15AS323E	AIRPORT ENGINEERING	L	T	P	C
		3	0	0	3
Co-requisite:	Nil				
Prerequisite:	Nil				
Data Book / Codes/Standards	Nil				
Course Category	P Professional Elective				
Course designed by	Department of Aerospace Engineering				
Approval	Academic Council Meeting 23rd July, 2016				

PURPOSE	To provide an in depth knowledge and to understand the basic concepts in airport engineering							
INSTRUCTIONAL OBJECTIVES		**STUDENT OUTCOMES**						
At the end of the course, student should be able								
1.	To familiarize about airports and surveys	a	e					
2.	To understand about airport planning and forecasting	a		f				
3.	To understand and design runway and taxiways	a		f				
4.	To understand about air traffic control tower and terminal areas	a	e					
5.	To understand about helipads and STOL ports	a	e					

Session	Description of Topic	Contact hours	C-D-I-O	IOs	Reference
	UNIT I : INTRODUCTION	**9**			
1.	International airport authority of India - Civil aviation department Airport Authority of India - Open sky policy – Airport terminology	3	C	1	1,2
2.	Aircraft characteristics - Characteristics of the jet aircraft- Classification of aerodromes - Classification of airports - Flying activities	3	C	1	1,2

3.	Airport surveys - Objects of surveys - Types of surveys- Drawings to be prepared	3	C	1	1,2
	UNIT II: AIRPORT PLANNING	**9**			
4.	Improvement of existing airport - Airport site selection	3	C	2	1,2
5.	Airport size - Forecasting in aviation - Airport obstructions	3	C	2	1,2
6.	Clear zone - Turning zone - Zoning laws	3	C	2	1,2
	UNIT III: RUNWAY AND TAXIWAY DESIGN	**9**			
7.	Runway orientation - Change in direction of runway - Basic runway length - Corrections to basic runway length - Runway patterns	3	C	3	1,2
8.	Layout of taxiways - Geometric standards for taxiway - Exit taxiways - Design of exit taxiways - Loading aprons - Holding aprons	3	C	3	1,2
9.	Fillets - Separation clearance - Bypass or turnaround taxiway	3	C	3	1,2
	UNIT IV: TERMINAL AREA AND ATC	**9**			
10.	Terminal building - Passenger flow - Size of apron – Hangars - Typical airport layouts	3	C	4	1,2
11.	Air traffic control- Importance of air traffic control - Flight rules - Air traffic control network	3	C	4	1,2
12.	Air traffic control aids - Automation in air traffic control aids - GPS Air Traffic Control - Free flight air traffic control	3	C	4	1,2
	UNIT V: HELIPORTS and STOLPORTS	**9**			
13.	Advantages of helicopters - Planning of heliports - Elevated heliports - Heliports at airports	5	C	5	1,2
14.	Characteristics of STOL aircraft - Advantages of STOL aircraft - Planning of STOL ports	4	C	5	1,2
	Total contact hours*	45			

*Excluding Assessment hours

LEARNING RESOURCES	
Sl. No.	**TEXT BOOKS**
1.	Rangwala. *"Airport Engineering",* Charotar Publishing House Pvt., 15th edition 2015.
	REFERENCE BOOKS/OTHER READING MATERIAL
2.	Norman J. Ashford, Saleh A. Mumayiz, Paul H. Wright. *"Airport Engineering: Planning, Design and Development of 21St - Century Airports*", 4ed, CBS Publishers & Distributors.

Course nature				**Theory**			
Assessment Method (Weightage 100%)							
In-semester	**Assessment tool**	Cycle test I	Cycle test II	Cycle Test III	Surprise Test	Quiz	**Total**
	Weightage	**10%**	**15%**	**15%**	**5%**	**5%**	**50%**
End semester examination Weightage :							**50%**