

Wednesday, 7:00-9:50 p.m., University Hall, Room 01

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Office hours Monday & Tuesday 2pm-3pm
(Sign-up sheet at 519 University Hall)
& by appointment

Course Description

This graduate course explores the ecology of cities 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: *urban ecology*, *sustainable transportation* and *synthesis*. It first surveys natural processes in cities, which encompass water cycle, vegetation, wildlife, urban agriculture and climate. The second module focuses on low carbon urban development by investigating the evidence on how the interrelation between urban form and transportation systems affects energy consumption and CO₂ emission. The third module “synthesis” is a four-week workshop to develop a comprehensive 100-year green city roadmap for the City of Arlington. The course is a combined lecture, student-led seminar 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.
- Demonstrate an understanding of the impact of transportation –its infrastructure, mode choice and behavior on urban environmental quality, public health and climate change.
- Develop desirable urban development strategies that can best utilize natural processes and give a minimum impact on ecosystems.
- Extract planning and policy implications for building a low-carbon green city from empirical research findings.

CIRP 5327 Introduction to Green Cities and Transportation

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Textbooks

[Required]

- Hough, M. 2004. *Cities and Natural Process: The Basis for Sustainability*. 2nd edition. Canada: Routledge. (Module 1)
One copy is on class reserve in the Central Library. Original 1995 edition is also acceptable; one copy of 1995 edition is available as electronic version at: <http://discover.uta.edu/?itemid=|uta-cat|1043090>
- Ewing, R. et al. 2008. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington DC: Urban Land Institute. (Module 2)
- Condon, P.M. 2010. *Seven Rules for Sustainable Communities*. Washington DC: Island Press. (Discussion for Module 1,2 & 3)
One copy is on class reserve in the Central Library.

[Recommended]

- Register, R. 1987. *Ecocity Berkeley: Building Cities for a Healthy Future*. Berkeley, CA: North Atlantic Books. (Good reference for the final project)

*Other supplemental reading materials 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 , Discussion & Group Activity	10
	Discussion Lead	10
Module 1 Assignment	Report 1	20
Module 2 Assignment	Report 2	20
Module 3 Final Group Project	Group Report 3 + Group Presentation	40
TOTAL		100
Letter Grade		
	A	>= 89
	B	>=75
	C	>=65
	D	< 65

- **Attendance, Discussion and Group Activities:** Students are expected to attend class, regularly contribute to discussions, actively participate in their groups and consistently demonstrate that they have completed the readings.
- **Discussion Lead:** Each student must lead at least one discussion during the semester. On the first day, students will pick the topic of their interests from the given set of discussion topics (See topics in the following section). A leading student is responsible for giving a 20-30 minute oral presentation (summary of essential contents and your own surveys on local conditions with regards to the chosen topic), distributing handouts, raising study questions and facilitating discussions.
- **Module 1 Assignment:** Students will produce a 4-5 page (single spaced) case study report on an eco-city. Students pick a city (anywhere in the world) that is well-known for its ecological practices, describe what the city has been solving its environmental problems by preserving and restoring urban hydrological cycle, green wildlife network, city farming, and climate. They will survey and briefly explain its successful governmental or non-governmental programs, projects, policies or initiatives: what were the problems and how the city solved them. They will also provide implications for the City of Arlington. Students must inform the instructor by September 26th of their chosen city and plan. Assignment Due Date: October 16th.
- **Module 2 Assignment:** Same format as Module 1 report, but chose a city that is well known for its low carbon practices: encouraging transit, biking and walking; Transit-oriented Development (TOD), urban design for increasing connectivity and accessibility, fuel pricing, promoting energy efficient vehicles and buildings etc. Students must inform the instructor by October 31st of their chosen city and plan. Assignment Due Date: November 20th.
- **Module 3 Final Project:** By applying seven rules for building sustainable communities (covered by class discussions) and your own case studies, the class will produce a 100 year green city road map for the City of Arlington. Students will be divided into three groups and each group will apply 2-3 rules to the City of Arlington. On the last day of class, all groups will present their proposals. Graphic communication is highly recommended. Professional quality of graphic design is NOT required but figures and maps should be clear enough to deliver your message. Each group will produce an 8-10 page report by December 3rd. The group reports will be combined into one class report and be distributed to students.

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Schedule

Wk	Date	Topic	Reading
Module 1: Urban Ecology			
1	8/29	Course Overview; Overview of Urban Ecology *Overview: Seven Rules for Sustainable Communities	Hough, Ch 1 Condon, Ch 1
2	9/5	Water * Discussion: Build Green Infrastructure (Rule 1)	Hough, Ch 2 Condon, Ch 8
3	9/12	Vegetation *Discussion: Landscape Ecology (Articles)	Hough, Ch 3 Posted Articles
4	9/19	Wildlife * Discussion: Build Green Connectivity (Rule 2)	Hough, Ch 4 Condon, Ch 7
5	9/26	City Farming * Discussion: Urban Agriculture (Articles)	Hough, Ch 5 Posted Articles
6	10/3	Climate & Making Connections *Guest Lecture: TBA	Hough, Ch 6& 7 Posted Articles
Module 2: Sustainable Transportation			
7	10/10	Overview of Sustainable Urban Transportation *Discussion: Encourage Transit, Biking & Walking (Rule 3)	Ewing et al, Ch 1&2 Condon, Ch 2
8	10/17	Urban Form, VMT, and Climate Change * Discussion: Increase Street Connectivity (Rule 4)	Ewing et al, Ch 3&4 Condon, Ch 3
9	10/24	Urban Form and Travel Behavior * Discussion: Increase Accessibility through TOD (Rule 7)	Ewing et al, Ch 5&6 Condon, Ch 4
10	10/31	Residential Sector/ Combined Effect (Halloween Field Study) * Discussion: Provide a Diversity of Housing Types (Rule 6)	Ewing et al, Ch 7&8 Condon, Ch 5
11	11/7	Policy Implications /Final Project Overview * Discussion: Increase Job Accessibility (Rule 5)	Ewing et al, Ch 9&10 Condon, Ch 6
Module 3: Synthesis: A 100 Year Sustainable Roadmap for Arlington, TX			
12	11/14	*Guest Lecture: TBA Problem Assessment	Register
13	11/21	Alternatives Evaluation	
14	11/28	Plan Proposal (with phases)	
15	12/5	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://web.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.

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.