

COURSE CODE	COURSE TITLE	L	T	P	C
1153AE101	AIRPORT PLANNING	3	0	0	3

Course Category:

Allied Elective

a. Preamble :

Obtain knowledge about the basic dividing of airports. Ability to formulate and solve problems in the design of airports, to be able to describe the process and methods of operating and utilization of airport capacity, able to formulate the problem around airports review by obstacle limitation. Know how to solve the problem of airport pavements. Get a basic understanding of the infrastructure of airports and airport connections to other modes of transport, to review the impact on the environment.

b. Prerequisite Courses:

- Nil

c. Related Courses:

- Nil

d. Course Educational Objectives :

- To understand and apply basic concepts of aviation regulations, and financing structure for airport
- To understand basic aircraft characteristics and impact on airport design

e. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Describe the different components of airport and aircrafts.	K2
CO2	Analyse the requirements of an airport layout with respect to international regulations.	K3
CO3	Explain the airport runway design.	K2
CO4	Design Taxiways & Aprons.	K2
CO5	Summarise the concepts of the terminal service facilities.	K2

Correlation of COs with POs:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	H	H	H	H	M			H	H			
CO2	H		H	H				H	H			
CO3	H		H	H				H	H			
CO4	H	H	H	H				H	H			
CO5	H	H	H	H				H	H			

H- High; M-Medium; L-Low

f. Course Contents :

UNIT I –AIR TRANSPORTATION **L-6**

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 –PLANNING **L-6**

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

UNIT III - RUNWAYS **L-6**

Runway orientation, basic runway length, corrections for elevation, temperature and gradient, runway geometric design.

UNIT IV – TAXIWAYS AND APRONS **L-6**

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

UNIT V – TERMINAL SERVICE FACILITIES **L-6**

Passenger, baggage and cargo handling systems; Lighting, visual airport marking, air port lighting aids, airport drainage. OPERATIONS AND SCHEDULING: Ground transportation facilities; Airport capacity, runway capacity and delays.

Total periods: 30

g. Learning Resources

i. Text Books:

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

ii. 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. Alexander T. Wells, Ed.D & Seth, B. Young, “*Airport Planning and Management*”, 5th Edition, 2008.
4. Subramian K.P., “*Highway, Railway, Airport and Harbour Engineering*”, 1st Edition, Scitech Publications Private Limited, 2013.