CE 5331-001 - Traffic Engineering Operations
Fall 2011
Room NH 202
MW 7 to 8:20 pm

Instructor:
Jim Williams
Office: 435 Nedderman Hall
Phone: (817) 272-2894 (office)
(817) 272-2201 (CE office)
(817) 275-7794 (home - not before 10 am)
e-mail: jimwilliams@uta.edu

Office Hours:
Monday & Tuesday: 2:00 to 3:30 pm, 5 to 6 pm
Wednesday & Thursday: 2:00 to 6 pm

Course Description:
Legal requirements and traffic studies for installation of traffic control devices; characteristics of signs, signals, and markings; traffic laws; design of fixed-time, actuated, and computer-controlled traffic signals; optimization of traffic flow at intersections; capacity analysis of intersections.

Pre-requisite: CE 3302

Student Learning (ABET) Outcomes:
   a: Apply knowledge of mathematics, science, and engineering.
   c: Design a system, component, or process to meet desired needs.
   e: Identify, formulate, and solve engineering problems.
   f: Understanding of professional and ethical responsibility.
   j: Knowledge of contemporary civil engineering issues.
   k: Use the techniques, skills, and modern engineering tools necessary for engineering practice.

Techniques, Skills, and Modern Engineering Tools Used:
Manual on Uniform Traffic Control Devices, current federal edition
Highway Capacity Manual, 2010
Highway Capacity Software


texts continue on next page
Texts (continued):


Get individual parts & chapters under “2006 Texas Manual of Uniform Traffic Control Devices (MUTCD) - Revision 1”


MavSpace site:
[http://mavspace.uta.edu/cejcwill/ce9644](http://mavspace.uta.edu/cejcwill/ce9644)
you will need your NetID and corresponding password

Tests:  2 tests  
Weighted equally  
Test 1 will cover topics 1-3, Test 2 will cover topic 4

Homework:
There will be approximately three homework assignments. Due dates will be noted on the assignment sheets.

Projects:
There will be two design projects, one dealing with sign design, the second with the design and evaluation of a signalized intersection. Due dates will be noted on the assignment sheets.

Final Grade:  
10% - homework 90 - 100:  A  
15% - projects 80 - 89:  B  
75% - tests 70 - 79:  C  
60 - 69:  D  
- 59:  F

Attendance Policy:
Attendance is not mandatory; however, no special accommodations will be made for incomplete or missed assignments and exams due to unexcused absences.

Course Objectives:
Basic elements of traffic law and its impact on traffic operation; basic elements of the need for and design of traffic control devices (signs, signals, and markings); and the design, operation, and evaluation of signalized and unsignalized intersections, using both manual and computer methods.
### Course Outline

<table>
<thead>
<tr>
<th>Section</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>RPM, Chapter 1</td>
</tr>
<tr>
<td>2. Traffic Laws</td>
<td>TTL</td>
</tr>
<tr>
<td>3. Design &amp; Use of Traffic Control Devices</td>
<td>RPM, Chapter 4</td>
</tr>
<tr>
<td>- Introduction</td>
<td>MUTCD, Part 1</td>
</tr>
<tr>
<td>- Signs</td>
<td>MUTCD, Part 2A</td>
</tr>
<tr>
<td>- Signs: Regulatory</td>
<td>MUTCD, Part 2B</td>
</tr>
<tr>
<td>- Signs: Warning</td>
<td>MUTCD, Part 2C</td>
</tr>
<tr>
<td>- Signs: Guide</td>
<td>MUTCD, Parts 2D-2I</td>
</tr>
<tr>
<td>- Markings</td>
<td>MUTCD, Part 3</td>
</tr>
<tr>
<td>- Signals</td>
<td>MUTCD, Part 4</td>
</tr>
<tr>
<td>4. Intersection Operation</td>
<td>RPM, Chapters 18-20</td>
</tr>
<tr>
<td>- Traffic Signals: Fixed Time</td>
<td>TSTM, Chapters 1-4</td>
</tr>
<tr>
<td>- RPM, Chapter 21</td>
<td></td>
</tr>
<tr>
<td>- Traffic Signals: Actuated</td>
<td>TSTM, Chapter 5</td>
</tr>
<tr>
<td>- RPM, Chapter 22</td>
<td></td>
</tr>
<tr>
<td>- Traffic Signals: Capacity</td>
<td>HCM, Chapter 18</td>
</tr>
<tr>
<td>- RPM, Chapters 23 &amp; 24</td>
<td></td>
</tr>
<tr>
<td>- Unsignalized Intersection Capacity</td>
<td>HCM, Chapters 19 &amp; 20</td>
</tr>
</tbody>
</table>
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. Contact the Financial Aid Office for more information.

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:
It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents’ Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Student Support Services Available:
The University of Texas at 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. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Electronic Communication Policy:
The University of Texas at Arlington has adopted the University “MavMail” address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct
official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. Students are responsible for checking their MavMail regularly. Information about activating and using MavMail is available at http://www.uta.edu/oit/email/. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

To obtain your NetID or for logon assistance, visit https://webapps.uta.edu/oit/selfservice/. If you are unable to resolve your issue from the Self-Service website, contact the Helpdesk at helpdesk@uta.edu.

Final Review Week:
Final Review Week consists of the five class days prior to the first day of final examinations in the long sessions. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there will be no scheduled activities such as required field trips; and no new homework will be assigned. During Final Review Week, no examinations constituting 10% or more of the final grade will be given, except makeup tests and laboratory examinations. In addition, no portion of the final examination will be given during Final Review Week. Classes are held as scheduled during this week and lectures and presentations may be given.