Birla Institute of Technology & Science, Pilani
Hyderabad Campus

FIRST/ SECOND SEMESTER 2020-2021

Course Handout Part II

Date: 12-08-2020

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No.	**:CE G545**
Course Title	**: AirportPlanning andDesign**
Instructor-in-charge	**: Sridhar Raju**

Scope and Objective of the Course:

Air Transport-structure and organization; forecasting air travel demand: trend forecasts and analytical methods; air freight demand; airport system; characteristics of the aircraft; airport planning: site selection, layout plan, orientation and length of runway; airport capacity and configuration; geometric design of runway, taxiway and aprons; passenger terminal function, passenger and baggage flow, design concepts, analysis of flow through terminals, parking configurations and apron facilities; air cargo facilities-flow through cargo terminals, airport lighting; airport drainage; pavement design; airport access problem; environmental impact of airports

Textbooks:

1. Robert M. Horonjeff,Francis X Mckelvey,Willian JSprouleandSeth BYoung,"PlanningandDesign ofAirports" McGraw-Hill ProfessionalPublishing, 6th Revision,2011

Reference books

1. NormanJAshford,SalehMumeyizandPaulH. Wright, "Airport Engineering:Planning,DesignandDevelopment of 21st CenturyAirports"John Wiley&Sons; 4th Edition, 2011

Course Plan:

Lecture No.	Learning objectives	Topics to be covered	Chapter in the Text Book
1-3	Introduction toairtransport	Need for the course, how an airplane flies, Organization	Chapter-1 T1
4-5	Characteristics ofaircrafts	Importance toaircraftcharacteristicsandbasicdimensions,aircraft weight, runwayperformance	Chapter-2 T1
6-7	Airportplanningstudies	Systemplan, masterplan, land-use plan	Chapter-4 T1
8-9	ForecastingForairportplanning	Forecastingmethods	Chapter-5 R1

10-11	Airport capacity	Capacity,factorsaffectingcapacityand delay	Chapter-7 R1
12-18	Runway	Layoutplan, Runwayorientation,Length of runway,runwaysystem dimensions	Chapter-6 T1
19-20	Air TrafficControl	Introduction to Air Traffic Management and AirportTraffic Control Tower	Chapter-3 T1
21-22	Taxiwaysandaprons	Widths andslopes,separationrequirement,sightdistance, exit taxiwaygeometryandlocation	Chapter-6 R2
23-30	Pavementdesign	Soil investigationand evaluation, FAA pavementdesign method, Designofflexible andrigid pavement,Joint and spacing, Continuouslyreinforcedpavement,pavement evaluation andmanagementsystem.	Chapter-7 T1 FAA Advisory Circular
31-32	Airportdrainage	Purpose,design storm for surface runoff,amountofrunoff,layout of surfacedrainage.	Chapter-9 T1
33-34	Environmentalimpact of airports	Impact on the life of the people living nearby, the effect on the Fauna and Flora.	Chapter-14 R1
35-36	Airportlighting	Requirements of visual aids, approachlighting,thresholdlighting,runwayand taxiwaylighting.	Chapter-8 T1
37-39	Air cargo facilities	Understand the design concepts for flow through terminals and to study the air cargofacilities-flow through cargo terminals	Chapter 10 and 11 T1
40-42	Passengerterminalfunctions	Terminal system, design considerations, planning process, aprongate system.	Chapter-10 R1

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Test 1	Sep 2020 30 minutes	15	Date shall be announced **after 31st Aug 2020**	Open Book
Test 2	Oct 2020 30 minutes	15		Open Book
Test 3	Nov 2020 30 minutes	15		Open Book
Assignments	2 to 4 days	20	continuous	Open Book
Project	1 month	10	Nov 2020	Open Book
Comprehensive	120 minutes	25	01/12 AN	Open Book

Chamber Consultation Hour: Any time I shall be available for clarification as it is online mode of classroom

Notices:CMS or Google Classroom

Make-up Policy: Only if found to be genuine and shall be considered on a case to case basis

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

INSTRUCTOR-IN-CHARGE

CE G545