CE 6309 Traffic Flow Theory Spring 2003 MW 5:30-6:50 (408 WH)

Instructor: Sia Ardekani

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Office Hrs: M-TH 9:30-11:30 or by appointment

Textbook: <u>Traffic Theory</u>, by Denos C. Gazis, Kluwer Publishers, 2002.

Course Objectives:

To explore relations among speed, density, and flow of vehicular traffic; deterministic as well as stochastic models of traffic flow; and applications of traffic flow theory to solution of traffic problems.

Basis for Grade: HW (30%), Term project (25%), Presentation (5%), Exam (40%)

Additional References:

- 1. Traffic Flow Fundamentals, by Adolf D. May, Prentice-Hall, 1989 (on 24-hr reserve).
- 2. <u>Traffic Flow Theory A Monograph</u>, by Gerlough and Huber (on 24-hr reserve).
- 3. <u>Fundamentals of Transportation and Traffic Operations</u>, by C.F. Daganzo, Pergamon Press, 1997.
- 4. Traffic Flow Theory & Control, by D.R. Drew, McGraw Hill, Inc., 1968.
- 5. Introduction to the Theory of Traffic Flow, by W. Leutzbach, Springer-Verlag, 1988.
- 6. <u>Two-Lane Highway Traffic Operations: Theory and Practice</u>, by J.R. McLean, Gordon and Breach Science Publishers, 1989.

If you require an accommodation based on disability, please arrange to meet with me during the first week of the semester to be sure you are appropriately accommodated.

TOPIC	PERIODS	READING
Introduction	1	
Statistical Tools	4	Ref1/pp 95-110 Ref2/Ch3 Ref4/Ch7 Ref5/pp40-73 Handout
Headway Distributions		
and Gap Acceptance	3	Ref1/Ch2 Ref4/Ch9
Speed, Flow, Density		
Measurements	3	Text/pp 1-6 Ref1/pp 116-130 Ref1/pp 192-200 Ref2/Ch2 Ref5/pp 75-93 Ref6/Chs 3,4
Speed, Flow, Density Relati	ons 3	Text/pp 9-12 Ref1/pp 283-303 Ref2/Ch4 Ref5/pp 93-101
Bottleneck Analysis	2	Text/pp 6-9, 12-16 Ref1/pp 321-360 Ref3/Ch 2
Network Models	2	Text/pp 19-21 Handout
Fuel Consumption Models	1	Handout
Car-Following Models	3	Text/pp 21-36 Ref1/Ch6 Ref2/Ch6
Overtaking on 2-lane Roads	2	Handout
Multi-Lane Theories	3	Text/pp 17-19 Ref2/Ch7 Handout