

Engg 120 – Transportation Engineering-I, Spring 2008
MON & WED 6:30-7:55 pm, 204 Weed Hall

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Office Hours: Wednesdays, 3:00 pm – 4:30 pm, and by appointment.

Text: Transportation Engineering & Planning, 3rd Ed., C.S. Papacostas and P.D. Prevedouros

Additional Reference: Highway Capacity Manual 2000 (*Selected sections will be distributed in class as needed*)

Grading:	Homework	20%
	Term Project	25%
	Midterm Exam	25%
	Final Exam	30%

Course Description: This course is intended to introduce principles and methods used by engineers and planners in the planning, design and operation of transportation systems. It emphasizes principles and methods, which are applicable to all modes of transport and to all contexts. The course will review modes of transport and present fundamentals in operation and control of transportation vehicles, design of transportation facilities, urban transportation and transportation planning.

Homework: Assignments will be given approximately weekly and will be due on the date specified. Homework must be neat, legible, and show all work clearly. Late homework will not be accepted unless arrangements have been made prior to the scheduled due date. Otherwise, 10 points will be cut for each late day.

Term Project: A project will be assigned during the semester. The project requirements and deadlines will be outlined in the assignment.

Attendance: Attendance is mandatory. Unexcused absences will have an adverse effect on your grade.

Prerequisite: ENGG 26: Dynamics

**Tentative
Outline:**

Date	Topic	Suggested Reading
Jan 28	Introduction and Background	Handout 1, Ch.1 & Ch.5
Jan 30	Roadway Design: Equations of Motion	Handout 2, Ch.2.1 – 2.2
Feb 11	Human Factors	Handout 3, Ch.2.3
Feb 13,20	Geometric Design: Horizontal Alignment, Superelevation Design, Vertical Alignment	Handouts 4 and 5, Ch. 2.4- Ch.2.4.7
Feb 25	Geometric Design (cont): Stopping and Passing Sight Distance	Handout 6, Ch.2.4.8 – 2.4.9
Feb 27	Traffic Stream Flow Models: Vehicular Stream Models and Variables	Handout 7, Ch.3.1 – 3.3
Mar 3	Vehicular Stream Equations & Diagrams, Shock Waves in Traffic	Handout 8, Ch.3.4 & 3.6
Mar 5	Stream Measurements: The Moving-Observer Method, Review and Term Project Assignment	Handout 9, Ch.3.5
Mar 12	Midterm Exam	-
Mar 24	Exam Solutions, Capacity and Level of Service Analysis: Transit Systems	Handout 10, Ch.4.3 - 4.4
Mar 26	Transit Systems (cont), Highways: Uninterrupted Flow- Freeways	Handout 11, Ch.4.5
Mar 31	Highways: Uninterrupted Flow- Freeways (cont)	Handout 11, Ch.4.5
Apr 2, 7	Highways: Interrupted Flow- Signalized Intersections	Handout 12, Ch.4.6
Apr 9	Capacity of Signalized Intersections	Handout 13, Ch.4.7
Apr 14	LOS Analysis of Signalized Intersections	Handout 14, Ch.4.7
Apr 16	Urban and Intelligent Transportation Systems	Handout 15, Ch.6.5
Apr 23	Transportation Planning, Travel Demand Forecasting: Trip Generation	Handout 16, Ch.7, Ch.8.1 – 8.2
Apr 28	Trip Distribution	Handout 17, Ch.8.3
Apr 30	Mode Choice	Handout 18, Ch.8.4
May 5	Trip Assignment	Handout 19, Ch.8.5
May 7	Other Forecasting Models-Elasticity, Term Project Due	Handout 20, Ch.8.7
May 14	Final Exam (6:15-8:15 pm)	-