

CIV 305 – Transportation Systems Analysis I

Current Catalog Description: Focused on highway transportation planning and traffic analysis. Topics include transportation planning, performance analysis of highway and road design, highway segments, highway and airport pavement design, geometric design, sight elevations and alignment, highway traffic operations, queuing theory and modeling, traffic analysis and control, travel demand models, ethics, sustainability, and environmental considerations during transportation planning.

Prerequisite: AMS 361 or MAT 303; CIV major

Corequisite: None

Textbooks and/or Other Required Material: Required Materials:
Garber, N., & Hoel, L. (2014). Traffic and highway engineering. Cengage Learning (Fifth Edition)

This course is: Required

- Topics Covered:**
1. The Profession of Transportation
 2. Traffic Engineering Studies
 3. Fundamental Principles of Traffic Flow
 4. Highway Safety
 5. Intersection Design & Control
 6. Forecasting Travel Demand
 7. Geometric Design of Highway Facilities

Course Learning and Student Outcomes:	Course Learning Objectives	<u>ABET Student Outcomes</u>
	Ability to apply the engineering fundamentals for the analysis of transportation systems engineering problems in general, and traffic and highway engineering in particular.	1
	Ability to apply traffic and highway engineering principles to design and conduct transportation studies, critically analyze and interpret data in traffic and highway engineering.	1, 2, 6, 7
	Ability to identify, formulate, and solve transportation systems planning /design/engineering problems	1, 6
	Ability to communicate effectively concerning the contemporary issues in transportation and the proposed solutions.	3
	Maintaining a deeper understanding of the impact of transportation systems to the economy and to the society.	2
	Gaining knowledge of modern techniques and standards in transportation systems.	7

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