University of Nevada, Las Vegas
Howard R. Hughes College of Engineering

CEE 795: Transportation Systems Evaluation
WRI-C233

Monday and Wednesday
5:30 – 6:45 PM

CLASS SYLLABUS – Fall 2010

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SEB 3214
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OFFICE HOURS:

Monday and Wednesday
3:30 – 5:00 PM
COURSE DESCRIPTION

This course covers concepts fundamental to the evaluation of transportation investments. It discusses concepts and principles of economic analysis including the estimation of transportation impacts. The analysis includes consideration of monetary as well as non-monetary aspects. Some of the aspects that are considered include impacts on congestion, safety, air quality, noise, and the socio-economic environment. Evaluation techniques on the basis of costs and benefits are presented in this course. A semester long project provides opportunities to undertake a real-world evaluation of transportation investment alternatives. State-of-the-art software and models is used to estimate some of the impacts associated with each alternative.

COURSE MATERIAL

The course will be taught using material from various books and journal papers. Most of the required reading material will be placed on the course WebCampus website. The primary reference contain material directly relevant to the course. The other references contain material of broader interest to the course. Several software packages will be use to further enhance concepts, apply gained knowledge, and address real-world problems.

REFERENCES

Primary:


Other:


PREREQUISITES

Undergraduate calculus, basic probability.
GRADING

- Attendance and class participation 15%
- Reading and assignments 15%
- Midterm 15%
- Class presentations 15%
- Final project 40%

ACADEMIC ETHICS

Ethics in this course are very serious:

1. If a student is found cheating on an exam, he/she will receive an F in this course.
2. As I stated earlier, students can work in groups to do the homework, but each student is responsible for his/her own work. Students that hand in nearly identical homework will not receive credit for that assignment.
3. Academic Misconduct – “Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution.” An example of academic misconduct is plagiarism: “Using the words or ideas of another, from the internet or any source, without proper citation of the sources.” See the “Student Academic Misconduct Policy” (approved December 9, 2005, located at <http://studentlife.unlv.edu/judicial/misconductPolicy.html>).
4. Copyright - The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. YOU ARE INDIVIDUALLY AND SOLELY RESPONSIBLE FOR VIOLATIONS OF COPYRIGHT AND FAIR USE LAWS. THE UNIVERSITY WILL NEITHER PROTECT NOR DEFEND YOU NOR ASSUME ANY RESPONSIBILITY FOR EMPLOYEE OR STUDENT VIOLATIONS OF FAIR USE LAWS. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. To familiarize yourself with copyright and fair use policies, you are encouraged to visit the following website: <http://www.unlv.edu/committees/copyright/>.

CLASS ATTENDANCE

Students’ attendance to class is highly recommended. Some of the lectures and assignments will deal with material that is not in the text. We will also be doing many classroom activities. Please inform the instructor if you intend to miss a lecture for personal reasons.

COURSE WEBSITE AND EMAIL

WebCampus will be highly utilized to post course material. Please see https://webcampus.nevada.edu for instructions on logging into your account. In accordance with UNLV policy, all students are to be contacted using their UNLV email. (user_name@unlv.nevada.edu). This will be the email address that
I use. If you don’t know your email address, then go to http://rebelmail.unlv.edu/. Do NOT use the e-mail tool provided in WebCampus, instead use your UNLV e-mail address.

DISABILITY RESOURCE CENTER:

The Office of the Executive Vice President and Provost and Faculty Senate have endorsed the following statement to be included in all course syllabi. [NOTE: Over two-thirds of the students in the DRC reported that the syllabus statement, often read aloud by the faculty during class, directed them to the DRC office.]

The Disability Resource Center (DRC) coordinates all academic accommodations for students with documented disabilities. The DRC is the official office to review and house disability documentation for students, and to provide them with an official Academic Accommodation Plan to present to the faculty if an accommodation is warranted. Faculty should not provide students accommodations without being in receipt of this plan.

UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, offering reasonable accommodations to qualified students with documented disabilities. If you have a documented disability that may require accommodations, you will need to contact the DRC for the coordination of services. The DRC is located in the Student Services Complex (SSC), Room 137, and the contact numbers are: VOICE (702) 895-0866, TTY (702) 895-0652, FAX (702) 895-0651. For additional information, please visit: <http://studentlife.unlv.edu/disability/>.

SUGGEST STRATEGY

Students must complete and understand the homework. Students should not wait to clarify issues they did not comprehend regarding class or homework. There are no bad questions. Finally, students should take advantage of office hours. If a student has conflict with the suggested hours, the student must contact the instructor (phone or email) to set up an appointment. Please do not wait till the last moment to schedule an appointment. Only students requesting appointment in advance (at least one day) will be considered.

FINAL PROJECT: Evaluation of Transportation Investment Alternatives

Objective

To expose the students to the process of evaluating transportation investment alternatives in the context of large-scale transportation systems. The project involves understanding transportation demand and supply interactions as well as the overall impacts of transportation systems on our society so as to address real work problems using state-of-the-art modeling tools.

Description

This project utilizes existing models and software to conduct an economic evaluation of different transportation investment alternatives. State-of-the-art network analysis and evaluation tools will be used to evaluate the performance of the Las Vegas vehicular roadway network for each of the proposed alternatives. The objective of the project is to conduct an economic evaluation of several alternatives for accommodating trucks on urban freeways in the Las Vegas vehicular roadway network.
Alternatives

1) Truck Only Lanes
2) Truck Restricted Lanes
3) Truck Only Toll Lanes
4) Truckways with Toll
5) Truck Bypass 1
6) Truck Bypass 2

Analysis

The economic evaluation of the alternatives must include at least the following aspects:

- Congestion,
- Safety,
- Emissions,
- Noise, and
- Impact on the socio-economic environment.

Team work

This is a semester-long project that requires a substantial amount of work. Hence, students will work in teams of two to three members each. The teams are as follows.

Team 1: (Alternatives 1, 3, 5, and do nothing)  
Naveen Veeramisti  
Andrew Nordland

Team 2: (Alternatives 2, 4, 6 and do nothing)  
Pankaj Maheshwari  
Vidhya kumaresan  
Peryce Nyagah

Report

Each team will organize in a CD/DVD all the material used during the semester to complete the project. The CD/DVD will include all the input data files, graphs, summary of procedures, experiment designs, experiment results, analysis and answers to the questions formulated for this project. A copy of the CD/DVD will be submitted to the instructor at the end of the semester. The CD/DVDs will be submitted on 11/29/2010.
# CEE 795  Transportation Systems Evaluation (Fall 2010)

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<thead>
<tr>
<th>Week</th>
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