



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

AERONAUTICAL ENGINEERING

COURSE DESCRIPTOR

Course Title	AVIATION MANAGEMENT				
Course Code	AAE019				
Programme	B.Tech				
Semester	VIII	AE			
Course Type	Core				
Regulation	IARE - R16				
Course Structure	Theory			Practical	
	Lectures	Tutorials	Credits	Laboratory	Credits
	3	-	3		
Chief Coordinator	Ms. K.SaiPriyanka, Assistant Professor				
Course Faculty	Ms. K.SaiPriyanka, Assistant Professor				

I. COURSEOVERVIEW:

The aim is to understand concepts and developments in the aviation industry, and improve your understanding of a range of specialized subjects and global best practices. Learn how aviation business planning interrelates with current regulatory and evolving state policy issues. Evaluate current air transport economic issues and the industry value chain, and learn how to apply your air transport economic knowledge in the workplace. Some prior industry experience is useful to fully understand course content, although sessions are accessible to new industry professional.

II. COURSEPRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
UG	AAE001	III	Introduction To aerospace Engineering	3
UG	AAE526	VI	Air transportation system	3

III. MARKS DISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks
Aviation Management	70 Marks	30 Marks	100

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✗	Chalk & Talk	✓	Quiz	✓	Assignments	✗	MOOCs
✓	LCD / PPT	✓	Seminars	✗	Mini Project	✗	Videos
✗	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

Semester End Examination (SEE): The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into five units and each unit carries equal weightage in terms of marks distribution. The question paper pattern is as follows. Two full questions with “either” or “choice” will be drawn from each unit. Each question carries 14 marks. There could be a maximum of two sub divisions in a question.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
50 %	To test the analytical skill of the concept OR to test the application skill of the concept.

Continuous Internal Assessment (CIA):

CIA is conducted for a total of 30 marks (Table 1), with 25 marks for Continuous Internal Examination (CIE), 05 marks for Quiz/ Alternative Assessment Tool (AAT).

Table 1: Assessment pattern for CIA

Component	Theory		Total Marks
	CIE Exam	Quiz / AAT	
CIA Marks	25	05	30

Continuous Internal Examination (CIE):

Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively. The CIE exam is conducted for 25 marks of 2 hours duration consisting of two parts. Part–A shall have five compulsory questions of one mark each. In part–B, four out of five questions have to be answered where, each question carries 5 marks. Marks are awarded by taking average of marks scored in two CIE exams.

Quiz / Alternative Assessment Tool (AAT):

Two Quiz exams shall be online examination consisting of 25 multiple choice questions and are be answered by choosing the correct answer from a given set of choices (commonly four). Marks shall be awarded considering the average of two quizzes for every course. The AAT may include seminars, assignments, term paper, open ended experiments, five minutes video and MOOCs.

VI. HOW PROGRAM OUTCOMES AREASSESSED:

Program Outcomes (POs)		Strength	Proficiency assessed by
PO 1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	3	Assignments
PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	2	Seminar
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.	2	Seminar

3 = High; 2 = Medium; 1 = Low

VII. HOW PROGRAM SPECIFIC OUTCOMES AREASSESSED:

Program Specific Outcomes (PSOs)		Strength	Proficiency assessed by
PSO 1	Professional skills: Able to utilize the knowledge of aeronautical/aerospace engineering in innovative, dynamic and challenging environment for design and development of new products	-	-
PSO2	Problem-solving Skills: Imparted through simulation language skills and general purpose CAE packages to solve practical, design and analysis problems of components to complete the challenge of airworthiness for flight vehicles.	2	Seminars
PSO 3	Practical implementation and testing skills: Providing different types of in house and training and	-	-

	industry practice to fabricate and test and develop the products with more innovative technologies		
PSO 4	Successful career and entrepreneurship: To prepare the students with broad aerospace knowledge to design and develop systems and subsystems of Aeronautical/aerospace allied systems to become technocrats.	-	-

3 = High; 2 = Medium; 1 = Low

VIII. COURSE OBJECTIVES:

The course should enable the students to:	
I	Understand about the history of aviation, major players airline industry, current trends and challenges.
II	Impart the knowledge on airport planning, airport operation and various authorities involved in airport management.
II	Understand and gain the knowledge on the meteorological services, environmental regulation and airport fee, rates and charges.
IV	Gain the in depth knowledge on safety regulation, economic regulation and aviation security.

IX. COURSE OUTCOMES (COs):

COs	Course Outcome	CLOs	Course Learning Outcome
CO 1	Understand about the history of aviation, major players airline industry, current trends and challenges.	CLO 1	Provide knowledge on history of aviation industry.
		CLO 2	Understand airport system planning, airport master plan, airport lay out plan.
		CLO 3	Demonstrate governmental requirements on non- passenger related airport authority functions
		CLO 4	Explain Air Traffic Services and describe the history and development of Air Traffic Services (ATS).
CO 2	Impart the knowledge on airport planning, airport operation and various authorities involved in airport management..	CLO 5	Differentiate between private airports and public use airports, commercial service airports and primary commercial service airports.
		CLO 6	Discuss and Identify the economic, political and social role of airports.
		CLO 7	Describe airport layout incorporating its different features navigation.
CO 3	Understand and gain the knowledge on the meteorological services, environmental regulation and airport fee, rates and charges.	CLO 8	Explain construction of runway and taxiway and aprons as per geometric design for all parameters.
		CLO 9	Define the requirements of terminal area as per drawing, design and describe the visual aids for air traffic control system

COs	Course Outcome	CLOs	Course Learning Outcome
		CLO 10	Explain various elements of Heliports and its planning aspects
CO 4	Gain the in depth knowledge safety regulation, economic regulation and aviation security.	CLO11	Understanding the Various Airport services and international air transport services.
		CLO12	Understand the role of private operators in Airport development fees, Rates & Tariffs.
		CLO 13	Understanding the role DGCA from the certification
CO5	Understand the role of air traffic control and the navigational aids.	CLO 14	Knowledge on the role of air traffic control in airspace & navigational aids with live examples
		CLO 15	Understanding different cases in airline industry.
		CLO 16	Explore the use of learning about how airports work, especially about airport safety and international aviation laws.

X. COURSE LEARNING OUTCOMES(CLOs):

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
AAE019.01	CLO 1	Provide knowledge on history of aviation industry.	PO 1	3
AAE019.02	CLO 2	Understand airport system planning, airport master plan, airport lay out plan.	PO 1	3
AAE019.03	CLO 3	Demonstrate governmental requirements on non- passenger related airport authority functions	PO 1	3
AAE019.04	CLO 4	Explain Air Traffic Services and describe the history and development of Air Traffic Services (ATS).	PO 6	2
AAE019.05	CLO 5	Differentiate between private airports and public use airports, commercial service airports and primary commercial service airports.	PO 6	2
AAE019.06	CLO 6	Discuss and Identify the economic, political and social role of airports.	PO6	2
AAE019.07	CLO 7	Describe airport layout incorporating its different features navigation.	PO 6	2
AAE019.08	CLO 8	Explain construction of runway and taxiway and aprons as per geometric design for all parameters.	PO 1	3
AAE019.09	CLO 9	Define the requirements of terminal area as per drawing, design and describe the visual aids for air traffic control system	PO 1	3
AAE019.10	CLO 10	Explain various elements of Heliports and its planning aspects	PO 1	3
AAE019.11	CLO 11	Understanding the Various Airport services and international air transport services.	PO 1	3
AAE019.12	CLO 12	Understand the role of private operators in Airport development fees, Rates & Tariffs.	PO 10	2

AAE019.13	CLO 13	Understanding the role DGCA from the certification	PO 10	2
AAE019.14	CLO 14	Knowledge on the role of air traffic control in airspace & navigational aids with live examples	PO 1	3
AAE019.15	CLO 15	Understanding different cases in airline industry.	PO 10	2
AAE019.16	CLO 16	Explore the use of learning about how airports work, especially about airport safety and international aviation laws.	PO 6	2

3 = High; 2 = Medium; 1 = Low

XI. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Learning Outcomes (CLOs)	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO 1	3													2		
CLO 2	2													1		
CLO 3	3									2				2		
CLO 4						3										
CLO 5						2								2		
CLO 6	3					2								1		
CLO 7						3								2		
CLO 8	3															
CLO 9	3													2		
CLO 10	2															
CLO 11	3															
CLO 12										2				2		
CLO 13						2				1						
CLO 14	3															
CLO 15	3													2		
CLO 16						3				2						

3 = High; 2 = Medium; 1 = Low

XII. MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES

Course Outcomes (COs)	Program Outcomes (POs)			Program Specific Outcomes (PSOs)
	PO 1	PO 6	PO 10	PSO2
CO 1	3			2
CO 2		2		2
CO 3	3			2
CO 4	3		2	2
CO 5	3	2	2	2

XIII. ASSESSMENT METHODOLOGIES –DIRECT

CIE Exams	PO 1, PO 6, PO 10	SEE Exams	PO 1, PO 6, PO 10	Assignments	PO 1	Seminars	PO 1
Laboratory Practices	-	Student Viva	-	Mini Project	-	Certification	-
Term Paper	-						

XIV. ASSESSMENT METHODOLOGIES -INDIRECT

✓	Early Semester Feedback	✓	End Semester OBE Feedback
✗	Assessment of Mini Projects by Experts		

XV. SYLLABUS

UNIT-I	INTRODUCTION
History of Aviation- organization, global , social & ethical environment-history of aviation in India-Major players in Airline industry-Swot Analysis of different Airline companies in India- market potential of Airline industry in India- new airport development plans-current challenges in airline industry- competition in Airline industry- Domestic & International from an Indian perspective	
UNIT-II	AIRPORT INFRASTRUCTURE AND MANAGEMENT
Airport planning – Terminal planning design & operation -Airport operations – Airport functions- organization structure in an Airline – Airport Authority of India- comparison of global & Indian Airport management- Role of AAI -Airline privatization – Full privatization- Gradual privatization-partial privatization	
UNIT-III	AIR TRANSPORT SERVICES
Various Airport services- international air transport services – Indian Scenario- An overview of Airport in Delhi, Mumbai, Hyderabad & Bangalore. The role of private operators- Airport development fees, Rates & Tariffs.	
UNIT-IV	INSTITUTIONAL FRAMEWORK
Role of DGCA-Slot allocation -Methodology followed by ATC & DGCA – management of bi-laterals – economic Regulations	
UNIT-V	CONTROLLING
Role of air traffic control- airspace & navigational aids- control process – case study in airline industry- Mumbai-Delhi airport privatization-Navi Mumbai airport tendering process- six cases in the airline industry.	

Text Books:
1. Graham. A —Managing airports - an International Perspective butterworth-heinemann, oxford2001. 2. Wells. a. —Airport Planning and Management, 4 th edition McGraw-Hill, London2000.
Reference Books:
1. Alexander t. wells, seth young, —Principles of Airport management, McGraw-hill 2003Y. V. C.Rao, 2. Richard de neuffille, —Airport systems: Planning, Design & Management, McGraw-hill London2007.

XVI. COURSEPLAN:

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topics to be covered	Course Learning Outcomes (CLOs)	Reference
1	History of Aviation- organization	CLO 1	T1:1.7 T2:1-3
2-3	Global , social & ethical environment	CLO 2	T1:1.1 3 T2:1-4
4	History of aviation in India Major players in Airline industry	CLO 1	T1:1.11 T2:1-3
5-6	Swot Analysis of different Airline companies in India	CLO 1	T1:5.6 T2:2-5
7-8	Market potential of Airline industry in India	CLO 2	T1:3.2 T2:2-4
9	New airport development plans	CLO 3	T1:2.1 T2:1-8
10-12	Current challenges in airline industry competition in Airline industry	CLO 1	T1:2.5 T2:1-8
13	Domestic & International from an Indian perspective	CLO 4	T1:3.6 T2:2-6
14	Airport planning – Terminal planning design & operation -Airport operations	CLO 5	T1:5.3 T2:2-6
15	Airport functions- organization structure in an Airline	CLO 6	T1:6.3 T2:6-1
16-17	Airport Authority of India- comparison of global & Indian Airport management	CLO 6	T1:6.4 T2:6-4
18-20	Role of AAI -Airline privatization	CLO 7	T1:6.5 T2:6-5
21-23	Full privatization- Gradual privatization- partial privatization	CLO 7	T1:6.11 T2:6-6
24-25	Various Airport services	CLO 9	T1:6.9 T2:7-2
26-28	International air transport services	CLO 12	T1:11.2 T2:12-2
29-30	Indian Scenario- An overview of Airport in Delhi, Mumbai, Hyderabad & Bangalore	CLO 11	T1:9.2 T2:3-4
31	Indian Scenario- An overview of Airport in Delhi, Mumbai, Hyderabad & Bangalore	CLO 11	T1:9.4 T2:3-4

32	Airport development fees, Rates & Tariffs.	CLO 10	T1:9.5 T2:1-3
33-35	Role of DGCA, Slot allocation	CLO 02	T1:9.6
36-38	Methodology followed by ATC	CLO 10	T1:10.2 T2:13-1
39-40	Methodology followed by DGCA	CLO 10	T1:10.3 T2:13-1
41	Management of bi-laterals, Economic Regulations.	CLO 10	T1:10.5 T2:13-2
42	Role of air traffic control-	CLO 11	T1:10.6 T2:13-3
43	Airspace & navigational aids	CLO 11	T1:10.4
44	Control process	CLO 10	T1:10.8 T2:13-3
45	Six cases in the airline industry.	CLO 10	T1:10.8 T2:13-2

XVII.GAPS IN THE SYLLABUS - TO MEET INDUSTRY / PROFESSIONREQUIREMENTS:

S No	Description	Proposed actions	Relevance with POs	Relevance with PSOs
1	Gain information about current aviation industry and knowledge on current airports	Seminars / Guest Lectures	PO 1, PO 10	PSO 1
2	Encourage students to make case studies on different airports and air crash investigations with specific solutions on current situations	Assignments	PO 1, PO 6	PSO 1

Prepared by:

Ms. K.Sai Priyanka, Assistant Professor

HOD, AE