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| Course code | Course Title | Core/ Elective | | | | | |
| **2MC201CE** | **Environmental Science** | Core | | | | | |
| L | T | P/D | Credits | CIE | SEE |
| 2 | 0 | 0 | 2 | 40 | 60 |
| **Prerequisite:**  **Course Objectives:** The objective of this course is to make the student   * Describe various types of natural resources available on the earth surface. * Explain the concepts of an ecosystem and the biotic and abiotic components of various aquatic ecosystems. * Identify the values, threats of biodiversity, endangered and endemic species of India along with the conservation of biodiversity. * Explain the causes, effects and control measures of various types of environmental pollutions. * Describe the methods for water conservation, the causes, effects of global warming, climate change, acid rain, ozone layer depletion, population explosion.   **Course Outcomes** After completion of the course, the student will be able to   * **CO.1**.Describe the various types of natural resources. * **CO.2** Differentiate between various biotic and abiotic components of ecosystem. * **CO.3** Examine the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India. * **CO.4** Illustrate causes, effects, control measures of various types of environmental pollutions. * **CO.5** Explain the methods of water conservation, causes, effects of climate change, global warming, acid rain and ozone layer depletion, population   explosion. | | | | | | | |
| **Unit-I: (08 Hrs)**  **The Multidisciplinary Nature of Environmental Studies:** Definition, scope and importance, need for public awareness.  **Natural Resources:** Water Resources – Use and over utilization of surface and ground water, flood, drought, conflicts over water, Dams: Benefits and Problems. Food Resources –World Food Problems, effects of modern agriculture, fertilizer- pesticides problems, water logging, salinity, Forest Resources –Use and over exploitation, deforestation & its effect on tribal people. Land Resources –Land Degradation, environmental effect of mining, man induced landslides, soil erosion and desertification**.** Energy Resources –Growing energy needs, Renewable and Non-renewable energy resources.  **Unit-II: (06 Hrs)**  **Ecosystems:** Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in ecosystem, food chains, | | | | | | | |

ecological pyramids, ecological succession, types of ecosystems (marine, pond, river, forest, grassland, desert)

**Unit-III: (06 Hrs)**

**Biodiversity:** Levels of Biodiversity, Bio-geographical classification of India, Value of biodiversity, Threats to biodiversity, endangered and endemic species of India, Conservation of biodiversity, global and national efforts.

**Unit-IV: (07 Hrs)**

**Environmental Pollution**: Definition, Causes, effects and control measures of air pollution, water pollution, soil pollution, noise pollution, thermal pollution, solid waste management.

**Environment Protection Act**: Air, water, forest and wildlife Acts, issues in the enforcement of environmental legislation

**Unit-V: (06 Hrs)**

**Social Issues and the Environment:** Watershed management and environmental ethics. Climate change, global warming, acid rain, ozone layer depletion.

**Environmental Disaster Management:** Types of disasters, impact of disasters on environment, infrastructure, and development. Basic principles of disaster mitigation, disaster management, and methodology. Disaster management cycle and disaster management in India.

**Field Work:**

* Visit to a local area to document
* Visit to a local polluted area- market/slum area/Industrial area/traffic area

**Text Books:**

T1. Deswal S. and Deswal A., A Basic Course on Environmental studies, Dhanpat Rai & Co Pvt. Ltd. 2018. (Unit 1-5)

T2**.** Perspectives In Environmental Studies, Anubha Kaushik & C.P Kaushik, New Age International Publishers, 6th Edition 2018). (Unit 1–5).

**References/ Suggested Reading**

R1. Benny Joseph, ―Environmental Studies”, Tata McGraw Hill (3rd

Edition, 2017).

R2. Suresh K. Dhameja, Environmental Studies, S.K. Kataria & Sons, 2010. R3. Rajagopalan R., Environmental Studies, Second Edition, Oxford University Press, 2013.

R4. V.K. Sharma, Disaster Management, National Centre for Disaster Management, IIPE, 1999.

R5. Environmental studies by Erach Bharucha 2005, University Grants Commission, University Press.