

## DEPARTMENT OF AQUACULTURE

### CERTIFICATE COURSE IN COASTAL ZONE MANAGEMENT

Hours of study: 35

Year: 2022

#### Course Outcomes:

**CO1:** Define Coastal Zone and its Components.

**CO2:** Understand and identify NLMR from MLR

**CO3:** Manage Living Marine Resources.

**CO4:** List CRZ norms.

**CO5:** Apply CRZ rules as per latest Governmental norms.

**CO6:** Manage coastal zone as ecologically fragile systems.

#### Unit-I

##### COASTAL AND MARINE RESOURCES

Types and functions of coastal and marine resources – Coastal zone as an integrated resource area – Marine resources: biotic, mineral and energy resources

#### Unit-II

##### NON-LIVING MARINE RESOURCES

Renewable vs. Non-Renewable Resources – Marine minerals – Placer deposits hydrocarbon deposits – Polymetallic nodules – Exploration and exploitation of natural minerals – Methyl/ Gas Hydrates – Sea Salt – Potential energy in the ocean – Salinity – Wave – Tides – Currents – OTEC

#### Unit-III

##### LIVING MARINE RESOURCES

Environmental variability on marine fisheries resources – Interactions between fisheries and the ecosystem – Marine Protected Areas (MPA) – Large marine Ecosystems (LMEs) – Climate effects on living marine resources – Biological monitoring of marine ecosystems

#### Unit-IV

##### COASTAL ZONE REGULATION AND CRZ NORMS & RESOURCE EXPLORATION AND EXPLOITATION

Marine geophysical methods – Sea floor resource exploitation – Exploitation of the oceans by human activities – overfishing – mining – ocean dumping – oil spills – coral reef bleaching – Marine archeology-optimal use of the land and water resources of coastal zone- ecological, cultural, historic, aesthetic values -CRZ-violation of CRZ-responsible fisheries in coastal zone.

#### Unit-V

##### COASTAL AND MARINE RESOURCE MANAGEMENT

Resources as common property – Defining resource management – Conflicting interests with other Marine Resources: Food and Recreation/Tourism – Management tools – Ecosystem health and protection of biological diversity – Ecotourism – Future uses of the oceans

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