



Indian Institute of Technology

Course Details Report

Course No: ID1200

Course Name: Ecology and Environment

Course Type:

Theory

Description:

Objective: To sensitise students to the concepts of Sustainability and its relevance and application to different fields of Sciences and Engineering.

Course Content:

The course is divided into different modules that are taught by different teachers:
This a two credit course – with two instruction classes every week for 14 weeks.
The modules and the current set of teachers are as follows:

1. Introduction to Sustainability: Dr. B.S. Murty (Civil Engg.)
 - Introduction
 - Definition of Sustainability
 - Sustainability Goals,
 - Climate Change
 - Case Studies (Eg: Dams, Chemicals, e-waste, IOT, Landfill siting etc)
2. Ecology : Dr. Susy Varughese (Chemical Engg.)
 - Ecology – definitions of Ecological Systems
 - Biodiversity and Examples
 - Historical Impact of Economy on Ecology
 - Restoration / Ecological Engineering
3. Energy: Dr. Srinivas Jayanti (Chemical Engg.)
 - Energy Demand / Resources
 - Pollution from Energy generation
 - Energy and Climate Change (Global Warming)
 - Energy and Sustainability
 - Long Range and Short Range Solutions, (Global vs. India)
4. Water Quality and Waste Management: Dr. Ligy Philip (Civil Engg.)
 - Water Quality and Treatment
 - Waste Management and Treatment
 - Case Studies
5. Water Management and Resources: Dr. B. S. Murty (Civil Engg.)
 - Urban Drainage
 - Water Resource Management
 - Impact of Climate Change
6. Sustainability – Economics/Ethics : Dr. Sudhir Chella Rajan (Humanities and Social Sciences)
 - Sustainability and Economics
 - Sustainability and Ethics
 - Urban Planning Sprawl and Sanitation
 - Transportation
 - Energy and Smart Grid
 - Water , Waste and Governance
7. Environmental Management and Life Cycle Assessment: Dr. R. Ravi Krishna (Chemical Engg.)
 - Risk Assessment - Definition
 - Pollutant Pathways / Safety/ Exposure
 - Liability
 - Life Cycle Assessment and Environmental Management
 - Case Study

Wrap up – Emphasis on Climate Change and Adaptation

Course Structure:

- Online Recorded Video Lectures
- Live sessions for interaction / Q&A
- Assignments and Poster
- Two Exams – Online on Moodle

Text Books:

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Reference Books:

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Text Books:

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Reference Books:

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