CVEN 766 (Graduate Level)
Highway Design (2-3)
Credits: 3

Elective

Description: Theory and practice in highway design; highway classification and design criteria, location studies, design of vertical and horizontal alignment, cross section, intersections, environmental factors, and highway drainage elements.

Lecture: Lectures: MW 11:30 am – 12:20 pm, Room 104 – CE Building
Laboratories: F 12:40 pm – 3:30 pm, Room 221 – CE Building

Prerequisites: CVEN 307

Text: CoursePack Title: CVEN 456: Highway Design - Spring 2017
Instructor: Dr. Dominique Lord
CoursePackID: 562093
OrderID: 587522
CoursePack ISBN: 9781506605852
CoursePack Format: Print

Available at the A&M bookstore and possibly at Barnes & Noble.

Course Objectives: Provide fundamental engineering bases for designing rural and urban highways.

Course Instructor: Dr. Dominique Lord
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Course website:
http://ceprofs.civil.tamu.edu/dlord/CVEN_456_Course_Material.htm

Office Hours: Monday: 1:00 pm – 2:30 pm
Wednesday 1:00 pm – 2:30 pm
Please note that I have an open door policy (better to send me an e-mail)

Topics Covered: Highway Functional Classification (Week 1 – January 26)
Highway Design Process (Week 2)
Route Selection (Week 3)
Earth Work/User and Construction Costs (Week 4)
Design Controls and Criteria (Weeks 5 & 6)
Sight Distance (Week 7)
Horizontal and Vertical Alignments (Weeks 8 & 9)
Cross Section Design (Weeks 10 & 11)
At-Grade Intersections (Week 12)
Application of Geometric Design Principles (Week 13)
Environmental Issues (Week 14)

Professional Content:
Preparation for engineering practice
Design experience
Incorporation of engineering standards and realistic constraints that include
most of the following considerations: economic; environmental;
sustainability; manufacturability; ethical; health and safety; social; and political.

Outcomes Addressed:
Ability to apply knowledge of basic mathematics, science, and engineering
Ability to design a civil/ocean engineering system to meet desired needs
Ability to formulate and solve civil/ocean engineering problems
Understanding of professional and ethical responsibility
Understanding of the impact of civil/ocean engineering solutions in a global/societal context
Appreciation and knowledge of current civil/ocean engineering issues

Course Evaluation:
Laboratories: 25% (2-3 laboratories)
Term Project: 55%
Assignments: 10% (3-4 assignments)
Term Paper: 10%

Grading Scheme:
A = 90% or above, B = 80 to 89%, C = 70 to 79%, D = 60 to 69%,
F = below 60%

Graduate Students:
This class is a stacked class with CVEN 456, which is a senior-level undergraduate class. Graduate students enrolled in the class will be required to satisfy all of the undergraduate requirements, plus additional requirements assigned by the professor. The graduate students will be assigned an additional term paper. The paper will be assigned early October.

Academic Honesty:
“An Aggie does not lie, cheat, or steal or tolerate those who do.” Students are expected to understand and abide by the Aggie Honor Code presented on the web at: http://www.tamu.edu/aggiehonor. No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. These are more fully defined in the above web site. Violations will be
handled in accordance with the Aggie Honor System Process described on the web site.

**E-mail:** Communication via e-mail (questions on homework, exams, class examples, etc.) is encouraged. As much as possible, questions submitted via e-mail will be answered to the sender as soon as possible. The instructor will use the e-mail system to make any relevant notifications. E-mails may also be used to distribute clarifications on class lectures, homework, exams and problem solutions. Use of e-mail is strictly voluntary. If you would like to receive course-related e-mail, send the instructor an e-mail message, indicating your name, the course, the section, and your e-mail address.

**ADA Policy:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of student Life, Services for Students with Disabilities in Room B118 of the Cain Hall Building, or call 845-1637.

Prepared by: Dominique Lord  Date of Preparation: Jan. 11, 2017