CIVE 360 – Sustainable Transportation Systems & Urban Communities

Term – FALL 2015 (201509)

Instructor
Dr. Scott Iverson
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Office Hours
Days: Mondays 2:40 – 3:30
and Thursdays 11:40 – 12:30
Location: EOW 503

Course Objectives
To improve our knowledge of how transportation is integrated within the domain of sustainability and how to better allocate scarce transportation infrastructure resources to the competing needs of urban communities.

Learning Outcomes
After successfully completing this course you will be able to:
1. Within the context of a group project, demonstrate how to conceptually formulate a transportation problem to create a foundation for engineering analysis
2. Use the general systems approach to solve sustainability issues in transportation design
3. Formulate and describe the structure of transportation trade-off analyses
4. Describe transportation analysis techniques and how they are incorporated into a systems methodology

Syllabus

Schedule (tentative):

Sep 10 Introduction to sustainable transportation planning and group project (no lab)
14 The big picture – ch 1 + conceptual formulation
17 Sustainable transportation – ch 2 + system dynamics
21 Transportation and Public Health – ch 3 + utility theory
24 Measurement criteria – ch 14
28 Scenario development – ch 4

Oct 01 Principles of street design – ch 5 + Quiz #1
05 Transportation analysis techniques + functional analysis
08 Transportation analysis techniques continued
12 Thanksgiving Day – classes cancelled
15 First project presentations (conceptual formulation)
19 1st project presentations continued
22 1st project presentations continued  
26 Pedestrians – ch 6 + optimisation of preferences (LP)  
29 Bicycles – ch 7 + transportation algorithm  
Nov 02 Transit – ch 8 + multi-objective decision models  
05 Motor vehicles – ch 9 + geometric optimization models  
09 Reading Break – Classes cancelled  
12 Parking – ch 10 + dynamic programming  
16 Carsharing – ch 11 + strategic planning  
19 Mass transit station design – ch 12 + Quiz #2  
23 Transportation demand management – ch 13  
26 Connecting the dots + second project presentations (Methodology)  
30 Connecting the dots continued + 2nd project presentations  

Dec 03 Review + Project Reports (hard copies) due by 5:00 PM in my office + 2nd project presentations continued  

**CIVE 360: A01 / CRN 10621**  
Lecture Days: Mon, Thur  
Lab Days: Thur  
Time: 10:00 – 11:20  
Time: 3:00 – 5:50  
Location: MAC D115  
Location: ELW B220  

**Required Text**  
Title: *Sustainable Transportation Planning: Tools for Creating Vibrant, Healthy, and Resilient Communities*  
Author: Jeffrey Tumblin  
Publisher: John Wiley & Sons, Inc.  
Year: 2012  

**References:**  
CIVE 360 Course pack: *References for Transportation System Design Project* (digital or hard copy)  

**Assessment:**  
14 In-class exercises (subtract 3-lowest marks) = 22% (2% each x 11)  
10 Labs (6 lab assignments) = 18% (3% each x 6)  
Quiz #1 = 10%  
Quiz #2 = 10%  
1st Presentation = 10%  
2nd Presentation = 10%  
Final Report = 20%  

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.  

There will be no supplemental examination for this course.  

**Note to Students:**  
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair’s Secretary to set up an appointment.
Accommodation of Religious Observance
See entry in current Undergraduate Calendar

Policy on Inclusivity and Diversity
See entry in current Undergraduate Calendar

Standards of Professional Behaviour
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour in current Undergraduate Calendar, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult entry in current Undergraduate Calendar for the UVic policy on academic integrity.

Course Lecture Notes
Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.