

<b>Course code: 464VAC4</b>	<b>Course – IV MARINE GEOLOGY</b>	<b>Credits: -</b>	<b>Hours: 10</b>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>➤ To learn the marine processes and geomorphic features</li> <li>➤ To understand the seafloor tectonics</li> <li>➤ To understand the marine sediments and marine geochemistry</li> </ul>		
<b>Unit: I</b>	History of Marine Geology, Waves, tides, currents, turbidity currents, long shore currents, rip currents, circulation, – Seiche and tsunamis – Coastal Zone Morphology (Estuaries, deltas, bays, raised beaches, tombolos, mud banks) – Deep Sea Morphology (Continental shelf, Continental slope, abyssal plains, sea mounts, , fracture pattern.		
<b>Unit: II</b>	Littoral processes - Evolution of headlands and bays - Beaches - Raised and sunken features – Evolution and classification of seacoasts and shorelines. Terrestrial-lacustrine shallow marine-deep sea - shelf-to-basin transport phenomena turbidites and gravity flows – Submarine groundwater discharge.		
<b>Unit: III</b>	Causes of marine regression and transgression Eustasy –Origin and distribution of ocean basins – Palaeoceanography- Ocean floor tectonics: – Seafloor Spreading – Evidence - lithospheric plates –divergent plate boundaries – Trenches as convergent plate boundaries – Subduction zones – Transform fault boundaries.		
<b>Unit: IV</b>	Marine sedimentation – Sources, types and distribution of marine sediments – Rate of deposition – Mineral resources. Marine phosphorite, glauconites, barium sulphate concretions, Polymetallic nodules – Gas hydrates - Beach placers. Terrigenous, Biogenic and Chemical Types – Placer Deposits. Distribution of temperature, salinity and density.		
<b>Unit: V</b>	Trenches and Submarine Canyons – Bengal Fan. Biogenic structures: Reefs of corals and algae Mid- Ocean ridges, and the structure of the oceanic crust - Coastal processes and the structure of continental margins. Coastal zone regulation in India. Seafloor geologic process – Volcanism and seismicity.		
<b>Reference and Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. King, C.A.M., (1975). Introduction to marine Geology and Geomorphology. Edward Arnold, London.</li> <li>2. Radhakrishnan, V., (1996). General Geology V.V.P. Publishers, Tuticorin</li> <li>3. Seabold, E. and Berger, W.H. , (1982). The Sea Floor, Springer Verlag. Kuenen, Ph.H., 1950. Marine Geology. John Wiley and Sons</li> <li>4. Shepard, F.P., (1978). Geological Oceanography, Heinmann, London.</li> <li>5. Harper and Row. Kurekian, K.K., 1990. Ocean, Prentice Hall. New Jersey</li> <li>6. Svedrup, J.F., (1969). The Ocean, A Scientific American book, W.H. Freeman and company, San Francisco.</li> <li>7. Kennett, J.P. (1982). Marine Geology. Prentice Hall. New Jersey. 8. Weisberg, C.P. (1979). Oceanography. McGraw Hill. New York.</li> </ol>			
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>➤ To understand the marine geomorphic features.</li> <li>➤ Realized the process of seafloor spreading.</li> <li>➤ Gain the knowledge of marine sedimentation.</li> </ul>		