

CEE 351

Transportation Engineering

Catalog data: 20-257-351, 3 cr. Traffic engineering concerns the planning, design, operation, control, and management of roadways and their networks to provide for the safe, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods. 3 hours lecture.

Textbook: N. J. Garber and L.A. Hoel, *Traffic and Highway Engineering* 3rd Edition, 2002, Brook/Cole Publishing, ISBN 0-534-38743-8

References:

- William R. McShane, Elena S. Prassa, and Roger P. Poess, *Traffic Engineering*, 3rd Edition, 2002, Prentice Hall Publishing, ISBN: 0134613368
- Institute of Transportation Engineer, *Traffic Engineering Handbook*, 5th Edition, 1999
- Institute of Transportation Engineer, *Traffic Detector Handbook*, 2nd Edition
- Transportation Research Board, *Highway Capacity Manual*, 2000

Instructor: Dr. Heng Wei, Assistant Professor of Transportation Engineering.

Goals: This course is designed for undergraduate students who are interested in an overview of the current practices, technologies and scientific principles applied to surface transportation systems. This course will introduce the fundamentals of traffic engineering, control and design, as well as principle of transportation planning and Intelligent Transportation Systems (ITS).

Prerequisites Primary knowledge of statistics.

by Topic:

Topics:

1. Traffic Engineering Studies
2. Fundamental Principles of Traffic Flow
3. Capacity and Level-of-Service of Freeway Sections and HCS application
4. Capacity and Level-of-Service at Signalized Intersections and HCS application
5. Transportation Planning Process and Forecasting Travel Demand
6. Transportation System Management
7. Evaluating Transportation Alternatives
8. Intersection Design
9. Geometric Design of Highway Facilities
10. Basics of Intelligent Transportation Systems

Computer usage: Highway Capacity Software (HCS)

Laboratory None

Projects:

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