

## AIRPORT PLANNING AND OPERATION

III Semester: AE																													
Course Code	Category	Hours / Week			Credits	Maximum Marks																							
BAEC28	Elective	L	T	P	C	CIA	SEE	Total																					
		3	-	-	3	30	70	100																					
<b>Contact Classes:45</b>	<b>Tutorial Classes: Nil</b>	<b>Practical Classes: Nil</b>			<b>Total Classes: 45</b>																								
<p><b>I. COURSE OVERVIEW:</b>                      The aim is to understanding of relevant international and national regulations and the ability to explain their effects on airport business, planning, design, operations and safety management decisions. A critical awareness of the key issues that affect users of airport facilities. And to identify, analyse and design solutions in order to address a given research problem within the context of airport planning and management, having regard to regulatory constraints and commercial and environmental imperatives.</p> <p><b>II. COURSE OBJECTIVES:</b>  <b>The students will try to learn:</b></p> <ol style="list-style-type: none"> <li>I. The various acts of legislation that have influenced the development and operation of airports since the early days of civil aviation.</li> <li>II. The knowledge on various facilities located on an airports and types of airport runways airfield.</li> <li>III. The facilities within an airport terminal that facilitate the transfer of passengers and baggage to and from aircraft.</li> <li>IV. The technologies used to modernize air traffic control, hierarchical air traffic control management structure.</li> </ol> <p><b>III. COURSE OUTCOMES:</b>  <b>After successful completion of the course, students will be able to:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CO</th> <th>Outcome</th> <th>Assessment</th> </tr> </thead> <tbody> <tr> <td>CO 1</td> <td>Identify the airport management systems by using modern tools for assessing airport performance and safety.</td> <td>Understand</td> </tr> <tr> <td>CO 2</td> <td>Develop the ground handling system by using organizational and managerial skills for the efficient flow of passengers and goods in an airport.</td> <td>Apply</td> </tr> <tr> <td>CO 3</td> <td>Model the philosophies of terminal management of airline passenger services by using Hubbind's theory for ascertaining optimum flow pattern.</td> <td>Understand</td> </tr> <tr> <td>CO 4</td> <td>Organize the cargo handling, operations, and marketing by using modern cargo terminal design concepts for expediting the movement in the airport terminal.</td> <td>Understand</td> </tr> <tr> <td>CO 5</td> <td>Make use of airport technical services by the passengers and stake holders for the effective utilization of facilities.</td> <td>Apply</td> </tr> <tr> <td>CO 6</td> <td>Examine the operational and administrative performance of an airport using the management techniques for effective utilization of human resources.</td> <td>Understand</td> </tr> </tbody> </table> <p><b>IV. SYLLABUS:</b>  <b>MODULE-I: THE AIRPORT AS AN OPERATIONAL SYSTEM (08)</b>                      The airport as a system; National airport systems; The function of the Airport; Centralized and decentralized passenger terminal systems; The complexity of the airport operation; Management and operational structures; Airport influences on aircraft performance characteristics: Aircraft departure performance; Approach and landing performance; Safety considerations; Automatic landing; Operations in inclement weather; Specific implications of the Airbus A380; Operational Readiness: Aerodrome certification; Operating constraints; Operational areas; Airfield Inspections; Maintaining readiness.</p>									CO	Outcome	Assessment	CO 1	Identify the airport management systems by using modern tools for assessing airport performance and safety.	Understand	CO 2	Develop the ground handling system by using organizational and managerial skills for the efficient flow of passengers and goods in an airport.	Apply	CO 3	Model the philosophies of terminal management of airline passenger services by using Hubbind's theory for ascertaining optimum flow pattern.	Understand	CO 4	Organize the cargo handling, operations, and marketing by using modern cargo terminal design concepts for expediting the movement in the airport terminal.	Understand	CO 5	Make use of airport technical services by the passengers and stake holders for the effective utilization of facilities.	Apply	CO 6	Examine the operational and administrative performance of an airport using the management techniques for effective utilization of human resources.	Understand
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## **MODULE-II: GROUND HANDLING AND BAGGAGE HANDLING (10)**

Ground handling: Passenger handling; Ramp handling; Aircraft ramp servicing; Ramplay out; Departure control; Division of ground handling responsibilities; Control of ground handling efficiency; Baggage handling: Context, history and trends; Baggage handling processes; Equipment, systems and technologies, process and system design drivers; Organization; Management and performance metrics.

## **MODULE-III: PASSENGER TERMINAL AND CARGO OPERATIONS (10)**

Passenger terminal operations: Functions of the passenger terminal; Terminal functions; Philosophies of terminal management; Direct passenger services; Airline related passenger services; Airline related operational functions; Government requirements; Non-passenger related airport authority functions; processing very important persons; Passenger information systems.

Space components and adjacencies. Aids to circulation; Hub and considerations; Cargo operations: The cargo market; Expediting the movement; Flow through the terminal; unit load devices; Handling within the terminal; Cargo apron operation; Facilitation; Examples of modern cargo terminal design and operation; Cargo operations by the integrated carriers.

## **MODULE-IV: AIRPORT TECHNICAL SERVICES AND ACCESS (09)**

Airport technical services: The scope of technical services; Safety management system; Air traffic control; Telecommunications; Meteorology; Aeronautical information; Airport access: Access as part of airport system; access users and modal choice; access interaction with passenger; access modes; In town and other off; airport terminals; Factors affecting access; mode choice.

## **MODULE-V: OPERATIONAL ADMINISTRATION AND PERFORMANCE (08)**

Operational administration and performance: Strategic context; Tactical approach to administration of airport operations; Managing operational performance; Key success factors for high performance; airport operations control centers: The concept of airport operations; airport operations control system; the airport Operations consideration; airport performance monitoring; design and equipment considerations; organizational and human resources considerations; leading AOCCSs; best practices in airport operations.

### **V. TEXT BOOKS:**

1. Norman J. Ashford, H. P. Martin Stanton, Clifton A. Moore, Pierre Coutu, "Airport Operations", McGraw Hill, 3<sup>rd</sup> Edition, 2013.
2. R. Horonjeff, F. X. McKelvey, W. J. Sproule, S. B. Young, "Planning and Design of Airports", McGraw Hill, 5<sup>th</sup> Edition, 2010.

### **VI. REFERENCE BOOKS:**

1. A. Kazda, R.E.Caves, "Airport Design and Operation", Elsevier, 2<sup>nd</sup> Edition, 2007.
2. A.T.Wells, S.B.Young, "Airport Planning and Management", McGraw Hill, 6<sup>th</sup> Edition, 2011.

### **VII. WEB REFERENCES:**

1. <http://memberfiles.freewebs.com/94/47/55224794/documents/airport%20planning%20and%20management.pdf>
2. [https://books.google.co.in/books?id=RYR6cu4YSBcC&dq=Planning%20and%20Design%20of%20Airports&source=gbs\\_similarbooks](https://books.google.co.in/books?id=RYR6cu4YSBcC&dq=Planning%20and%20Design%20of%20Airports&source=gbs_similarbooks)

### **VIII. E-TEXT BOOKS:**

1. <https://accessengineeringlibrary.com/browse/airport-planning-and-management-sixth-edition>
2. <http://www.only4engineer.com/2014/10/planning-and-design-of-airports-by.html>