

Course Title: Coastal Ecology and Management

Course Code AEM-507

Credit Hours: 2+1

Course Teacher: Dr. Tapas Paul

Lecture Plan

Theory

S.No.	Topics to be Covered	No. of classes
1.	Coastal resources: characteristics of coastal ecosystems	1
2.	Flora and fauna of coastal ecosystems	1
3.	Trophic relationships in coastal ecosystems	1
4.	Nutrient production, cycling and transport in coastal ecosystems	1
5.	Mangrove ecosystem: species diversity	1
6.	Distribution of mangrove ecosystems	1
7.	Importance of mangrove ecosystems	1
8.	Seagrass ecosystems: characteristics and ecological importance	1
9.	Sandy beach ecosystems: characteristics and ecological importance	1
10.	Lagoons: characteristics and ecological importance	1
11.	Estuaries: characteristics and ecological importance	1
12.	Developmental activities and biodiversity loss in coastal areas	1
13.	Human settlements and industries in coastal areas	1
14.	Shore protection works and their effects on coastal ecosystems	1
15.	Ports and transport systems: impacts on coastal ecosystems	1
16.	Waste disposal and its impacts on coastal biodiversity	1
17.	Ecological issues in coastal ecosystems	1
18.	Impacts of environmental changes on coastal ecosystems	1
19.	Threats to coastal biodiversity	1

20.	Habitat destruction in coastal ecosystems	1
21.	Depletion of fisheries resources	1
22.	Coastal Zone Management: concept and introduction	1
23.	Integrated Coastal Zone Management (ICZM) and its benefits	1
24.	Principles of Integrated Coastal Zone Management	1
25.	Goals and objectives of ICZM	1
26.	Scope of ICZM	1
27.	Zonation in coastal zone management	1
28.	National policies and planning for coastal resource management	1
29.	International policies and planning for coastal resource management	1
30.	Natural hazards and disasters in coastal areas	1
31.	Protection and management of coastal areas against natural hazards and disasters	1
32.	Socioeconomic impacts of coastal hazards and their assessment	1
Total		32

Practical

S.No.	Topics to be Covered	No. of classes
1.	Collection of soil samples from coastal areas	1
2.	Analysis of physical characteristics of coastal soil	1
3.	Analysis of chemical characteristics of coastal soil	1
4.	Collection of water samples from coastal areas	1
5.	Determination of physical characteristics of coastal water	1
6.	Determination of chemical characteristics of coastal water	1
7.	Determination of different soil and water quality parameters of coastal areas	1
8.	Collection of coastal biological communities	1
9.	Preservation of collected coastal biological samples	1

10.	Identification of coastal biological communities	1
11.	Study of flora of coastal ecosystems	1
12.	Study of fauna of coastal ecosystems	1
13.	Survey of different coastal zones	1
14.	Field survey of mangrove ecosystems	1
15.	Field survey of other coastal ecosystems, including seagrass, sandy beaches, lagoons and estuaries	1
16.	Preparation of a report on coastal zone survey and ecological observations	1
Total		16