

**I Year II Semester**

**Code: 20MC2502**

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**ENVIRONMENTAL SCIENCE**

**Course Objectives:**

1. Over all understanding of the natural resources
2. Basic understanding of the ecosystem and its diversity
3. Acquaintance on various environmental challenges induced due to unplanned anthropogenic activities
4. An understanding of the environmental impact of developmental activities
5. Awareness on the social issues, environmental legislation and global treaties

**Course Outcomes:** The student should have knowledge on

1. The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
2. The concepts of the ecosystem and its function in the environment. The need for protecting the producers and consumers in various ecosystems and their role in the food web
3. The biodiversity of India and the threats to biodiversity and conservation practices to protect the biodiversity
4. Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices
5. Social issues both rural and urban environment and the possible means to combat the challenges.

**UNIT-I:** Multidisciplinary nature of Environmental Studies:

Definition, multidisciplinary nature, Scope and Importance of environmental studies–Global Environmental Challenges: Global warming, population growth and explosion.

**UNIT-II:** Natural Resources:

Natural resources and associated problems

Forest resources–Use and over–exploitation, deforestation –Timber extraction–Mining–Water resources– Use and overutilization of surface and ground water, dams–benefits and problems.

Food resources: World food problems, changes caused by non-agriculture activities-effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity

**UNIT-III:** Ecosystems:

Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers – Energy flow in the ecosystem – Food chains, food webs and ecological pyramids.

**UNIT-IV: Biodiversity and its conservation:**

Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity-Hot-spots of biodiversity – Threats to biodiversity: habitat loss, man-wild life conflicts – Conservation of biodiversity.

**UNIT-V: Environmental Pollution and Social issues:**

Definition, Cause, effects and control measures of Air pollution, Water pollution, Nuclear hazards. Water conservation, rain water harvesting, Environmental Protection Act-Air (Prevention and Control of Pollution)Act.–Water (Prevention and control of Pollution) Act-Wildlife Protection Act – Forest Conservation Act- Public awareness.

**Text Books:**

1. Environmental Studies , K.V.S.G.Murali Krishna, VGS Publishers, Vijayawada
2. Environmental Studies, R. Rajagopalan, 2<sup>nd</sup> Edition,2011,OxfordUniversityPress
3. Environmental Studies, P. N. Palanisamy, P. Manikandan, A.Geetha and K.Manjula Rani; Pearson Education, Chennai.

**References:**

1. Text Book of Environmental Studies, Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
2. A Textbook of Environmental Studies, Shaashi Chawla, TMH, New Delhi
3. Environmental Studies, Benny Joseph, Tata Mc Graw Hill Co, New Delhi
4. Perspectives in Environment Studies, Anubha Kaushik, C P Kaushik, New Age International Publishers,2014