

Course: **CE 431 – HIGHWAY ENGINEERING**

Semester: Spring 2009

Course Format
and Credit Hrs: 3 hr Lecture

Prerequisites: CE332

Instructor: Dr. Leonel Medellin, Office # 629 Eng. Sciences Bldg.
304-293-3031 ext. 2659, imedelli@mix.wvu.edu

Schedule: Tuesday 9:30 to 10:45 A.M
Thursday 9:30 to 10:45 A.M

Location: Room 449, Engineering Sciences Building

Office Hours: Thursday 1:00 to 4:00 P.M and by appointment

Course Objectives: The objectives of this course are to present the theory of highway administration and finance, driver and vehicle characteristics, understand highway planning and data collection, operations and safety, highway drainage and the legal aspects related to highway engineering.

Expected Learning
Outcomes:

Upon successful completion of this course, the student will be knowledgeable on the art of geometric design, roadside design, and will learn about modern methods for traffic control and the most widely used technologies for highway materials and construction. In addition, the student will be familiar with background material on legislative, administrative, economic evaluation, traffic characteristics, as well as driver, pedestrian, and vehicle characteristics.

Required Text: Highway Engineering, 7th Edition, by Paul H. Wright & Karen K Dixon, John Wiley & Sons, 2004

Grading:

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
< 60	F

- Grade Assignment: Grades will be determined by averaging the three (3) one-hour quizzes (60%) and the homework problems (40%). Note that the final exam (which will cover material from the last third of the course) will count as the third quiz.
- Grading Policy: No make-up exams except by prior arrangement with instructor. Homework is due on the date specified. Ten (10) points per day will be deducted from any problem turned in after class on the day the problem is due.
- HW Assignments: There will be approximately 5-6 homework assignments during the semester which will be given at the end of the topics. You will have at least one week before the due date.
- Attendance Policy: Attendance is obligatory in this class. No student in this class may receive a grade higher than the percentage of regular class sessions attended. Students participating in official university activities must make arrangements with the instructor in advance. Being unprepared, sleeping in class, disrupting the class, or arriving late, may result in a recorded full or partial absence. In case of chronic illness or emergencies requiring multiple absences, the student should withdraw from the course.
- Academic Honesty: West Virginia University does not tolerate academic dishonesty. For this reason, collaborative work is not permitted except when indicated by the instructor. Check the *WVU Student Handbook (The Mountie)*, <http://www.arc.wvu.edu/rightsa.html>.
- Social Justice Statement: “West Virginia University is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and nondiscrimination. Our university does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.
- If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangement with Disability Services (304-293-6700).”
- Course Schedule: The following is an outline of the topics to be covered during the lecture periods. Please note that the topics listed (as well as their order and emphasis) are subject to change depending on the

interests, experience, and background of members of the class. Reading assignments are also shown. Additional reading assignments may be made from material given out in class.

Topic	Classes	Readings in Text
Introduction	1	Chap 1 pp. 1 – 16
Highway Administration and Finance	3	Chap 2 pp. 17 – 34
Driver and Vehicle Characteristics	3	Chap 5 pp. 105 – 123
Highway Planning and Data Collection	4	Chap 6 pp. 124-155
<i>**Exam No. 1**</i>	Feb 26	<i>**Exam No. 1**</i>
Highway Operations & Safety	3	Chap 8 pp. 213 – 233
Traffic Control Devices	2	Chap 11 pp. 276 – 302
Legal Aspects	2	Handouts
<i>**Spring Recess**</i>	Mar 17-19	<i>**Spring Recess**</i>
Crash Data Analysis	3	Handouts
<i>**Exam No. 2**</i>	Apr 7	<i>**Exam No. 2**</i>
Highway Drainage	2	Chap 12 pp. 303-347
Pavement Design	3	Chap 16, 18, 20 (parts)
<i>**Finals Week**</i>	May 4-8	<i>**Finals Week**</i>