Course Name:
Planning & Design of Airports

Course Number:
20582

Credit:
3

Course Content (outline):

1. **Introduction & overview**
   a. Aeronautical foundations and specifications
   b. Evolutionary trends in air transport
   c. National and international organizations related to aviation.

2. **Aircraft and flying characteristics related to airport design**
   a. The main and most important features of airplanes as they affected airports
   b. The flight process and the principles of aviation affecting the design and planning of the airport

3. **Air traffic management and control**

4. **Airport site selection**

5. **Airport planning**
   a. airport system plan
   b. Airport master plan
   c. Airport project plan
   d. Demand forecasting methods for airport planning

6. **Airport design**
   - Configuration and components of the airports
   - Geometric design of the airfield
   - Airport classification and design standards
   - Runways
   - Runway configurations
   - Obstacle clearance requirements
   - Taxiways and taxilines
   - Airport lighting, marking and signage
   - Planning and design of the land side division
   - Passenger terminals
   - Load equipment
   - Air cargo facilities
   - Access to the airports

7. **Heliports**

8. **Analysis of capacity and delay**
   - various methods for calculating capacity and delays in airport

9. **Airport economics, financial planning for airport projects**

10. **Airport environmental planning**

11. **Airline operations and planning**
    - Overview of airline economics, markets, demand, pricing, revenue management and operating costs.
    - Different levels of airline planning
- Airline planning process
- Fleet planning
- Route planning
- Schedule development: frequency planning, timetable development, fleet assignment, aircraft rotation planning, simultaneous Planning
- Optimization models for airline planning: aircraft assignment, airplane routing, aircraft maintenance planning, crew scheduling, other optimization models for airline operations.

References:
6. Lecture notes, PowerPoint and articles presented or distributed in the classroom.