

COLLEGE OF FISHERIES, KISHANGANJ
BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture Plan/Schedule

Course Title: Climate Change and Fisheries Resource

Course no.: FRM 503 ;3(2+1)

THEORY

S. No.	Topic	No. of classes
1.	Climate and biosphere, Climatic forcing factors, history of earth's climate, Climate change	2
2.	The physical basis in marine and freshwater systems; Anthropogenic activities, greenhouse gases	2
3.	Climate change threats to fisheries resource-Temperature, Freshwater precipitation and sea level rise - Climate-induced degradation and loss of critical fish habitats.	4
4.	Tolerance limit - Temperature, pH and Salinity - Global warming and ocean acidification on fish early life stages	01
5.	Interaction between biodiversity - Effect on aquatic population	02
6.	Critical habitats - marine - freshwater-estuarine - high seas - endemic resources	01
7.	Indicators of climate change - Climate change and invasive species	02
8.	Impact of Climate change on fish- On fish biology, Reproduction and life stages, Distribution and abundance - Migration patterns	04
9.	Fish physiology - Disease prevalence, Adaptation strategies of fishes towards climate change.	03
10.	Trophic dynamics model - Methods for estimating effects of climate change on fishery resources	02
11.	Long term monitoring - Survey on effects of climate change on fisheries resources – Developing vulnerability index	01
12.	Policies and strategies on climate change	01
13.	Impact of climate change on livelihood, Mitigation (emission reduction, life cycle assessment, carbon sequestration, improved governance) and adaptation strategies	03
14.	Policy on climate change - IPCC, UNFCCC Harvesting strategies - fishing right - Fishery resource management - key indicator species	04

PRACTICAL

S. No.	Topic	No. of classes
1.	Fish production trend analysis- India- global	04
2.	Thermal effect on fish biology and reproduction	01
3.	Climate change effect on fish early life stages	01
4.	Climate change effect on fish physiology	01
5.	Estimation of threshold limits, temperature, pH and Salinity in natural waterbodies	03
6.	Generation of fish distributional map	03
7.	Group discussion on climate change, impact and mitigation strategies	01
8.	Presentation of case studies	02
Total no. of classes (THEORY+PRACTICAL)		48



(Anjali Pushp)