Spring 2019

TRAN 625-852: Public Transportation Operations and Technology

Steven Chien

NEW JERSEY INSTITUTE OF TECHNOLOGY

TRAN 625 (SPRING 2019)
PUBLIC TRANSPORTATION OPERATIONS AND TECHNOLOGY
Sections: 102 & 852

INSTRUCTOR: Dr. Steven Chien, Room 280, Tiernan Hall
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OFFICE HOURS: By Appointment

LECTURES: Online

GRADING: Class Participation 10%
Homework 30%
Midterm Exam 30%
Final Exam 30%

COURSE DESCRIPTION:

The course provides the basic introduction to the field of public transportation operations, technology, and analysis. Approaches provided in this course will be applicable to different types of public transportation system problems. The approaches will corporate concepts from economics, engineering, operations research, and theoretical analysis. Numerical examples will be provided to build understanding of the concepts and to indicate how they can be applied in practice to various modes and problems.

REQUIRED TEXTS:

Vukan R. Vuchic, Urban Transit Systems and Technology, John Wiley & Sons, Inc., 2007. *http://www.wiley.com/WileyCDA/WileyTitle/productCd-047175823X.html*

TENTATIVE SCHEDULE

WEEK	TOPIC	READING .
Week 1	Course Introduction	Class Notes
Week 2	Course Introduction	Class Notes
Week 3	Public Transportation System Overview	Chap. 1
Week 4	Classic Optimization Methods	Class Notes
Week 5	Vehicle Characteristics and Motion	Chap. 3
Week 6	Station-to-Station Travel Analysis	Chap. 3
Week 7	Urban Passenger Transport Modes	Chap. 2
Week 8	Transportation System and User Costs	Class Notes
Week 9	**Spring Recess (No Classes Scheduled)**	
Week 10	**Midterm Exam**	
Week 11	Transportation System Performance	Chap. 4
Week 12	Microscopic Simulation Concepts and Tools	Class Notes
Week 13	Simulation of Bus Operations - Case Study	Class Notes
Week 14	Transit Service Quality & Headway Regularity	Class Notes
Week 15	Concepts & Intelligence in Multimodal Transportation	Chap. 7 & 8
Week 16	**Final Exam**	