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: MF 11:30 am – 12:20 pm, Monday in Room 221; Friday in Room 104 – HEB Building
Laboratories: W 11:30 pm – 2:40 pm, Room 221 – HEB Building

**Prerequisites:** CVEN 307

**Text:** CoursePack Title: CVEN 456: Highway Design - Spring 2018
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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(979) 458-3949
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Course website:
[http://ceprofs.civil.tamu.edu/dlord/CVEN_456_Course_Material.htm](http://ceprofs.civil.tamu.edu/dlord/CVEN_456_Course_Material.htm)

**Office Hours:** Monday: 1:00 pm – 2:30 pm
Friday 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 16)
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)
Environmental Issues (Week 13)
Week 14: time spent on capstone project

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: 20% (3-4 assignments)

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

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.

Attendance:
The students need to review Student Rule 7, which explains attendance policies and excused absences. Link: http://student-rules.tamu.edu/rule07

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 Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit [http://disability.tamu.edu/](http://disability.tamu.edu/)

Prepared by: Dominique Lord Date of Preparation: Jan. 10, 2018