SCHEME OF COURSE WORK

Course Details:

Course Title	**: Airport Infrastructure**		
Course Code	**:** 19CE2162	**L P C**	**: 3 0 3**
Program:	**: M. Tech.**		
Specialization:	**: Civil Engineering**		
Semester	**: II**		
Prerequisites	**: Transportation Engineering**		
Courses to which it is a prerequisite	**: None**		

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

1	Describe the different components of airport and aircrafts.
2	Analyse the requirements of an airport layout with respect to international regulations
3	Explain the airport runway design
4	Design Taxiways & Aprons
5	Summarise the concept of the terminal service facilities

Program Outcomes (POs):
Post graduates will be able to:

1. Synthesize existing and new knowledge in various sub areas of infrastructural engineering.
2. Analyse complex engineering problems critically with adequate theoretical background for practical applications.
3. Evaluate a wide range of feasible and optimal solutions after considering safety and environmental factors.
4. Demonstrate the ability to pursue research by conducting experiments and extract the relevant information through literature surveys.
5. Use state –of- the- art of modern tools for interpreting the behavior and modeling of complex engineering structures.
6. Attain the capability to work in multi-disciplinary teams to achieve common goals.
7. Demonstrate the knowledge to perform the projects efficiently in multi-disciplinary environments after consideration of economical and financial matters.
8. Communicate effectively on complex engineering activities to prepare reports and make presentations.
9. Engage in life-long learning independently to improve knowledge.
10. Understand the responsibility of carrying out professional practices ethically for sustainable development of society.
11. Examine critically and independently one's actions and take corrective measures by

Course Outcome versus Program Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO-1	S		M			M					M
CO-2	M	S	M	M		M					M
CO-3	S	S	M	M		M					M
CO-4	S	S		M		M					M
CO-5	S	S	S	M	S	M		M			M

S - Strongly correlated, M - Moderately correlated, *Blank - No correlation*

Assessment Methods:	Assignment / Seminar / Mid-Test / End Exam

Teaching-Learning and Evaluation

Week No.	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	Airport terminology, component parts of Aeroplane,	CO-1	What are the various parts of Aeroplane	▫ Lecture ▫ Demonstration	Assignment (Week 2 - 4)
2	Classification and size of airports; Aircraft characteristics.	CO-1	What are the characterstics of aircraft	▫ Lecture / Discussion	Mid-Test 1 (Week 9)
3	Air traffic control need for ATC, Air traffic control network, Air traffic control aids –enroute aids, landing aids	CO-1	What is the need for ATC	▫ Lecture ▫ Problem solving	
4	Airport site location and necessary surveys for site section, airport obstructions.	CO-2	What are the various surveys for airport selection	▫ Lecture / Discussion	
5	PLANNING: Airport master plan – FAA recommendations, Regional Planning, ICAO recommendations	CO-2	What are the recommendations of FAA	▫ Lecture / Discussion	
6	Estimation of future air port traffic needs- layout of Air Port.	CO-2	How to estimate the airport traffic needs	▫ Lecture / Discussion	
7	RUNWAYS: Runway orientation, basic runway length	CO-3	Describe Windrose diagram	▫ Lecture ▫ Problem solving	
8	corrections for elevation, temperature and gradient, runway geometric design.	CO-3	What are various corrections for runway	▫ Lecture ▫ Problem solving	
9	**MID TEST – I**				
10	TAXIWAYS AND APRONS: Loading aprons – holding aprons	CO-3	What are loading aprons	▫ Lecture ▫ Discussion ▫ Problem solving	Mid-Test 2 (Week 18)
11	Geometric design standards, exit taxiways	CO-4	What are the design standards of taxiway	▫ Lecture / Discussion	
12	optional location, design, and fillet and separation clearance	CO-4	What is fillet in taxiway	▫ Lecture / Discussion	
13	TERMINAL SERVICE FACILITIES: Passenger, baggage and cargo handling systems	CO-5	Write about cargo handling systems	▫ Lecture / Discussion	
14	Lighting, visual airport marking,	CO-5	Write about lighting facilities of airport	▫ Lecture / Discussion	
15	air port lighting aids, airport drainage.	CO-5	How to provide airport drainage	▫ Lecture / Discussion	Seminar (Week 15)
16	OPERATIONS AND SCHEDULING: Ground transportation facilities; Airport capacity	CO-5	What are the ground transportation facilities	▫ Lecture / Discussion	
17	runway capacity and delays.	CO-5	How to estimate runway capacity & delays	▫ Lecture / Discussion	
18	**MID TEST – II**				
19/20	**END EXAM**				