

Name of the course: Climate Change, Mitigation, and Adaptation Strategies (nature-based interventions)

Course Coordinator: Dr. Pipas Kumar, Ms. Kanchita Toppo

Duration: 30 Hours

Mode: Blended (Classroom + Field visit+ Report)

Target Audience: Undergraduate students, volunteers, NGO workers, Nature enthusiasts

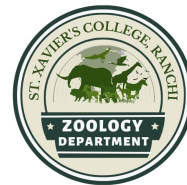
Course Objective:

Climate change is one of the most pressing challenges of this era. It is a global phenomenon affecting regions. It is important to understand the basic science of global warming and climate change, the past climatic trend and future prediction models, and mitigation and adaptation strategies together with the input of technologies and indigenous knowledge systems.

The course helps you understand what climate change is, how it affects you and others, and what can be done to address it. It aims to educate participants about the science, impacts, and potential solutions related to climate change. It typically focuses on understanding the causes of climate change, the impacts on various sectors and ecosystems, and the actions that can be taken to mitigate and adapt to its effects. It will also blend the present use of technologies and indigenous knowledge especially the adivasi's wisdom in combating climate change.

Learning Objective/Outcome of the course: After completing the course, students will be able to:

- Explain the fundamentals of green house gases and climate change science.
- Present the climate change framework and explain key issues under United Nation negotiation.
- Describe the expected consequences of climate change in India and the role of adaptation.
- Provide a rationale for climate change mitigation and propose actions in key sectors with special focus on agriculture and forest
- Outline basic elements of management and planning processes to deliver climate change action.
- Analyze the role of students in mitigation strategies
- Outline the indigenous technologies to combat the effect of climate change
- Outline the role of technologies and Artificial intelligence in mitigating effects of climate change
- Identify nature based solution to combat the effect of climate change



Course Structure and Modules:

Module No.	Module Title	Hours	Mode
1	Introduction to Climate Change Science	6	Classroom
2	International and national Legal and Policy Framework for Climate Change	6	Classroom
3	Climate Change Adaptation, Mitigation and nature based solution	6	Classroom
4	Indigenous knowledge system and Climate Change mitigation	6	Classroom
5	Capstone Field visit/ Report Writing	6	Field + Evaluation

Course Curriculum:

The course is structured around five basic modules.

1. Module 1: Introduction to Climate Change Science

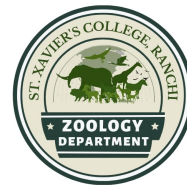
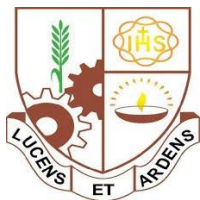
- Introduction to atmosphere, global warming and Climate Change Science
- Anthropogenic drivers of Climate Change
- Observed and projected Trends and Impacts of Climate Change, Importance of 1.5 °C and 2.0 °C limits to global warming.
- Climate change projections for the Indian sub-continent

2. Module 2: International and national Legal and Policy Framework for Climate Change

- International Provisions: United Nations Framework Convention on Climate Change (UNFCCC), The Kyoto Protocol, Paris agreement,
- India as a party to International agreements for climate change
- National climate action plan and Intended Nationally Determined Contributions (INDCs)
- Mission LiFE, Climate justice.

3. Module 3: Climate Change Adaptation, Mitigation and nature based solution

- Introduction to Climate Change Mitigation, Adaptation and resilience
- Identifying and Selecting Mitigation strategies by different sectors
- Nature-based solutions as a complementary approach: Restorative agricultural practices, Restoring native forest, Climate-smart agriculture



4. Module 4: Indigenous knowledge system and Climate Change mitigation

- Role of Sustainable Agriculture
- Traditional crops and houses: A methodology for Climate Change planning
- Reforestation approach
- Role of NTFP's

5. Module 5: Capstone Field visit/ Report Writing

- Conducting an empirical study for impact assessment of climate change
- Field report with findings, analysis, and recommendations
- Group presentations and evaluation

Evaluation Methodology for Internal Assignment

S.no	Evaluation Methodology	Marks
1	Summative Assessment	10
2	Class quizzes and Tests	20
3	Field Report	10
4	Group presentation	10
5	End-Term Examination	50
Total		100

End-Term Examination of 50 marks: 2hr duration

There will be two groups of questions.

- Group A is compulsory and will ten (10) questions/MCQ's of 1 mark each
- Group B will contain descriptive type 2 questions of 05 marks each, out of which any three are to answer.
- Group C will contain descriptive type 2 questions of 15 marks each, out of 6, any three are to answer.

Course Fee- Rs 2000/- (Two Thousand only)

Certification:

- 75% attendance is compulsory. Certificate awarded upon successful completion of the course

Course coordinators:

Dr. Pipas Kumar
Faculty (Environmental Science)
Department of Zoology
St. Xavier's College, Ranchi
M-8051061227, Email: pipsax2@gmail.com

Course Director:
Dr. Bharti Singh Raipat
HoD, Department of Zoology
St. Xavier's College, Ranchi