Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
DEPARTMENT OF AERONAUTICAL ENGINEERING
An Autonomous Institute

Course Details:

Class	S.Y B.Tech., Sem - IV
Course Code and Course Name	**2AEAT201 - Introduction to Air Transportation**
Prerequisite	NIL
Teaching Scheme: Lecture/Tutorial/Practical	02/00/00
Credits	02
Evaluation Scheme : ISE/MSE/ESE	40/30/30

Course Objectives:

1. To familiarize students with the dynamics of the air transportation system, including the operations, management, and regulations governing air travel.
2. To equip students with the ability to understand and apply real-world scenarios such as safety and security, environmental concerns, marketing principles, and technological advancements.

Course Outcomes (CO's):

After successful completion of this course, the student will be able to,

2AEAT201_1	Gain insights into the operational functions of aerospace and air transportation entities to assess the role of governmental policies, network structure, management, market forces, environmental concerns, business models, and consumer preferences that help in shaping the air transportation landscape.
2AEAT201_2	Discuss legal frameworks governing international aviation, including treaties, conventions, and regulatory bodies such as ICAO, IATA, and national regulatory authorities, and their roles in promoting safety, security, and cooperation.
2AEAT201_3	Identify and compare different organizational structure and airline business models strategic positioning, operational characteristics, cost structures with the effects of deregulation on market competition, alliances, service quality, route and consumer choice.
2AEAT201_4	Apply marketing principles and strategies tailored to the unique characteristics of the air transportation industry and utilize market research techniques to identify customer needs, preferences, and competitive positioning opportunities
2AEAT201_5	Explore future directions by considering the ethical, social, and environmental implications of aerospace and air transportation activities for sustainable growth within the industry.

Member Secratory-BoS Chairman-BoS Member Secratory-AC Chairman-AC

Course Contents:

Unit 1	**Aerospace Industry**	**03**
Characteristics of the industry - Economic profile of the Industry - Civil Aviation market - Factors affecting commercial transport sales - General Aviation.		
Unit 2	**Air Transportation Industry**	**04**
Characteristics of the commercial air transport industry - Contribution to economy and efficient conduct of business - Economic and Social Benefits & Impacts - Basic Scheduling and Network structure.		
Unit 3	**International Law, Regulators and Associations**	**06**
Air law and Aviation law - International Air law - Sovereignty of territorial Airspace - Chicago Convention - Freedom of Air - Warsaw convention - Montreal Convention - ICAO - FAA - NTSB - IATA - EASA - DGCA - AAI - other International Associations.		
Unit 4	**Management and Organization**	**04**
Alliances - Deregulation and impact in airline industry - Organizational Structure – Types of Airline Personnel – Organizational Culture.		
Unit 5	**Marketing for Air Transportation**	**05**
Business model - Principles of air transport marketing - Stages in the Application of Marketing Principles - Principles of engagement marketing – Market segmentation – PESTE Analysis.		
Unit 6	**Air Transport and the Environment**	**04**
Introduction - Limiting Aviation's Environmental Impact: The role of Regulatory bodies - Airport Water Quality Control - Noise - Surface Air Quality - Impact of Aviation on Climate.		

Text Books:

Sl.No	Title	Author	Publisher	Edition	Year
1	Air Transportation - Management Perspective	John G Wensveen	Ashgate	7th	2011
2	Air Transport Management - An International Perspective	Lucy Budd and Stephen Ison	Routledge	-	2017

Member Secratory-BoS Chairman-BoS Member Secratory-AC Chairman-AC

Reference Books:

Sl.No	Title	Author	Publisher	Edition	Year
1	Airline Marketing and Management	Stephen Shaw	Ashgate	-	-
2	The Global Airline Industry	Peter Belobaba Amedeo Odoni Cynthia Barnhart	Wiley	1st	2009

Assessment Modes:

Sl. No	Method/ Technique	Course Outcomes					Marks		Weightage
		1	2	3	4	5	Max	Min	
1	ISE : ABA	☑	☑	☑	☑	☐	20	16	40 %
2	MSE	☑	☑	☐	☐	☐	30	24	60 %
3	ESE	☐	☐	☑	☑	☑	30		

- ISE - In-Semester Examination, MSE - Mid-Semester Examination, ESE - End-Semester Examination
- ABA - Activity Based Assessment

CO's - PO's & PSO's Mapping: (Low - 1, Medium - 2, High -3, No Correlation - "-")

CO's	PO's												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1	-	-	-	-	-	2	1	1	-	-	1	-	-	-
2	1	-	-	-	-	2	-	1	-	-	-	-	-	-
3	1	-	-	-	-	1	-	-	-	-	1	-	-	-
4	1	-	-	-	-	-	-	1	-	-	1	-	-	-
5	1	-	-	-	-	1	3	1	-	-	-	-	-	-
Avg	**1**	-	-	-	-	**2**	**2**	**1**	-	-	**1**	-	-	-

Member Secratory-BoS Chairman-BoS Member Secratory-AC Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Course Details:

Class	T.Y B.Tech., Sem - V (Minors in Air Transportation)
Course Code and Course Name	**2AEAT301 - Airport Operations and Air Traffic Control**
Prerequisite	2AEAT201 - Introduction to Air Transportation
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme : ISE/MSE/ESE	40/30/30

Course Objectives:

1. Understand the various components and operations of an airport
2. Gain knowledge of Air Traffic Management (ATM) systems and procedures.
3. Develop an understanding of the regulations governing airport safety and security.

Course Outcomes (CO's):

After successful completion of this course, the student will be able to,

2AEAT301_1	Explain the complexities of airport operations, management, and organizational influences on airport authority policies to provide with case studies and real-world examples of airport operations.
2AEAT301_2	Describe the processing of passenger and ground handling to ensure safety and operational efficiency by exploring the technologies and equipment involved in critical airport functions.
2AEAT301_3	Develop strategic and tactical approaches to airport operations management, focusing on the roles of control centers in coordinating and administering airport activities.
2AEAT301_4	Ascertain the ATC services, to maintain safety and orderly air traffic flow by exploring the importance in monitoring and controlling air traffic that affects airport management.
2AEAT301_5	Administer response actions to handle emergencies effectively through role-play and implement emergency management plans for different types of airport emergencies.

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Course Contents:

Unit 1	**The Airport as an Operational System**	**06**
Classifications of Airports - Components of an Airports - The Airport as a System - The functions of Airport - Complexity of the Airport Operations - Management and Operations - Organizations influence airport authority policies.		
Unit 2	**Ground Handling and Passenger Terminal**	**07**
Passenger Handling - Ramp Handling - Aircraft Ramp servicing - Ramp Layout - Departure control - Baggage Handling process - Equipment, Systems and Technologies - Functions of the passenger terminal - Terminal functions.		
Unit 3	**Airport Operational Administration & Control Centers**	**07**
Strategic and tactical approach to administration of Airport operations - Organizational considerations - Airport Operations control center - Management philosophy - Strategic significance - Airport Operations Control Systems - Airport Operation Coordination function.		
Unit 4	**Airspace and Air traffic management**	**07**
Objectives of air traffic control systems - Parts of ATC services – Scope and Provision of ATCs – Flight rules – Classification of ATS air spaces – Area control service - Approach control - Aerodrome Control - RNAV and RNP – Vertical, lateral and longitudinal separations based on time / distance – ATC clearances - Airport Surveillance Radar.		
Unit 5	**The Airfield**	**06**
Navigational aids (NAVAIDS) located on airfields - Wind direction indicator – Landing direction indicator – Markings, general requirements – Various markings. Aerodrome beacon, identification beacon – Simple approach lighting system and various lighting systems – VASI & PAPI - Visual aids for denoting obstacles.		
Unit 6	**Emergency Management and Response at Airports**	**06**
Types of Emergencies - Level of Protection required - Communication and Alarm Requirements - The Airport Emergency plan - Aircraft Firefighting and Rescue Procedures - Foaming of runways - Removal of Disabled Aircraft - Future outlook for airport management.		

Text Books:

Sl.No	Title	Authors	Publisher	Edition	Year
1	Airport Operations	Norman J. Ashford, Pierre Coutu , John R. Beasley	McGraw Hill	03rd	2012
2	Airport Planning & Management	Seth Young, Alexander T. Wells	McGraw Hill	07th	2019

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sl.No	Title	Authors	Publisher	Edition	Year
3	Airport Operations - International Aviation Training Program	IATA	-	2nd	2011

Assessment Modes:

Sl. No	Method/ Technique	Course Outcomes						Marks		Weightage
		1	2	3	4	5	6	Max	Min	
1	ISE : ABA	☐	☐	☐	☐	☐	☐	40	16	40 %
4	MSE	☐	☐	☐	☐	☐	☐	30	24	60 %
5	ESE	☐	☐	☐	☐	☐	☐	30		

- ISE - In-Semester Examination, MSE - Mid-Semester Examination, ESE - End-Semester Examination
- ABA - Activity Based Assessment, TA - Tutorial Assessment, PA - Practical Assessment

CO's - PO's & PSO's Mapping: (Low - 1, Medium - 2, High -3, No Correlation - "-")

CO's	PO's												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1	1					2								
2	1				1	2						2		
3	1					2		2				1		
4	1				2	3		2				2		
5			1			3			3	1				
Avg	**1.0**		**1.0**		**1.5**	**2.4**		**2.0**	**3.0**	**1.0**		**1.7**		

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Course Details:

Class	T.Y B.Tech., Sem - VI
Course Code and Course Name	**2AEAT302 - Air Transportation Management and Route Planning**
Prerequisite	2AEAT301 – Airport Operation and Air Traffic Control 2AEAT201 – Introduction to Air Transportation
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme : ISE/MSE/ESE	40/30/30

Course Objectives:

1. To equip students with the ability to analyze and forecast air travel market demand using various quantitative methods, considering different passenger segments and market dynamics.
2. To enable students to critically evaluate and design efficient airline route structures and develop effective pricing strategies for maximizing profitability in diverse operational contexts.
3. To provide students with the skills to apply optimization techniques and mathematical modeling to solve complex airline network planning, scheduling, and resource allocation problems.

Course Outcomes (CO's): After successful completion of this course, the student will be able to,

2AEAT302_1	Evaluate air travel market demand by applying macro and micro-forecasting methods to predict variations under diverse passenger segmentation and demand curve scenarios.
2AEAT302_2	Design effective route structures and pricing strategies by analyzing point-to-point, linear, and hub-and-spoke systems to maximize airline profitability in given operational case studies.
2AEAT302_3	Solve airline network planning problems by applying network flow models, under specified operational complexities.
2AEAT302_4	Develop optimized flight schedules by implementing hub-and-spoke scheduling, route development, and load factor analysis using optimization techniques under given operational scenarios.
2AEAT302_5	Optimize fleet assignment, aircraft routing, and crew scheduling by applying mathematical modeling techniques to address maintenance cycles and transportation problems in predefined case studies.

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Course Contents:

Unit 1	**Forecasting Air Travel Demand**	**06**
Air travel Market: demand – Purpose of Forecasting – Forecasting methods: Macro & Micro-Forecasting, Passenger segmentation, Variation in Demand – Demand Curve		
Unit 2	**Route Structures & Pricing Strategies**	**07**
Point-to-point – Linear – Hub and Spoke and its variations – case study of route systems – Airline profitability – Pricing strategies of FSNC and LCC – Point-to-point revenue management – Hub and spoke revenue management		
Unit 3	**Network flows**	**07**
Complexity of airline planning – Network flow models and definitions – Shortest path problems – Minimum cost flow problem – Maximum flow problems.		
Unit 4	**Principle of Flight Scheduling**	**07**
Mission of Scheduling – Hub & Spoke Scheduling – Route development and Flight Scheduling process – Load Factor and Frequency – Travelling Salesman Problem		
Unit 5	**Fleet assignment and Aircraft Routing**	**06**
Fleet Assignment – Factors in fleet planning – Fleet planning process - Aircraft Routing – Maintenance routing – Routing cycles – Route generators – Mathematical formulation - Transportation problems – Minimization and Maximization problems.		
Unit 6	**Crew and Manpower Scheduling**	**06**
Crew pairing – Pairing generators – Crew Rostering - Crew scheduling solution – Manpower planning mathematical modelling case study – Gate Assignment mathematical model for a case study.		

Text Books:

Sl.No	Title	Authors	Publisher	Edition	Year
1	Air Transport Management – An International Perspective	Lucy Budd and Stephen Ison	Routledge	1st	2017
2	Airline Operation and Scheduling	Massoud Bazargan	Ashgate	2nd	2010

Reference Books:

Sl.No	Title	Author	Publisher	Edition	Year
1	Airline Operations and Management – A management textbook	Gerald N. Cook Bruce G. Billig	Routledge (Taylor and Francis Group)	1st	2017

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sl.No	Title	Author	Publisher	Edition	Year
2	Air Transportation – A Management Perspective	John G. Wensveen	Ashgate		2007

Assessment Modes:

Sl. No	Method/ Technique	Course Outcomes					Marks		Weightage
		1	2	3	4	5	Max	Min	
1	ISE : ABA	☑	☑	☑	☑	☑	40	16	40 %
4	MSE	☑	☑	☑	☐	☐	30	24	60 %
5	ESE	☐	☐	☐	☑	☑	30		

- ISE - In-Semester Examination, MSE - Mid-Semester Examination, ESE - End-Semester Examination
- ABA - Activity Based Assessment, TA - Tutorial Assessment, PA - Practical Assessment

CO's - PO's & PSO's Mapping: (Low - 1, Medium - 2, High -3, No Correlation - "-")

CO's	PO's												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1	1	-	-	-	-	2	-	-	-	1	-	1	-	-
2	1	-	-	-	-	1	-	-	-	1	-	1	-	-
3	2	1	1	2	1	-	-	-	-	2	-	2	-	-
4	2	3	1	2	1	-	-	-	-	2	-	2	-	-
5	2	2	1	1	1	-	-	-	-	2	-	2	-	-
Avg	**2**	**2**	**1**	**2**	**1**	**2**	**-**	**-**	**-**	**2**	**-**	**2**	**-**	**-**

Member Secratory-BoS Chairman-BoS Member Secratory-AC Chairman-AC

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Course Details:

Class	B.Tech., Sem - VII
Course Code and Course Name	**2AEAT401- Aviation Safety and Logistics**
Prerequisite	
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme : ISE/MSE/ESE	40/30/30

Course Objectives:

1. To introduce aviation safety principles and the regulatory frameworks that govern operational and workplace safety in the aviation industry.
2. To develop an understanding of logistical processes, including supply chain management, inventory control, and transportation systems, focusing on the aviation context.
3. To equip students with the skills to analyze and apply risk assessment and mitigation techniques to improve safety and efficiency in aviation operations.

Course Outcomes (CO's): After successful completion of this course, the student will be able to,

2AEAT401_2	Apply aviation safety protocols to real-world scenarios by utilizing case studies and regulatory standards to ensure proper implementation and adherence to safety requirements.
2AEAT401_2	Implement aviation logistics strategies by applying knowledge of supply chain processes and operational constraints to optimize resource utilization in practical simulations.
2AEAT401_3	Perform risk assessments by applying risk evaluation tools and techniques to identify hazards and recommend mitigation strategies in various aviation operations.
2AEAT401_4	Utilize inventory management techniques to maintain operational efficiency by applying industry-standard methods and software to manage and track aviation inventory systems.
2AEAT401_5	Demonstrate the application of human factor principles by analyzing real-world incidents and applying corrective measures to minimize human errors in aviation safety practices.

Member Secretary-BoS | Chairman-BoS | Member Secretary-AC | Chairman-AC

Course Contents:

Unit 1	**Introduction to Aviation Safety**	**7**
The importance of aviation safety, the evolution of safety standards, the role of regulatory bodies (ICAO, FAA, EASA, DGCA), components of Safety Management Systems (SMS), and safety culture in aviation.		
Unit 2	**Risk Assessment and Hazard Identification**	**7**
Principles of risk assessment, hazard identification and classification, tools and techniques for risk management (FTA, FMEA), case studies of aviation accidents, mitigation strategies.		
Unit 3	**Human Factors in Aviation Safety**	**7**
Role of human factors in aviation, human error and its impact on safety, Crew Resource Management (CRM), fatigue management, stress control, case studies on human factor issues.		
Unit 4	**Aviation Logistics and Supply Chain Management:**	**7**
Overview of aviation logistics, components of aviation supply chain, inventory management techniques (JIT, demand forecasting), transportation systems in aviation logistics, role of technology (RFID, AI, IoT).		
Unit 5	**Emergency Planning and Incident Response**	**04 + 04**
Emergency planning and preparedness, incident reporting systems, investigation procedures, crisis management strategies, communication during emergencies, case studies of successful emergency responses.		
Unit 6	**Safety Audits and Quality Assurance in Aviation**	**04 + 04**
Importance of safety audits, types of audits (internal and external), quality assurance processes in aviation, continuous improvement techniques, implementing audit findings.		

Text Books:

Sl.No	Title	Authors	Publisher	Edition	Year
1	Safety Management Systems in Aviation	Stolzer, A.J., Halford, C.D., & Goglia, J.J.	Ashgate Publishing	2nd Edition	2016
2	Managing the Risks of Organizational Accidents	Reason, J.	Routledge	1st Edition	1997
3	Human Factors in Flight	Hawkins, F.H., & Orlady, H.W.	Routledge	3rd Edition	1993
4	Supply Chain Management: A Logistics Perspective	Coyle, J.J., Langley, C.J., Novack, R.A., & Gibson, B.J.	Cengage Learning	10th Edition	2016

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sl.No	Title	Authors	Publisher	Edition	Year
5	Aviation and Airport Security: Terrorism and Safety Concerns	Sweet, K.M.	Pearson	2nd Edition	2008
6	Airline Management: Strategies for the 21st Century	Dempsey, P.S., & Goetz, A.R.	Ashgate Publishing	1st Edition	1992

Reference Books:

l. No.	Title	Authors	Publisher	Edition	Year
1	*Aircraft Safety: Accident Investigations, Analyses, and Applications*	Rodrigues, C.C., & Cusick, S.K.	McGraw-Hill Education	2nd Edition	2011
2	Aviation Safety and Security: A Practical Guide	Pruchnicki, S., & Stolzer, A.J.	Routledge	1st Edition	2018
3	Global Logistics and Supply Chain Management	Mangan, J., Lalwani, C., & Butcher, T.	Wiley	3rd Edition	2020
4	Aircraft Maintenance Management	Kinnison, H.A., & Siddiqui, T.	McGraw-Hill Education	2nd Edition	2012
5	Reliability-Centered Maintenance	Moubray, J.	Industrial Press	2nd Edition	2001
6	Logistics Management and Strategy: Competing through the Supply Chain	Harrison, A., & Van Hoek, R.	Pearson	5th Edition	2014

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Assessment Modes:

Sl. No	Method/ Technique	Course Outcomes						Marks		Weightage
		1	2	3	4	5	6	Max	Min	
1	ISE : ABA	☑	☐	☐	☐	☑	☐	20	16	40 %
2	ISE : PA	☐	☐	☐	☐	☐	☐	50	20	
3	MSE	☑	☑	☑	☐	☐	☐	30	24	60 %
4	ESE	☐	☐	☑	☑	☑	☐	30		

- ISE - In-Semester Examination, MSE - Mid-Semester Examination, ESE - End-Semester Examination
- ABA - Activity Based Assessment, PA - Practical Assessment

CO's - PO's & PSO's Mapping: (Low - 1, Medium - 2, High -3, No Correlation - "-")

CO's	PO's												PSO's	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1	–	–	–	–	–	3	–	1	1	1	–	–	–	–
2	–	–	–	–	–	3	-	1	1	1	–	–	–	–
3	–	–	–	–	–	3	2	1	1	1	–	–	–	–
4	–	–	–	–	–	3	2	1	1	1	–	–	–	–
5	–	–	–	–	–	3	2	1	1	1	–	–	–	–
Avg	–	–	–	–	–	3	1.2	1	1	1	–	–	–	–

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Member Secratory-BoS | Chairman-BoS | Member Secratory-AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

Changing Lives.., Enriching Future...

Minor Stream in Air Transportation

Course Details:

Class	B.Tech., Sem - V to VIII
Course Code and Course Name	**2AEAT402 - Capstone Project on Air Transportation**
Prerequisite	2AEAT201, 2AEAT301, 2AEAT302, and 2AEAT401
Teaching Scheme: Lecture/Tutorial/Practical	00/00/06
Credits	03
Evaluation Scheme: ISE/ESE	50/50

Course Objectives:

1. Developing practical skills in analyzing and solving air transportation problems.
2. Applying theoretical knowledge from prerequisite courses to real-world air transportation scenarios.
3. Enhancing project management and communication skills related to air transportation projects

Course Outcomes (CO's): After successful completion of this course, the student will be able to,

2AEAT402_1	Analyze and evaluate the operational efficiency of air transportation systems.
2AEAT402_2	Design and evaluate solutions to improve air traffic management and reduce congestion.
2AEAT402_3	Develop a business case for a new air transportation service or infrastructure project.
2AEAT402_4	Apply economic principles to evaluate the economic impact of air transportation policies and investments.
2AEAT402_5	Communicate air transportation concepts and findings effectively to stakeholders, including technical and non-technical audiences.

Course Contents:

- **Project Scope**: The minor project may encompass various types of work, including design projects, experimental studies, or computer simulations, focusing on topics relevant to Minor Stream.
- **Project Components**: The minor project should involve several key elements, such as identifying a problem, conducting a literature review, formulating the problem, designing components or systems, and utilizing modern tools and techniques relevant to the project.
- **Project Synopsis Submission**: A synopsis of the selected project must be submitted, which should clearly outline the project's scope, objectives, methodology, approach, and tools to be employed. This includes any software or resources anticipated to be used, as well as expected results and a timeline for completion.
- **Report Distribution**: The project group is required to submit one copy of the synopsis report to their project guide, while retaining another copy for their own records.

Annasaheb Dange College of Engg. ASHTA 416 301

Member Secretary - BOS **Chairman-BOS** **Member Secretary - AC** **Chairman-AC**

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

- **Project Duration**: The minor project work is structured to be completed over four semesters (V to VIII), with the same group continuing to work under the guidance of the assigned project guide throughout this period.
- **Group Formation**: Students will work in groups of 2 to 4 members to complete the minor project. However, individual students may also choose to undertake the project independently. In no case should the student group size exceed 5 members. The ideal group size would be a maximum of 4 students.
- **Project Timeline and Assessments:**

Semester	Work to be completed	Assessment	Marks
V	Literature Review (Review Papers) and Synopsis Presentation	Review-I	50
VI	Methodology / Design / Tools	Review-II	50
VII	Complete Setup/Fabrication/Assembly	Review-III	50
VIII	Testing, Report Writing, Paper Publication	Review-IV	50

- **Submission Requirements:**
  - ✓ **Project Work Diary**: Maintained by the group and countersigned by the guide weekly, reflecting the efforts taken for project selection, literature review, and day-to-day activities.
  - ✓ **Synopsis Report**: Submitted in a prescribed format, including the project title, student names, guide name, relevance, literature review, proposed work, methodology, expected outcomes, plan of proposed work, detailed budget estimate, and references. The synopsis should consist of a minimum of 10 review papers from referred Journals and be signed by each student, approved by the guide, and endorsed by the Head of the Department.
  - ✓ **Minor Project Report**: A typed report of Min 30 to Max 50 pages, following a standardized format for page size, margins, font, and spacing (refer Guidelines for Main Project). The report should include references in a specific format for review papers and books.
  - ✓ **Presentation Requirement:** Students must make presentations in front of faculty members and review panel members during the scheduled reviews in each semester. They are required to submit soft copies of their Presentation PowerPoint (PPT) to the project guide.
  - ✓ **Documentation:** The project guide or Minor Project Coordinator must maintain a separate file for each group, which should include:
    - o Approved Synopsis
    - o Review Schedule
    - o Presentation Copies
    - o Assessment marks for each review, along with the corresponding rubrics
  - ✓ **Assessment**: The term work shall be assessed by the project guide based on the presentation of the completed work and the submitted report at the end of each semester.
- **Work Diary Maintenance for Project Groups**

  The project group is required to maintain a work diary throughout the duration of the project. The work diary should include the following entries:

  (a) Books Referred: List all books consulted during the project.

  (b) Company Visited: Document any companies visited for research or collaboration.

Member Secretary - BOS | Chairman-BOS | Member Secretary - AC | Chairman-AC

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta
(An Empowered Autonomous Institute)
Department of Aeronautical Engineering

(c) Person Contacted: Record the names and details of individuals contacted for information or assistance.

(d) Papers Referred: Include references to any research papers or articles consulted.

(e) Creative Thinking: Note any ideas, brainstorming sessions, or innovative thoughts that emerged during the project.

Assessment

- The work diary, along with the final project report, will be assessed during the End-Semester Examination (ESE) at the end of VIII Semester.
- Proper maintenance and thorough documentation in the work diary will contribute to the overall evaluation of the project.

Annasaheb Dange College of Engg. & Tech. ASHTA 416 301

Member Secretary - BOS **Chairman-BOS** **Member Secretary - AC** **Chairman-AC**