

**Course Name:**

Planning and Design of Airports

Course Number: 20-582	Credit: 3
Program: Graduate	Course Type: Technical Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

This course aims to provide an understanding of air transportation systems and various aspects of airport and airline planning, design, and operations. It also focuses on understanding issues related to airport design and operations, as well as airline operations planning.

Course Content (outline):

- Chapter 1: Introduction and Overview
- Chapter 2: Aircraft and Flight Characteristics and Factors Affecting Airport Design
- Chapter 3: Air Traffic Management and Control
- Chapter 4: Airport Site Selection
- Chapter 5: Airport Planning
- Chapter 6: Structure and Components of an Airport
- Chapter 7: Constraints of Airport Surrounding Obstacles
- Chapter 8: Geometric Design of the Airport Airside
- Chapter 9: Signage and Lighting at Airports
- Chapter 10: Groundside Planning and Design
- Chapter 11: Helicopter Airports
- Chapter 12: Capacity and Delay Analysis
- Chapter 13: Airport Economics, Financial Planning for Airport Projects
- Chapter 14: Environmental and Economic Impact Assessment of Airports
- Chapter 15: Airline Operations Planning Issues
- Chapter 16: Global Airline Networks, Costs, and Flight Pricing Methods, Low-Cost Airlines
- Chapter 17: Different Levels of Airline Planning
- Chapter 18: Fleet Planning
- Chapter 19: Route Planning
- Chapter 20: Determining Flight Frequency
- Chapter 21: Flight Scheduling



- Chapter 22: Fleet Allocation
- Chapter 23: Aircraft Rotational Planning
- Chapter 24: Simultaneous Planning
- Chapter 25: Optimization Models in Airline Planning

References:

- Horronjeff, R., Mckelvey, F. X., Sproule, W. J., Young, S. B., Planning & Design of Airports, 5th Edition, McGraw-Hill, 2010.
- Ashford, N. Mumayiz, S. Wright, P., Airport Engineering, Planning, Design & Development of 21st Century Airports, 4th Edition, Wiley 2011.
- Well, A. T. Young, S. B., Airport Planning & Management, 5th Edition, McGrawHill, 2004
- Belobaba, P. Odoni, A., Barnhart, C., The Global Airline Industry, John Wiley & Sons, 2009.
- Bazargan, M., Airline Operations & Scheduling, Second Edition, Ashgate Publishing, 2010.