

AIRPORT PLANNING

(Elective-I)

Course Code: 15CE2107

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Course Outcomes: At the end of the course, the student will be able to

CO1: Describe the different components of airport and aircrafts.

CO2: Analyse the requirements of an airport layout with respect to international regulations.

CO3: Explain the airport runway design.

CO4: Design Taxiways & Aprons.

CO5: Summarise the concepts of the terminal service facilities.

UNIT-I

(10-Lectures)

AIR TRANSPORTATION

Airport terminology, component parts of Aeroplane, Classification and size of airports; Aircraft characteristics. Air traffic control need for ATC, Air traffic control network, Air traffic control aids –enroute aids, landing aids. Airport site location and necessary surveys for site section, airport obstructions.

UNIT-II

(10-Lectures)

PLANNING:

Airport master plan –FAA recommendations, Regional Planning, ICAO recommendations, Estimation of future airport traffic needs-layout of Air Port.

UNIT-III

(10-Lectures)

RUNWAYS:

Runway orientation – windrose diagram, basic runway length, corrections for elevation, temperature and gradient, runway geometric design, runway pavement design introduction.

UNIT-IV (10-Lectures)**TAXIWAYS AND APRONS:**

Loading aprons –holding aprons –Geometric design standards, exit taxiways –optimal location, design, and fillet and separation clearance.

UNIT-V (10-Lectures)**OTHER FACILITIES:**

Lighting, visual airport marking, airport lighting aids.

OPERATIONS AND SCHEDULING:

Ground transportation facilities; Airport capacity, runway capacity and delays.

TEXT BOOKS

1. Khanna S.K., Arora M.G., Jain S.S., “Airport Planning & Design”, 1st Edition, Nemch and Bros. Roorkee, 2009
2. Robert Horonjeff, Francis Mc Kelvey, William Sproule and Seth Young, “Planning and Design of Airports” 5th Edition, 2010.

REFERENCES

1. Heronjeff, R, Mc Kelvey, F.X, “Planning & Design of Airports”, 2nd Edition, Mc Graw Hill Book Co, 1994.
2. Norman J. Ashford, Saleh Mumayiz and Paul H. Wright, “Planning, Design and Development of 21st Century Airports”, 4th Edition, John Wiley & Sons, 2011.
3. Subramian K.P., “Highway, Railway, Airport and Harbour Engineering”, 1st Edition, Scitech Publications Private Limited, 2013.
4. Alexander T. Wells, Ed. D & Seth, B. Young, “Airport Planning and Management’, 5th Edition, 2008