

**CIVIL ENGINEERING DEPARTMENT,  
GOVERNMENT ENGINEERING COLLEGE - DAHOD**

**MID SEM SYLLABUS – MARCH 2019  
SUBJECT NAME: HARBOUR AND AIRPORT ENGINEERING  
SUBJECT CODE: 2180602  
B.E. 8<sup>th</sup> SEMESTER**

**Type of course: Departmental Elective III**

Sr.	Content
<b>A</b>	<b>HARBOUR ENGINEERING</b>
<b>1</b>	<b>General:</b> History of water transportation at world level and at national level development and policy, classification of harbours, natural and artificial. Major ports in India, administrative set up.
<b>2</b>	<b>Harbour Planning:</b> Harbour components, ship characteristics, characteristics of good harbour and principles of harbour planning, size of harbour, site selection criteria and layout of harbours. Surveys to be carried out for harbor planning.
<b>3</b>	<b>Natural Phenomena:</b> Wind, waves, tides formation and currents phenomena, their generation characteristics and effects on marine structures, silting, erosion and littoral drift.
<b>4</b>	<b>Marine Structures:</b> General design aspects, breakwaters - function, types general design principles, wharves, quays, jetties, piers, pier heads, dolphin, fenders, mooring accessories – function, types, suitability, design and construction features.
<b>5</b>	<b>Docks and Locks:</b> Tidal basin, wet docks-purpose, design consideration, operation of lock gates and passage, repair docks - graving docks, floating docks.
<b>B</b>	<b>AIRPORT ENGINEERING</b>
<b>1</b>	<b>General:</b> History, development, policy of air transport, aircrafts, aerodromes, air transport authorities, air transport activities, air crafts and its characteristics, airport classifications as per ICAO.
<b>2</b>	<b>Airport Planning :</b> Regional planning-concepts and advantages, location and planning of airport as per ICAO and F.A.A. recommendations, airport Elements -airfield, terminal area, obstructions, approach zone, zoning laws, airport capacity, airport size and site selection, estimation of future air traffic, development of new airport, requirements of an ideal airport layout.
<b>3</b>	<b>Run Way Design:</b> Wind rose and orientation of runway, wind coverage and crosswind component, factors affecting runway length, basic runway length, and corrections to runway length, runway geometrics and runway patterns (configurations). Runway marking, threshold limits cross section of runway
<b>4</b>	<b>Taxiway Design:</b> Controlling factors, taxiway geometric elements, layout, exit taxiway, location and geometrics, holding apron, turnaround facility. Aprons -locations, size, gate positions, aircraft parking configurations and parking systems ,hanger-site selection, planning and design considerations, Fuel storage area, blast pads. wind direction indicator
<b>5</b>	<b>Terminal Area Design:</b> Terminal area elements and requirements, terminal building, functions, space requirements, location planning concepts, vehicular parking area and Circulation network. passenger requirements at terminal building