

ENVIRONMENTAL STUDIES

[As per Choice Based Credit System (CBCS) scheme]

(Effective from the academic year 2015 -2016)

SEMESTER - I/II

Subject Code	15CIV18/15CIV28	IA Marks	20
Number of Lecture Hours/Week	04	Exam Marks	80
Total Number of Lecture Hours	25	Exam Hours	03

CREDITS – 01

Course Objectives:

1. Recognize major concepts in environmental sciences and demonstrate in-depth understanding of the environment.
2. Develop analytical skills, critical thinking, and demonstrate problem-solving skills using scientific techniques.
3. Demonstrate the knowledge and training for entering graduate or professional schools, or the job market.

Module - 1

Introduction: Environment - Components of Environment Ecosystem: Types & Structure of Ecosystem, Balanced ecosystem Human Activities – Food, Shelter, And Economic & Social Security. **2 Hours**

Impacts of Agriculture & Housing Impacts of Industry, Mining & Transportation Environmental Impact Assessment, Sustainable Development. **3 Hours**

Module - 2

Natural Resources, Water resources – Availability & Quality aspects, Water borne diseases & water induced diseases, Fluoride problem in drinking water Mineral resources, Forest Wealth Material Cycles – Carbon Cycle, Nitrogen Cycle & Sulphur Cycle. **2 Hours**

Energy – Different types of energy, Conventional sources & Non Conventional sources of energy Solar energy, Hydro electric energy, Wind Energy, Nuclear energy, Biomass & Biogas Fossil Fuels, Hydrogen as an alternative energy. **3 Hours**

Module -3

Environmental Pollution – Water Pollution, Noise pollution, Land Pollution, Public Health Aspects.	2 Hours
Global Environmental Issues: Population Growth, Urbanization, Land Management, Water & Waste Water Management.	3 Hours
Module -4	
Air Pollution & Automobile Pollution: Definition, Effects – Global Warming, Acid rain & Ozone layer depletion, controlling measures.	3 Hours
Solid Waste Management, E - Waste Management & Biomedical Waste Management - Sources, Characteristics & Disposal methods.	2 Hours
Module - 5	
Introduction to GIS & Remote sensing, Applications of GIS & Remote Sensing in Environmental Engineering Practices.	2 Hours
Environmental Acts & Regulations, Role of government, Legal aspects, Role of Non-governmental Organizations (NGOs) , Environmental Education & Women Education.	3 Hours
Course Outcome:	
Students will be able to,	
<ol style="list-style-type: none"> 1. Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale, 2. Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment, 3. Demonstrate ecology knowledge of a complex relationship between predators, prey, and the plant community, 4. Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues 	
Text Books:	
<ol style="list-style-type: none"> 1. Benny Joseph (2005), “Environmental Studies”, Tata McGraw – Hill Publishing Company Limited. 2. R.J.Ranjit Daniels and Jagadish Krishnaswamy, (2009), “Environmental Studies”, Wiley India Private Ltd., New Delhi. 	

3. R Rajagopalan, **“Environmental Studies – From Crisis to Cure”**, Oxford University Press, 2005,
4. Aloka Debi, **“Environmental Science and Engineering”**, Universities Press (India) Pvt. Ltd. 2012.

Reference Books:

1. Raman Sivakumar, **“Principals of Environmental Science and Engineering”**, Second Edition, Cengage learning Singapore, 2005
2. P. Meenakshi, **“Elements of Environmental Science and Engineering”**, Prentice Hall of India Private Limited, New Delhi, 2006
3. S.M. Prakash, **“Environmental Studies”**, Elite Publishers Mangalore, 2007
4. Erach Bharucha, **“Text Book of Environmental Studies”**, for UGC, University press, 2005
5. G.Tyler Miller Jr., **“Environmental Science – working with the Earth”**, Tenth Edition, Thomson Brooks /Cole, 2004
6. G.Tyler Miller Jr., **“Environmental Science – working with the Earth”**, Eleventh Edition, Thomson Brooks /Cole, 2006
7. Dr.Pratiba Sing, Dr.AnoopSingh and Dr.Piyush Malaviya, **“Text Book of Environmental and Ecology”**, Acme Learning Pvt. Ltd. New Delhi.