

UTM523 Urban Railway Systems

Level: 5

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

Urban Railway Systems covers the range of urban railway technology, management and operational activities, from demand-based railway planning to inter-modal transport operations. Areas addressed include system evaluation, asset maintenance and management, marketing, safety and rolling stock acceptance issues, human resource management, Singapore's railway industry structure and environmental issues, as well as operations management for the rail system.

Topics:

- Overview of urban railway systems
- Railway management and business planning
- Railway ownership and structure
- Railway safety
- Asset maintenance and management
- Estimating demand for new stations and services
- Public transport network modelling
- Timetabling and rostering
- Track and signalling infrastructure design
- Terminal and station design

Textbooks:

Piers Connor/ Nigel Gregory Harris: Designing and Managing Urban Railways 2015 A & N Harris
ISBN-13: 9780952999751

Institution of Engineer: Railway System Handbook Singapore (IES)
ISBN-13: 9789811420061

Learning Outcome:

- Demonstrate the knowledge of the key elements of the planning, management, and economics of railway systems
- Differentiate various railway rolling stock system designs
- Compare different railway infrastructure & track systems
- Evaluate train control systems
- Analyse the fundamental principles of railway economics
- Examine the strategy for adopting new technology
- Evaluate the optimal rail-based systems for cities
- Assess systems engineering for dependability
- Debate the pros and cons of various railway ownership structures
- Improve the ergonomics and human factors for railways

Assessment Strategies (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	TUTOR-MARKED ASSIGNMENT 1	20
	TUTOR-MARKED ASSIGNMENT 2	30
Overall Examinable Components	Written Exam	50
Total		100