PDF version is available at: http://postcarboncities.net/files/SGA_GrowingCooler9-18-07small.pdf
- Boswell, M. R., Greve, A. I., & Seale, T. L. (2011). *Local Climate Action Planning*. Island Press. One copy will be available and be on class reserve in the Central Library by the end of September.

[Recommended]

- Benedict, M. A., & McMahon, E. T. (2006). *Green infrastructure: linking landscapes and communities*. Island Press. (Selected reading for AICP EP exam preparation).
- Rouse, D. C., & Bunster-Ossa, I. F. (2013). *Green infrastructure: a landscape approach*. American Planning Association.
- Dramstad, W. E. (1996). *Landscape ecology principles in landscape architecture and land-use planning*. Island press.
- Stone Jr, B. (2012). *The city and the coming climate: Climate change in the places we live*. Cambridge University Press.
- Morris, M. (2006). *Integrating planning and public health: tools and strategies to create healthy places*. American Planning Association. (Selected reading for AICP exam preparation).

*Other supplemental reading materials (peer-reviewed journal articles and research reports for both required and recommended reading) will be provided through Blackboard.

Descriptions of major assignments and examinations

Grades will reflect class participation (attendance, discussion, and presentation), two individual assignments and a final group project. Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels.

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Requirements	Evaluation	Weight
Class Participation (35%)	Attendance & in-class participation	10
	Weekly response papers	15
	Case study presentation & discussion lead	10
Module 1 Assignment (15%)	Report on green infrastructure plan	15
Module 2 Assignment (20%)	Report on local climate change action plan	20
Module 3 Final Group Project (30%)	Presentation	10
	Project report	20
TOTAL		100
Letter Grade		
	A	>=90
	B	>=80
	C	>=70
	D	< 70

*Important note: **Incomplete grading “I” or extensions are not available in this class** unless severe illness or documented extenuating circumstances justify it.

- **Attendance, In-class Participation, and Weekly Response Papers:** Students are expected to attend class, regularly contribute to discussions and consistently demonstrate that they have completed the readings. Each week, students are expected to submit a one page written summary and response to the assigned readings of the week.
- **Case Study Presentation & Discussion Lead:** Each student will choose a topic of their interest and will survey best practices of a chosen topic. Students will work in pairs as a team. Each team will make a 30 minute oral presentation (about 15 minutes for each student) for two case studies: one from Texas and the other from outside of Texas, and make implications to cities in the DFW metroplex. Then the team will lead a following 30 minute discussion by posing a minimum of two questions to the class to generate an active discussion. The team must prepare their presentations and discussion questions in advance and submit their draft presentation file to the instructor by at least three days prior to their presentation (e.g. Sunday of the week) and incorporate the instructor’s feedback on their final presentation.
- **Module 1 Assignment:** Each student will review two different formats of local green infrastructure plans (GI plan) from U.S. cities and succinctly discuss the uniqueness of their plans with regards to the structure, content, focus subjects (e.g. hydrology vs. urban forestry vs. wildlife habitat etc), links to other local plans including climate action plans (if

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any) and compare the strength and weakness of each plan. The report also must include the implications to one of the cities in DFW that does not have a comprehensive GI plan yet. This 3-page (single-spaced) paper is due September 30.

- **Module 2 Assignment:** Each student will review two different formats of local climate change action plans (CAP) from U.S. cities and discuss the uniqueness of their plans with regards to the structure, contents, focus areas (e.g. mitigation vs. adaptation), links to other local plans (e.g. comprehensive plans) and compare the strength and weakness of each plan. The report also must include the implication to one of the cities in DFW that does not have a CAP yet. This 3-page (single-spaced) paper is due October 24.
- **Module 3 Final Project:** By applying rules for building sustainable communities, the case studies, and module 1 & 2 assignments, the class will be divided into several groups to develop a local climate action plan for a city in DFW through a five-week project workshop. Specific guidelines will be provided through BB. Each group will deliver a final presentation on December 3rd and a final project report (5-6 page, single spaced) by December 6th.

Schedule

Wk	Date	Topic	Required Reading [Rec.] = Recommended Readings
Module 1: Green Infrastructure			
1	8/27	Course Overview; Climate Change and Urban Areas in Texas	Condon, 2010. Ch 1 http://texasclimate.org/Portals/6/Books/ImpactTX/Ch7Hitchock.pdf
2	9/3	Overview of Green Infrastructure; Urban Hydrology *Case Studies/Discussion: Stormwater BMPs techniques	Benedict and McMahon, 2006. Chapter 3 (Bb); Condon, 2010. Ch 8. [Rec.] EPA, 2010. GI Case Studies (Bb); [Rec.] Rouse, D. C., & Bunster-Ossa North, 2013. [Rec.] Texas: Returning to the Trinity (Bb)
	TBA	Field trip to Texas A&M Extension (substitute to 10/29 class)	No reading assignment
3	9/10	Urban Parks and Land Conservation * Case Studies/Discussion: Park network system	Benedict and McMahon, 2006. Chapter 2 (Bb); Condon, 2010. Ch 7 [Rec.]Dramstad, 1996. (Bb)
4	9/17	Urban Heat Island Effects and Heat Management * Case Studies/Discussion: Municipal tree planting	Stone Jr, 2012. Chapter 3 & 4 (Bb) [Rec.]Dallas Urban Heat Island http://files.harc.edu/Projects/DallasUHI/FinalReport.Summary.pdf [Rec.] City of Arlington Urban Forest Resource Analysis http://texasforestservation.tamu.edu/uploadedFiles/FRD/Urban_Forestry/Community_Inventory_and_Reports/ArlingtonFinalUFOREAnalysisReport.pdf

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Module 2: Sustainable Transportation			
5	9/24	Overview of Sustainable Urban Form and Transportation; Texas GHG Emissions in Urban Areas * Case Studies/Discussion: Alternative Transportation	Ewing et al, Ch 1&2; http://texasclimate.org/Portals/6/Books/ImpactTX/Ch8Clarkson.pdf ; Condon, 2010. Ch 2
6	10/1	Urban Form, VMT, Green Technology, and Climate Change * Case Studies/Discussion: Street Connectivity	Ewing et al, Ch 3&4; Condon, 2010. Ch 3
7	10/8	Integrated Planning for Public Health * Case Studies/Discussion: TOD & Job Accessibility	Morris, 2006. Ch.3. (Bb); Condon, 2010. Ch 4&5 [Rec.] TBA (BB)
8	10/15	Urban Form and Residential Energy Consumption; Green Buildings * Case Studies/Discussion: Diverse and Green Housing	Ewing et al, Ch 7; Condon, 2010. Ch 6; Ko, 2013 http://jpl.sagepub.com/content/28/4/327
9	10/22	Policy Implications; Climate Action Plans; Final Project Overview	Ewing et al, Ch 9 Boswell et al, Ch 1
Module 3: Synthesis			
Developing a Climate Action Plan			
10	10/29	No class (Substituted by the field trip; keep working on the project)	Boswell et al, Ch 2 Bassett and Shandas, 2010 (BB)
11	11/5	Desk review 1 (mitigation strategies)	Boswell et al, Ch 4 & 5
12	11/12	Desk review 2 (adaptation strategies)	Boswell et al, Ch 6
13	11/19	Draft Plan Review	
14	11/26	Revising Plans - Thanksgiving week	
15	12/3	Final Presentation	
16	12/6	Final Report DUE	

** As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.*

Other General Notes

Attendance Policy: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this course, I have established the attendance policy described on page 3. Students have the responsibility to fully participate. This participation includes, but is not exclusive to, attendance, class discussions, the individual evaluating and sharing of research that is relevant to their own future career interest as it relates to green cities and transportation, and preparing for and participating in team presentations. As a rule, graduate students should expect to spend three to four hours preparing for each hour spent in class (i.e. for a three hour class each week, 9 to 12 hours of preparation). If a student does miss a class, they need to contact the instructor ASAP to determine what, if any impact there is to his/her final grade.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/ses/fao>).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs.

For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located across the hall from our classroom. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.