



C.U. SHAH UNIVERSITY – Wadhwan City

FACULTY OF: -Technology and Engineering (Diploma Engineering)

DEPARTMENT OF: - Civil Engineering

SEMESTER: - V **CODE:** -2TE05ATE1

NAME –Advanced Transportation Engineering

Teaching & Evaluation Scheme:-

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme								
		Th	Tu	Pr	Total		Theory				Practical (Marks)				Total
							Sessional Exam		University Exam		Internal		University		
							Marks	Hours	Marks	Hours	Pr	TW	Pr	Tw	
2TE05ATE1	Advanced Transportation Engineering	03	00	02	05	04	30	1.5	70	03	---	20	30	--	150

Objectives: airport, dock and harbour engineering are geometric design, capacity, planning of the airport and harbour.

Pre-requisite: basic knowledge of transportation engineering.

Course Outlines:-

Sr. No.	Course Contents	Teaching Hours
	(a) Airport Engineering	
1	Introduction: Modern aircrafts airport in India. Explanation of working of (Fuselage, Wings, Engines, Airscrew of jet propulsion, 4 control {Elevator, Rudder, Ailerons, Flaps}, Landing gear.	06
2	Aircraft characteristics: Significance and importance of aircraft characteristics. Explanation of (Type of propulsion, Size of Aircraft, Weights of Aircraft.) Capacity of aircraft. Speed characteristics. Turning radius, Fuel spillage, Heat blast and noise, Aircraft circling radius Weight on gear system.	06
3	Planning for Airport: Airport in regional planning. Airport in city planning. Elements of airport planning. Facilities of passengers and baggage. Airport Capacity	06
4	Design criteria for Runway, Taxiway, and Apron: Necessity. Explain wind rose diagram. Geometric design of runway and taxiway. Classification of apron according to use	06
	(B) Docks and Harbor Engineering	
5	Introduction: The growth of Port. Elements of V harbors. Design consideration for Ocean structures. Port administration.	03
6	Natural phenomenon: Wind. Tide. Current	03
7	Harbor planning & site investigations: Types of harbor. Choice of site for harbor. Master plan for port planning. Hydrographic and Topographic Survey	05
8	Costal Erosion and Protection: The coastal zones and beach profile. Coastal protection works. Berth nomishment	05
9	Cargo Storage Facilities: Transit Shed. Purpose, area of transit shed required, diversion of transit shed. Water houses, Open storage, cold storage building, Port administration building	05

Term Work.

1. Spot speed survey
2. Delay study
3. Origin and Destination survey
4. Parking studies :
5. Traffic signal design study : Sketches Home work
6. Characteristics of aircraft
7. Types of runway and taxiway : Visit to nearby Airport
8. Analysis of “ Wind rose Diagram”
9. Traffic control aids : sketches
10. Berthing structures Visit to nearby port / harbor
11. Navigational aids : Sketches
12. Seminar : Between 4 to 6 students (Different topics)

Learning outcomes: Incorporate appropriate field visit with concerned report, sketches seminar to enforce the knowledge of Advance Transportation Engineering

Books Recommended:-

1	Traffic engineering and Transportation Planning	L.R. Kandyali
2	Traffic Engineering	S.C.Saxena
3	Airport engineering	Arora and Khanna
4	Airport engineering	Dr. N.K.Vaswani
5	Docks and Harbor Engineering	S.C. Rangwala
6	Docks and Harbor Engineering	Oza & Oza
7	Docks and Harbor Engineering	-----