

Department of Earth Sciences, Indian Institute of Technology, Kanpur, India

Proposal for a New Course

1. Course Number: ES 2XX
2. Course Title: Earth and Environment
3. Per Week Lectures: _3_(L); Tutorial: _0_(T); Laboratory: _0_(P); Additional Hours: _0_(A); Credits (3*L+T+P+A): 9. Duration of Course: Full Semester
4. Course Type: EME Basket course (UG)
5. Proposing Department: ES
Other Departments/IDPs which may be interested in the proposed course:
Other faculty members interested in teaching the proposed course: Thupstan Angchuk
6. Proposing Instructor(s): Amar Agarwal
7. Course Description:

7A. Objectives:

The objective of this course is to appraise the students with the complex interaction of the earth and the environment, with a particular reference to the interaction with humans.

The rising human population, socio-environmental shifts, and changing climate have constrained the sustainability of existing natural resources. This undergraduate-level course introduces students to the basic concepts of Earth and Environmental Science and its co-evolution with time. The course explains the components of natural ecosystems and their interconnectedness. Further, it highlights the earth's natural resources, current challenges, and its impact on various aspects of the environment and life. It also provides insights into the primary causes and possible solutions to environmental problems. Upon completing this course, the student will comprehensively understand Earth's processes and its crucial role in supporting life.

7B. Contents:

S. No	Topics	No. Of Lectures
1	Evolution of Planet Earth and its Environment	5
2	Environmental ecosystems	6
3	Energy Concepts in Environmental Science	5
4	Earth Materials & Management Science	4
5	Renewable & non-renewable energy resources	6
6	Interaction between atmosphere-hydrosphere-biosphere & Climate Change Beyond Global Warming	5
7	Environmental pollution: air, water, and soil	5
8	Environmental Impact Assessment	4

7C. Pre-requisites, if any: None

8. Recommended textbooks:

Textbooks: Class notes

Reference books:

- Cunningham, W. P., and Cunningham, M. A., 2010, Environmental Science - A Global Concern (11th Edition), McGraw Hill Publications
- Botkin, D. B., and Keller, E. A., 2010, Environmental Science - Earth as a Living Planet (7th Edition), John Wiley and Sons Inc.

9. Any other remarks: None

Dated: 19/03/2024 Proposer: Amar Agarwal

Dated: DUGC/DPGC Convener:

The course is approved / not approved

Chairman, SUGC/SPGC

Dated: _____