

Lecture Plan of Fisheries Oceanography, AEM 512 (1+1)

Theory

Class No.	Topic / Contents
1	Introduction to Fisheries Oceanography; physio-chemical oceanographic factors and their importance in fisheries
2	Effects of temperature, salinity, dissolved oxygen, pH, light and pressure on adaptation, behaviour, abundance and distribution of aquatic organisms
3	Biological oceanographic factors; primary and secondary productivity in oceans
4	Productivity changes in the ocean and their influence on fisheries production
5	Synoptic oceanographic analysis; El Niño and Southern Oscillation (ENSO) and their effects on fisheries
6	Ocean stratification: thermocline, halocline and pycnocline; significance in fisheries
7	Mud banks, upwelling and their role in marine productivity and fisheries
8	Ocean circulation patterns and their influence on distribution and abundance of fish
9	Fisheries forecasting: concept, objectives and interpretation of ocean thermal structure
10	Fisheries forecasting systems in India and other countries
11	Remote sensing and GIS: principles and applications in fisheries
12	Echo-sounders and SONAR; principles, applications and fish-finding techniques
13	Potential Fishing Zones (PFZ): concept, identification, interpretation and applications
14	Environmental factors affecting marine fisheries; temperature, salinity, nutrients, currents and productivity
15	Seasonal variations in fish catch in the Arabian Sea
16	Seasonal variations in fish catch in the Bay of Bengal; relationship between oceanographic conditions and fisheries production; revision

Practical

Practical No.	Experiment / Practical Topic
1.	Study and Interpretation of Tide Tables
2.	Determination of High Tide, Low Tide and Tidal Range from Tide Tables
3.	Analysis and Graphical Representation of Sea Water Temperature Data
4.	Analysis and Interpretation of Sea Water Salinity Data
5.	Analysis of Sea Water pH Data and its Interpretation
6.	Analysis and Interpretation of Dissolved Oxygen Data in Marine Waters
7.	Analysis of Nutrient Data (Nitrate and Phosphate) in Oceanic Waters
8.	Correlation of Temperature, Salinity, pH and Dissolved Oxygen with Fisheries Data
9.	Analysis of Primary Productivity Data of Marine Waters
10.	Analysis of Benthos Data: Abundance, Density and Distribution
11.	Study and Analysis of Marine Sediment Characteristics and Grain-Size Composition
12.	Interpretation of Fisheries Forecasting Information and Oceanographic Data
13.	Interpretation of Potential Fishing Zone (PFZ) Advisories and Maps
14.	Application of Remote Sensing and GIS in Fisheries Oceanography
15.	Study of Echo-Sounder: Principle, Operation and Interpretation of Echograms
16.	Study of SONAR and Other Fish-Finding Devices: Principle and Fisheries Applications