ID1200 Ecology and Environment

Description: This a two-credit course, with two instructional classes every week for 14 weeks.

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

Course Content and Delivery: The course is divided into different modules that are taught by different instructors. The modules will be offered in the form of online recorded video lectures via CODE, followed by live interaction sections with the faculty (one per week). The modules and associated instructors per week are as follows:

Module	Module Name & Description	Name and details of the instructor
1	**Introduction to Sustainability** Definition of Sustainability Sustainable Development Goals Case Studies	Dr Satyanarayanan Seshadri (Applied Mechanics and Biomedical Engineering)
2	**Ecology - Part 1** **Climate Change and Ecology** Definitions of Ecological Systems and Biodiversity - Land Examples of Historical Impact of Economy on Ecology Restoration/Ecological Engineering	Dr Charuta Kulkarni (School of Sustainability IITM)
2	**Ecology - Part 2 Ecology and Environmental Management** Ecological Systems and Biodiversity - Marine Examples of Historical Impact of Economy on Ecology Restoration/Ecological Engineering	Dr Rahul Muralidharan (The Energy Consortium IITM)
3	**Energy** Energy Demand/ Resources Pollution from Energy generation Energy and Climate Change Energy and Sustainability Long Range and Short Range Solutions (Global vs. India)	Dr Kaushal Kumar Jha (Engineering Design)

4	**Water Resources and Management** Impact of Climate Change Water-related risks: floods and droughts Integrated water resources management Innovations in water resources extraction and management Case Studies	Dr Venkatraman Srinivasan (Civil Engineering)
5	**Waste Management** Redefining waste Past, present, and future of solid waste management 11Rs of circularity Waste management in business and ESG Case Studies	Dr Indumathi Nambi (Civil Engineering)
6	**Sustainability – Economics/Ethics** Sustainability and Economics Sustainability and Ethics	Dr Santosh Kumar Sahu (Humanities and Social Sciences)
7	**Environmental Measurement and Life Cycle Assessment** Life Cycle Assessment (LCA): Introduction, Stages, and Challenges	Dr Ashwin Mahalingam (Civil Engineering)

Course Evaluation
The course will be evaluated on the basis of a final exam, offered at the end of the course. It will involve multiple-choice questions and will be offered via CODE Platform.