Major Elective1 : AIRPORT PLANNING AND DESIGN

Course Objective :

The main objective of this course is to make the students aware of the basic principles, Techniques and methodologies of planning and design of airports.

Course Contents :

History and development of aviation in India, Aviation organizations and their functions, Deregulation. Aircraft characteristics, Master plan, Site selection, Obstructions, Air traffic, Demand and forecasting, Airport configuration. Geometric design of landing area. Runway orientation, Exit taxiways, Separation clearance. Structural design of landing area, ESWL concepts, FAA method and LCN-PCN method of pavement design, Modern evaluation techniques. Runway capacity and its improvement, Delay related capacity, Gate position and gate capacity. Terminal area, Space requirements, Aircraft parking system, Terminal related visual aids. Air traffic control, Flight rules, Navigational and landing aids, VASI, PAPI enroute air traffic control, ILS, MLS. Airport drainage, Design runoff, Surface and subsurface drainage. Airline cost, Methods of costing, Pricing and policies, Hub and spoke operations.

Pre-requisite : Nil

Reference Books :

1. Khanna, S.K., Arora, M.G. and Jain, S.S., "Airport Planning and design, Nem Chand & Bros., Roorkee, 1999
2. Horenjeff, R. and McKelvey, F. "Planning and Design of Airports", Fourth edition, Mc Graw Hill Company, New York, 1994.
3. Ashford, N. and Wright, P.H., "Airport Engineering", Third edition, John Wiley and Sons, New York, 1992.

Practical:

1. Runway orientation and wind rose diagram (Data Collection and Drawing)
2. Computation of runway length with sketches: plans and sections
3. Corrected runway length calculations
4. Design of exit taxiway
5. Runway pavement design: LCN,FAA and CBR Methods
6. Flow of passenger and cargo in the terminal area.
7. Terminal lay outs
8. Runway drainage: Lay out and Design
9. Site visit to International/ Domestic airport
10. Semester problem