



Jordan University of Science and Technology
Faculty of Architecture And Design
Planning And Urban Studies Department

UP791 Special Topics In Urban Planning - JNQF Level: 9

First Semester 2024-2025

Course Catalog

3 Credit Hours. This course provides an in-depth analysis of airport and railway engineering with a focus on the planning, design, and operational aspects. It is designed to cover fundamental principles, advanced design considerations, and current technologies in the construction and operation of airports and railways. Key issues such as safety, sustainability, capacity, and integration with other transportation networks will also be explored.

Teaching Method: Blended

Text Book

Title	Airport Planning & Management
Author(s)	Alexander T. Wells and Seth Young
Edition	1st Edition
Short Name	1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
2	Railway Engineering	Satish Chandra and M.M. Agarwal	2nd Edition	
3	Planning and Design of Airports	Robert Horonjeff, Francis X. McKelvey	1st Edition	
4	Railway Operation and Control	Joern Pacht	1st Edition	

Instructor

Name	Dr. Amir Shtayat
Office Location	A3 307

Office Hours	Mon : 11:30 - 13:00 Tue : 11:30 - 13:00 Wed : 08:30 - 10:00 Wed : 12:00 - 13:00 Thu : 10:00 - 12:00
Email	aashtayat@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Tue : 09:30 - 11:30 Room: A3131

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Introduction to Airport and Railway Engineering	From 1 , From 2
Weeks 3, 4	Airport Planning and Design	From 1
Weeks 5, 6	Airport Operation and Management	From 1 , From 3
Weeks 7, 8	Railway Planning and Design	From 2
Weeks 9, 10	Railway Operation and Management	From 4
Weeks 11, 12	Sustainable and Smart Infrastructure	From 1 , From 2 , From 3 , From 4
Weeks 13, 14	Case Studies and Future Trends	From 1 , From 2 , From 3 , From 4

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand the principles of planning and designing airport and railway systems. [1K1][1L9K2]	15%	Homework and Assignments
Apply engineering standards and regulations in the design of airports and railways. [1K2][1L9K3]	15%	Homework and Assignments
Analyze operational strategies for airport and railway efficiency, safety, and sustainability. [1S1][1L9S1]	15%	Homework and Assignments, Team works and class

Evaluate the interaction between different transportation modes and urban infrastructure. [1S2] [1L9S3]	15%	Team works and class, Final Exam
Conduct feasibility studies for airport and railway projects. [1S4] [1L9C1]	15%	Final Exam
Design components of airports (runways, taxiways, terminals) and railways (tracks, stations, signaling systems) considering both technical and economic constraints. [1C5] [1L9C6]	25%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)													
K1	K2	K3	K4	S1	S2	S3	S4	S5	C1	C2	C3	C4	C5
15	15			15	15		15						25

Relationship to NQF Outcomes (Out of 100%)						
L9K2	L9K3	L9S1	L9C1	L9S3	L9C6	
15	15	15	15	15	25	

Evaluation	
Assessment Tool	Weight
Homework and Assignments	30%
Team works and class	20%
Final Exam	50%

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