



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Integrated Master of Computer Applications, 6th Semester

Subject Name: Environmental Studies

Subject Code: 2668604

With effective
from academic
year 2018-19

1) Learning Objectives:

1. Understand the importance of environmental science
2. Develop sensitivity to protect environment
3. Understand how an individual can contribute in protecting an environment

2) Prerequisites: None

3) Contents:

Unit	Chapter Details	Weightage Percentage
Unit I	Introduction to Environment and Environmental Studies The Multidisciplinary nature of environmental studies: Scope and importance, Need for public awareness	10%
Unit II	Natural Resources: Renewable and non-renewable resources a) Forest resources: Use and Over-exploitation, Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems. c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources. d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity. e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. -Role of an individual in conservation of natural resources. -Equitable use of resources for sustainable lifestyles.	25%
Unit III	Ecosystems Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem	20%-
Unit IV	Environmental Pollution Environmental pollution types, Causes, effects and control measures of environmental pollution, Role of an individual in prevention of pollution. Solid waste Management: Causes, effects and control measures of urban and industrial wastes. -Disaster management: floods, earthquake, cyclone and landslides	25%
Unit V	Social Issues and the Environment Sustainable development, Climate changes, Environmental Laws, Natural Reserves, and Public awareness	10%



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Unit VI	Human Population and the Environment -Population growth, variations among nations. -Population explosion-Family welfare Programme. -Environment and human health. -Value Education. -Role of information Technology in Environment and human health.	10%
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4. Text Book:

- 1) Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha
Second edition, 2013 Publisher: Universities Press (India) Private Ltd, Hyderabad

5. Reference Books:

- 1) De A.K., Environmental Chemistry, Wiley Eastern Ltd. 2. Agarwal, K.C.2001
- 2) Environmental Biology, Nidi Publ.Ltd.Bikaner.
- 3) Benny Joseph,. Environmental Studies, TMH publishers
- 4) Environmental Studies by Dr. Suresh K Dhameja, 2007 Published by : S K Kataria & Sons New Delhi
- 5) U K Khare,, Basics of Environmental Studies, Published by Tata McGraw Hill,2011
- 6) Prof Dr N S Varandani , Basics of Environmental Studies, Publisher: LAP,2013
Lambert Academic Publishing , Germany
- 7) Daniel B Botkin & Edward A Keller , Environmental Sciences Publisher: John Wiley & Sons.
- 8) R. Rajagopalan , Environmental Studies, Oxford University Press

6. Course Outcome:

- 1) After learning the course the students should be able to
- 2) Understand and realize the multi-disciplinary nature of the environment, its components, and inter-relationship between man and environment.
- 3) Understand the relevance and importance of the natural resources in the sustenance of life on earth and living standard.
- 4) Comprehend the importance of ecosystem, biodiversity and natural bio geo chemical cycle.
- 5) To correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention.
- 6) Identify different types of environmental pollution and control measures.
- 7) To correlate the exploitation and utilization of conventional and non-conventional

Major Equipment: Multimedia projector with computer

ACTIVE LEARNING ASSIGNMENTS:

Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding of environmental issues – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus of Environmental Studies is covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should be sent to achievements@gtu.edu.in.