

Course Description: CVEEN 3520 Transportation Engineering

Offered every spring

Catalog Data

4 Credits, required Course for CVEEN Major: Introduction to the design, analysis, and planning of road transportation systems. Highway surveys, location, and plans; geometric design; drainage systems. Fundamentals of traffic engineering; introduction to traffic flow theory; transportation planning, and traffic operations

Textbook

Required, Mannering & Kilareski, "Principles Of Highway Engineering And Traffic Analysis" ISBN#: 0-471-13085-0, Wiley, 2nd Edition, Paperback, 1998

Coordinator: Wayne Cottrell

Goals

- to introduce the theoretical concepts that underpin highway and traffic engineering
- to apply these ideas to a series of practical traffic engineering problems
- to integrate 'highway' with 'traffic' engineering
- to understand the principles underpinning highway and traffic engineering
- to learn the 'jargon' of highway and traffic engineering
- to prepare for more study in the field
- to teach each student communication skills and data analysis techniques
- to lay down the principles underpinning traffic engineering
- to understand the 'jargon' of traffic engineering

Prerequisites

MATH 2250 and WRTG 2010 and one of CVEEN 2150 or MGEN 1400

Topics

- traffic flow theory
- traffic control
- transportation forecasting and evaluation
- route location
- contract law & bidding
- surveying & setting out
- spiral curve
- sight distances
- superelevation
- mass haul diagram
- geometric design aesthetics
- design speed and curves
- understand the principles of pavement design
- understand the principles of highway drainage
- earthworks design
- intersection layout
- speed/friction/power/braking distance/skidding/centrifugal force
- Principles of Traffic Flow
- Intersection Control
- Highway Capacity of Freeways and two-lane Highways
- Capacity and Level of Service at Signalized Intersections
- Forecasting Travel Demand
- Evaluating Transportation Alternatives