

**Tuesday, 3:00-5:50 p.m., University Hall, Room 02**

**Instructor**

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**Teaching Assistant**

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Office hours By appointment

**Course Description**

This graduate course explores green infrastructure and how urban development and human activities in cities, particularly with regards to the transportation sector, affect the environment. The course consists of three modules: *green infrastructure*, *sustainable transportation* and *synthesis*. It first surveys how urban park planning through green infrastructure can solve urban environmental problems. It encompasses urban hydrology, wildlife habitats and the effects of land use and land cover on urban heat island and public health. The second module investigates how urban forms and transportation systems affect energy consumption and greenhouse gas emissions. The third module “synthesis” is a five-week service learning project workshop to develop a green community plan for the Six Points Urban Village in Fort Worth. The course is a combined lecture, guest lecture from public and private sectors, student-led discussion and collaborative teamwork. 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.

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- Demonstrate an understanding of the impact of transportation –its infrastructure, mode choice and behavior on urban environmental quality, public health and climate change.
- Develop a sustainable master plan that can best utilize the benefits of green infrastructure and sustainable built forms.
- Extract planning and policy implications for building a low-carbon green city from empirical research findings.

### **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. et al. 2008. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington DC: Urban Land Institute. One copy is on class reserve in the Central Library. (Selected reading for ACIP exam preparation)

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

### **Requirements & Grading**

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.

Requirements	Evaluation	Weight
Class Participation	Attendance, response paper, in-class participation	10
	Discussion lead & case study presentation	10
Assignment 1	Policy memo on green infrastructure for DFW	15
Assignment 2	Report on local climate change action plan	25
Module 3 Final Group Project	Presentation	15
	Project report	25
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, Response Papers and In-class Participation:** 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.
- **Discussion Lead & Case Study Presentation:** Each student will make an oral presentation and serve as a discussant for a peer’s presentation. Oral presentations will be about specific topics from each class. The 15 minute presentation must include further investigation on the assigned topic and include at least two case studies from either inside or outside of Texas and make implications to cities in the DFW metroplex. Discussant will prepare a minimum of two questions related to the assigned reading and pose the questions to the class to generate an active discussion. Collaborating with the presenter of the day, the discussant must facilitate active discussions in an innovative way.
- **Module 1 Assignment:** Each student will pick and survey one dimension of green infrastructure in the DFW area and write a 2-page (single-spaced) policy memo to the Sustainability Committee of Vision North Texas. The memo is due September 26.
- **Module 2 Assignment:** Each student will survey 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 and contents 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 3-4 page (single-spaced) paper is due October 24.
- **Module 3 Final Project:** By applying rules for building sustainable communities and case studies, the class will develop a green community plan for the Six Points Urban Village in Fort Worth through a five-week project workshop. On the last day of class, all groups will present their proposals in a local high school as a form of public meeting for public education. Graphic communication is highly recommended. Figures and maps should be clear enough to deliver your message. Each group will produce an 8-10 page report by December 3<sup>rd</sup>. The group reports will be combined into one class report and submitted to the Six Points Urban Village civic group and the City of Fort Worth.

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### Schedule

Wk	Date	Topic	Required Reading
<b>Module 1: Green Infrastructure</b>			
1	8/27	Course Overview; Climate Change and Urban Areas in Texas; Overview of Green Infrastructure	Condon, Ch 1 <a href="http://texasclimate.org/Portals/6/Books/ImpactTX/Ch7Hitchcock.pdf">http://texasclimate.org/Portals/6/Books/ImpactTX/Ch7Hitchcock.pdf</a>
2	9/3	Urban Hydrology *Case Studies/Discussion: Stormwater BMPs techniques	Benedict and McMahon, 2006. Chapter 3 (Bb) Condon, Ch 8
3	9/10	Urban Parks and Land Conservation * Case Studies/Discussion: Park network system	Benedict and McMahon, 2006. Chapter 2 (Bb) Condon, Ch 7
4	9/17	Urban Heat Island and Public Health * Case Studies/Discussion: municipal tree planting	Gill, S.E. et al. 2007 <a href="http://www.coolrooftoolkit.org/wp-content/uploads/2012/04/Gill_Adapting_Cities.pdf">http://www.coolrooftoolkit.org/wp-content/uploads/2012/04/Gill_Adapting_Cities.pdf</a> Dallas Urban Heat Island <a href="http://files.harc.edu/Projects/DallasUHI/FinalReport.Summary.pdf">http://files.harc.edu/Projects/DallasUHI/FinalReport.Summary.pdf</a> Recommend: <a href="http://texasforestservice.tamu.edu/uploadedFiles/FRD/Urban_Forestry/Community_Inventory_and_Reports/ArlingtonFinalUFORAnalysisReport.pdf">http://texasforestservice.tamu.edu/uploadedFiles/FRD/Urban_Forestry/Community_Inventory_and_Reports/ArlingtonFinalUFORAnalysisReport.pdf</a>
<b>Module 2: Sustainable Transportation</b>			
5	9/24	Texas GHG Emissions in Urban Areas; Overview of Sustainable Urban Form and Transportation *Case Studies/Discussion: Climate Change Action Plans	Ewing et al, Ch 1&2 <a href="http://texasclimate.org/Portals/6/Books/ImpactTX/Ch8Clarkson.pdf">http://texasclimate.org/Portals/6/Books/ImpactTX/Ch8Clarkson.pdf</a>
6	10/1	Urban Form, VMT, and Climate Change * Case Studies/Discussion: Alternative Transportation & Street Connectivity	Ewing et al, Ch 3&4 Condon, Ch 2 & 3
7	10/8	Urban Form and Travel Behavior * Case Studies/Discussion: TOD & Job Accessibility	Ewing et al, Ch 5&6 Condon, Ch 4&5
8	10/15	Urban Form and Residential Energy Consumption; Green Buildings * Case Studies/Discussion: Diverse and Green Housing	Ewing et al, Ch 7 Condon, Ch 6 Ko, 2013 <a href="http://jpl.sagepub.com/content/early/2013/06/27/0885412213491499">http://jpl.sagepub.com/content/early/2013/06/27/0885412213491499</a>
9	10/22	Combined Effect/ Policy Implications Final Project Overview * Case Studies/Discussion: Smart Planning for Public Health	Ewing et al, Ch 8,9&10

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<b>Module 3: Synthesis: Green Community Plan for the Six Point Urban Village, Fort Worth</b>			
10	10/29	Problem Assessment: Field Trip	
11	11/5	Brainstorming Alternative Plans	
12	11/12	Draft Plan Evaluation	
13	11/19	Draft Plan Proposal	
14	11/26	Revising Plans (Thanksgiving week)	
15	12/3	Final Presentation	

*\* 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:** 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](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**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.*

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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](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://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.