

University of Connecticut
CE 4730/5730 Transportation Planning
Fall 2019 Course Syllabus

Instructor: Prof. John N. Ivan **Office:** CAST 332 **Tel:** 860/486-0352 **Email:** john.ivan@uconn.edu
Class times: Tuesdays 5-7:30 PM in CAST 201 **Website (HuskyCT):** <http://lms.uconn.edu>
Office hours: by appointment at <http://nexus.uconn.edu>

Texts: we will use the following textbooks for this course:

- J. Ortúzar and L. Willumsen, *Modeling Transport, 4th Edition*, Wiley and Sons, 2011.
- Additional readings provided on HuskyCT.

Pre-requisites: students should have completed the following courses or an equivalent:

- CE 2210 *Decision Analysis in CEE* or CE 2251 *Probability & Statistics in CEE* (either of which may be taken concurrently) or equivalent: we will be applying statistical analysis methods learned in these courses.
- CE 2710 *Transportation Engineering* or equivalent: we will be building upon fundamental traffic engineering and planning concepts learned in this course.

Catalog Course Description: Transportation economics, urban transportation planning process, evaluation of transportation improvements, transportation systems management.

Course Outcomes:

Students will learn the theory behind urban travel demand forecasting methods as practiced by transportation planning professionals in North America. Emphasis is placed on the four step urban transportation planning procedure developed by UMTA in the 1960's, including procedures for estimating travel demand, calibration of gravity models for trip distribution, and application of mode split and network traffic assignment models. Application and relevance to other transportation modes and systems will also be discussed. Recent developments in the field of transportation planning in the United States related to mandates on state and local government made by current Federal legislation will also be discussed.

University Policies and Regulations:

- **Absences from Final Examinations:** <http://catalog.uconn.edu/academic-regulations/grade-information/#exam-absence>
- **Class Attendance:** <http://catalog.uconn.edu/academic-regulations/grade-information/#attendance>
- **Credit Hour:** <http://policy.uconn.edu/2012/08/22/credit-hour/>
- **People with Disabilities, Policy Statement:** <http://policy.uconn.edu/2011/05/24/people-with-disabilities-policy-statement/>
- **Policy Against Discrimination, Harassment and Related Interpersonal Violence:** <http://policy.uconn.edu/2015/12/29/policy-against-discrimination-harassment-and-related-interpersonal-violence/>
- **The Student Code:** <http://community.uconn.edu/the-student-code-preamble/>

Class conduct: My intention is to maintain a classroom environment that is conducive to learning. I will not tolerate any disruptive behavior that detracts from this environment, including, but not limited to, mobile phone or computer use (not related to the class), talking and eating. Any student engaged in behavior that I determine to be disruptive will be asked to cease the behavior, and if he/she refuses or continues, will be asked to leave. I also will not tolerate any abusive, offensive or demeaning actions or communication aimed at any person participating in the class. These expectations extend to any online forums or other electronic communication used for class discussions.

Homework: Homework will be assigned and submitted electronically on HuskyCT and due as listed on the class schedule. Homework problems will be discussed in the class in which they are due, and therefore, late assignments will not be graded. The highest ten homework scores out of a possible twelve will count toward the student's grade.

Current Event Presentation: Each student enrolled in CE 4730 will prepare a five-minute presentation about a news event related to Transportation Planning. One student will do this during each class period until all students have had an opportunity. The class will then spend about 10 minutes discussing the presentation. The presentation should include a news article or media clip to share with the entire class and answer the following questions about it: 1) What is the main story presented by the article or clip? 2) What issue(s) related to transportation and urban planning does it illustrate? 3) How can you apply something you have learned in this course about transportation planning to this situation? Presentations will be graded on the basis of answers to the above questions and the relevance of the selected article or media clip to class content.

Term Paper: Each student enrolled in CE 5730 will prepare a term paper on a topic assigned by the instructor. This project will involve a thorough exploration of the literature, a summary of the findings reported in the work found, and an interpretation and assessment by the student of the importance and value of the work to the field of transportation planning, including any unanswered questions which might arise from the analysis. Your paper must not simply be a restating of the abstracts of the papers you read; if I find you are copying abstracts you will not receive credit for the paper. Your final submission for the term paper must be uploaded to HuskyCT on or before the date indicated on the syllabus. Papers should be no more than twenty double-spaced pages in length, including figures and tables. I will not read past twenty pages. Grades on late submissions will be reduced five percent per calendar day. Papers will be graded on content, presentation and writing quality (grammar, spelling, punctuation, clarity, and organization). Students will also give a 15-20 minute (depending on time available) presentation about their findings on the last day of class and answer questions from the rest of the class.

Exams: There will be two exams given - a mid-term and a final - on the dates indicated on the course schedule. These dates are subject to change and will be confirmed at least two weeks ahead of time. Students enrolled in CE 5730 will have one extra question on each exam. No makeup will be given for the Mid-term exam without prior arrangement with the instructor.

Grading: Each portion of the course work will contribute toward the final grade as follows:

CE 4730	HW = 10%	Current event presentation = 30%	Midterm Exam = 30%	Final Exam = 30%
CE 5730	HW = 10%	Term Paper = 30%	Midterm Exam = 30%	Final Exam = 30%

Plagiarism: It is permissible and encouraged to work with classmates on problem assignments. The purpose of group collaboration is to bring together different viewpoints so a colleague may shed new light on a problem you are grappling with. The purpose of group collaboration is not to collectively put together one solution to a problem and pass it off as individual work. In fact, collective solutions violate the University of Connecticut code on plagiarism and require that actions be taken which may include dismissal from the university. See the Student Code of Conduct (URL listed above) for more details.

Course Schedule:

Date	Topic	Reading (in text)	Homework Assigned	Homework Due
Aug. 27	Transportation Planning Process Household Decision Making	Chap. 1	HW 1	
Sep. 3	Data collection / Network representations Trip Making Patterns	Chap. 3	HW 2	HW 1
Sep. 10	Trip Generation Modeling Regression Analysis	Chap. 4.1 Chap. 4.2	HW 3	HW 2
Sep. 17	Cross Classification Analysis Other Trip Generation Issues	Chap. 4.3 Chap. 4.4-7	HW 4	HW 3
Sep. 24	Trip Distribution Modeling Growth Factor Models	Chap. 5.1 Chap. 5.2	HW 5	HW 4
Oct. 1	The Gravity Model Gravity Model Calibration	Chap. 5.3 Chap. 5.5,5.8	HW 6	HW 5
Oct. 8	Other trip distribution models; Review	Chap. 5.4,6-7		HW 6
Oct. 15	MID-TERM EXAM			
Oct. 22	Mode Split Modeling The Logit Model	Chap. 6.1-4 Chap. 6.5	HW 7	
Oct. 29	Trip Assignment / Shortest Path Algorithm Travel Time Functions	Chap. 10.1-3 Handout	HW 8	HW 7
Nov. 5	User Equilibrium and System Optimality User Equilibrium Assignment Heuristics	Chap. 10.5 Chap. 10.5	HW 9	HW 8
Nov. 12	Stochastic Assignment Other Modeling Issues	Chap. 10.4 Chap. 10.6-8	HW 10	HW 9
Nov. 19	Applications of Travel Demand Forecasting	TBA	HW 11	HW 10
Nov. 26	THANKSGIVING BREAK – NO CLASS			
Dec. 3	Term paper presentations; Review	TBA	HW 12	HW 11
Dec. 10	FINAL EXAM (6-8 PM)			