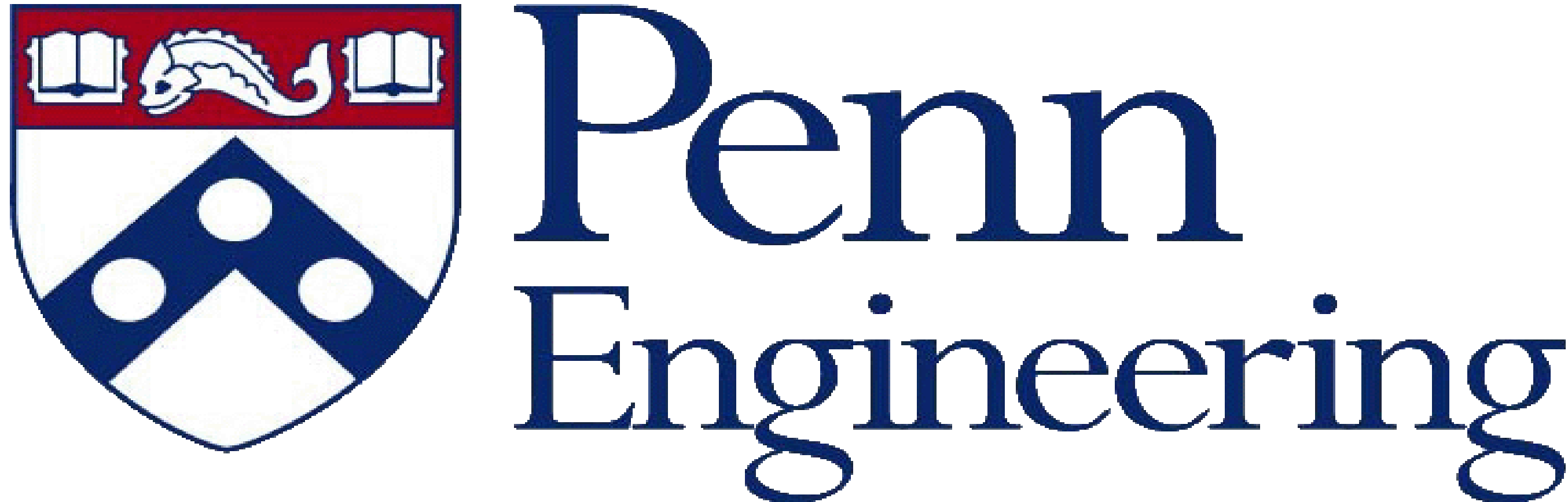


Urban Transit for Livable Cities

<i>Section</i>	1. Cities and Transportation: Evolution of Transport Modes	2. Highway Transit: Buses, Trolleybuses, BRT and Paratransit	3. Rail Transit: Tramways/ Streetcars, LRT, Metro, Regional Rail	4. Rail Transit Characteristics, Operations and Roles	5. Rail Transit Networks, Scheduling and Performance	6. Fare, Financing, Ownership and Regulation	7. Transit Planning, Mode Selection and Design	8. Transportation for Livable Cities: Policies and Implementation Measures
<i>Module</i>								
1.	Impacts of Transportation on Cities	Definitions and Characteristics	Characteristics of Rail Transit Modes	Rail Transit Stops and Stations	Network Planning Objectives	Objectives in Fares Determination	Short-and Long-Range Transit Planning	City Sizes and Roles of Different Transport Modes
2.	Evolution of Transport Modes with City's Growth	The Vehicles	Tramways/Streetcars and Light Rail Transit - LRT	Transfer and Integrated Stations	Network Types: Independent vs. Integrated Lines	Structure of Fares and Their Characteristics	Planning Procedure	Short-Term Solutions vs. Long- Term Optimum System
3.	Definitions of Transit Modes	Trolleybus System and Vehicles	Metro/Rail Rapid Transit	Intermodal Rail Stations and Feeder Modes	Geometric Forms of Transit Lines	Fare Collection and Payment Control	Travel Demand Forecasting	Defining of Balanced Intermodal Urban Transportation
4.	Three Categories of Transit Modes	Bus Ways, Lanes and Stops	Regional (Commuter) Transit - RGR	Train Travel Control: ATP, ATO, and ATS	Transit Line Scheduling: Input Information and Operating Standards	Types and Levels of Fares	Modal Split and Trip Assignment	Structure of Travel Costs by Different Modes
5.	Technologies of Transit Modes	Bus Lines, Networks and Transfer Stations	Review of the Family of Rail Transit Modes	Crewless Train Operation – CTO or UTO	Transit Scheduling Computations	Principles and Trends in Financing Transit Systems	Design of Alternative Plans	Policies and Measures for Achieving Balanced Transportation
6.	Classification and Characteristics of Transit Modes	Intermodal Bus-Rail Transfer Stations	Rolling Stock	Automated Medium-Capacity Transit Modes	Schedule Presentations	Government Agencies and Professional Organization for Transit	Comparative Analysis, Evaluation and Selection of Plans	Transit Use Incentives
7.	Elements of Transit Systems Operations	Bus Rapid Transit – BRT	Geometric Elements of Line Alignments and Cross Sections	Monorail and Low-Speed Maglev	Crew Scheduling or Run Cutting	Transit System Development and Regulation	Preliminary Transit System Design	Auto Use Disincentives
8.	Performance Attributes of Transit Operation and Service	BRT in Developing and in Industrialized Countries	Rail Transit Rights-of-Way: Surface, Aerial and Tunnel	Specialized Technology Systems	Timed Transfer Systems - TTS	Purposes and Types of Transit Regulation	Integrated Regional Rail Network of SEPTA in Philadelphia, PA, USA	Cities with Rapid Increase of Auto Ownership
9.	Transit Line Capacity	Paratransit: Definition and Classification	Construction Methods of Shallow and Deep Tunnels	Rail Transit Performance and Costs	Accelerated Services	Regulated and Deregulated “Free Market Transit”	Planning Further Modernization of SEPTA’s Regional Rail	Present Problems and Prospects in Different Cities
10.	Vehicle Motion, Regimes of Travel and Station-to-Station Travel Time	Paratransit Characteristics and Roles	Rubber-Tired Metros	Present and Future Role of Rail Transit Modes	Modeling and Systems Analyses in Transit	Functionally Integrated Intermodal Transit System	Upgrading “Subway-Surface Trolleys” in Philadelphia into Light Rail Transit	Leading Livable Cities with Balanced Transportation System



Course Instructor: Emer. Prof. Vukan R. Vuchic
Project/Technical Manager: Eugene Chao, PMP

February 1th 2017