West Virginia University
Department of Civil and Environmental Engineering
CE332 Introduction to Transportation Engineering
Spring 2013

Course Syllabus

I. General Information

Instructor: Dr. David Martinelli
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Text: *Traffic and Highway Engineering*, N. Garber and L. Hoel, PWS Publishing, Fourth Edition.
Meeting: MWF 9:00-9:50 ESB 801
Teaching Assistant: Andrew Poszich: aposich@mix.wvu.edu
Office Hours:

II. Course Description

Welcome to the world of transportation! Transportation is a necessary component to essentially all economic, recreational, and social activities. Transportation engineers are responsible for the planning, design, operation, and maintenance of the related infrastructure. The study of transportation can be extremely diverse and fascinating. This course will introduce you to the concepts and methods to effectively serve as a civil engineer in the transportation domain.

The field of transportation engineering branches across several modes including, highways, air, heavy rail, light rail, and water. Also, transportation covers both passenger and freight movements. In this course, you will be introduced a number of concepts and tools in the context of the *highway* mode, but these concepts transcend all modes of transportation.

This course has both lecture and project components. In lecture, you will be taught the technical and non-technical elements of the various topics and will be given opportunities to exercise these principles through homework assignments. The project component will provide you experience in addressing a contemporary issue in transportation.

III. Course Outline

The outline of the course will follow the text rather closely. This does not mean that the lecture material is taken directly from the text. The text and the lecture material are intended to complement each other. *The topics and number of lectures assigned to them are somewhat tentative and may be revised at any point in the semester*. There are a total of about 40 class lectures: about 35 are assigned to the topics and the remaining will be used for guest lectures, make-up, and

presentations. The topics which will be covered in this course are:

Module 1 : Driver, Vehicle and Roadway Characteristics
Module 2: Geometric Design
Module 3 : Highway Safety
Module 4 : Traffic Engineering Studies and Traffic Flow Theory
Module 5 : Highway Capacity Analysis
Module 6 : Transportation Planning, Traffic Forecasting
Module 7: Transportation Economics

IV. Attendance and Class Participation

Attendance is encouraged and *promptness* is expected. There is valuable information presented in lecture and, more importantly, every student contributes to the learning of others. In other words, your contributions are valuable, and your absence affects the learning of your classmates.

Class participation in the form of answering questions, raising interesting points, and expanding on the ideas of others is an important element of learning. Attendance and class participation will count for borderline consideration at the discretion of the professor in assigning final grades.

V. Homework

Homework will be assigned throughout the semester. Collaborative and interactive learning is encouraged in this course. This is done primarily through study groups where each group will submit its own assignment. Please note that:

1. Normally, study groups are to have four members.
2. Students pick their own group, however final approval from me is necessary
3. While collaboration within each group is encouraged, there should not be collaboration between groups. Also, all students should contribute to all aspects of the assignment rather than a parceling out of parts to individuals.
4. Everyone in the group must provide his/her signature on the assignment as confirmation that they have made a substantial contribution to the assignment. Putting your signature on an assignment that you did not contribute.
5. A peer review is conducted for each assignment
6. Groups are not permitted to change during the course of the semester without instructor consent.
7. All homework assignments are due at the start of class on the designated due-date as indicated on the assignment notice. Assignments may be submitted one day late for 50% grade, but will not be graded.

The format and presentation standard for homework is extremely high and constitutes 30% of the score. The format for homework assignments is given below. Failure to meet the proper format may result in your assignment not being accepted or significant deductions in scoring. The expectations for presentation of your homework is extremely high.

1. All homework must be submitted on 8 1/2 x 11 unlined or engineering coordinate paper and with writing on one side only
2. All pages must be clearly numbered
3. The printed names and signatures of all group members must appear on a separate cover page.

4. The course number, date, and assignment number must all appear on the cover page.
5. All assignments must be securely stapled
6. Assignments are expected to be of **highly legible quality**, with **all** of your reasoning **neatly and clearly** presented.

VI. Presentation and Term Paper

The laboratory portion of this course (1 credit hour) will consist of a comprehensive term paper and presentation of high quality covering an issue in transportation. The length of the paper should be approximately 15 pages double-spaced. Through the term paper, you will demonstrate your technical competence, understanding of the field of transportation, and ability to organize and express your points and ideas. The paper will be developed in an iterative fashion where-by you will receive feedback from me. In addition to the term paper, you will give an eight to ten minute presentation of your topic. More information will be given to you on the term paper and presentation as the course progresses. Additional lectures or exercises on important transportation topics such as traffic safety may be conducted for the remaining laboratory component of the course. *Any information provided in the laboratory section of the course will not be tested in the exam.*

VII. Exams

There are three exams during the semester (Mid February, Mid March, and Mid April). These exams are expected to take approximately 50 minutes. Unless otherwise specified, exams will be closed book and notes and an equation sheet will be provided for you. A cumulative two-hour final exam will be given at an assigned period during exam week.

VIII Course Grading

Group Homework	20%
Three Exams	35%
Final Exam	20%
Attendance and Participation	Boarder line consideration
Presentation	10%
Term Paper	15%