



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

ENVIRONMENTAL SCIENCE

Course Code: GR15A2001
II Year I Semester

L:2 T:0 P:0 C:0

Prerequisites: Basic knowledge on basic sciences and natural resources

Course Objectives

- To understand about the importance and scope of Environment.
- To identify, analyze and solve the problems in Environment.
- To participate in team oriented activities aiding constructive thinking and recognize the value of continuing education.

Course Outcomes

- Students will be able to realize the significance of Green development and Wild life protection.
- Students will be able to apply fundamentals of cleanliness and importance of natural resources.
- Students will be able to adopt, grasp and absorb knowledge across disciplines and ability to integrate within research areas of Environmental protection.

Unit-I

Introduction to Environment, Ecology and Ecosystems: Definition, Importance and Scope of Environmental Studies, Public Awareness and Participation. Ecology, Concept of Ecosystem, Classification of Ecosystem, Structure, Components and Function of Ecosystem. Typical Ecosystem, Food Chain, Food Web. Biodiversity- Types and values.

Unit-II

Natural Resources: Definition, Occurrence, Classification of resources, Important natural resources for human society, Utilization-positive and negative effects of Water resources, Mineral resources, Forest resources, Energy resources, Land resources. Role of individuals in conservation of important natural resources.

Unit-III

Environmental Pollution: Definition, Classification of Pollution, Types of Pollution and Pollutants. Causes, effects and control of – Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution and Nuclear Pollution.



Unit-IV

Environmental Problems and Management Policies: Natural Disasters-Types, causes and effects; Global warming, Climate change-El Nino-La Nina, Ozone layer- location, role and degradation; Deforestation and desertification. Management: Technological solutions, Preventive methods, control techniques; Green Belt development, Rainwater harvesting, Renewable and alternate resources.

Unit-V

National Policy on Environment Protection and Sustainability: Air (Pollution and prevention) act 1981; Water (Pollution and prevention) Act 1974; Pollution Act 1977; Forest Conservation Act; Wildlife Protection Act; Municipal solid waste management and handling Act; Biomedical waste management and handling Act; Hazardous waste management and handling rules. Role of IT in environment, environmental ethics, environmental economics.

Sustainable development: Cause and Threats to sustainability; Strategies for achieving sustainable development; Concept of Green buildings and Clean Development Mechanism (CDM).

Teaching Methodology

1. White board and marker
2. OHP and Field visit

Text Books

1. Text Book of Environmental Studies, ErachBarucha. University Press
2. Text book of Environmental Science and Technology by M.Anji Reddy 2007

Reference Books

1. Biotechnology & Environmental Chemistry. Surinder Jeswal& Anupama Deswal, DhanpatRai & Co Pvt. Ltd.
2. A Text Book of Environmental Science. Aravind Kumar. APH Publishing Corporation.
3. Glimpses of Environment. Dr. KVSG. Murali Krishna. Environmental