

# RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

Credit Based Grading System

**Computer Science & Engineering, IV-Semester**

**BE-3001 Energy, Environment, Ecology & Society**

## **Unit –I**

**Energy-** Sources of Energy : Renewable & Non Renewable, Fossil fuel, Biomass Geothermal, Hydrogen, Solar, Wind, hydal, nuclear sources.

## **Unit –II**

**Ecosystem** – Segments of Environment: Atmosphere, hydrosphere, Lithosphere, biosphere. Cycles in Ecosystem – Water, Carbon, Nitrogen. Biodiversity: Threats and conservation,

## **Unit –III**

### **Air Pollution & Sound Pollution -**

**Air Pollution:** Air pollutants, classification, (Primary & secondary Pollutants) Adverse effects of pollutants. Causes of Air pollution chemical, photochemical, Green house effect, ozone layer depletion, acid Rain.

**Sound Pollution:** Causes, controlling measures, measurement of sound pollution (deciblage), Industrial and non – industrial.

## **Unit –IV**

**Water Pollution**– Water Pollution: Pollutants in water, adverse effects. Treatment of Domestic & Industrial water effluent.

**Soil Pollution** – Soil Profile, Pollutants in soil, their adverse effects, controlling measures.

## **Unit –V**

**Society, Ethics & Human values**– Impact of waste on society. Solid waste management Nuclear, Thermal, Plastic, medical, Agriculture, domestic and e-waste). Ethics and moral values, ethical situations, objectives of ethics and its study . Preliminary studies regarding Environmental Protection Acts , introduction to value education, self exploration, sanyam & swasthya.

## **References:**

- 1.Harris, CE, Prichard MS, Rabin 's MJ, "Engineering Ethics"; Cengage Pub.
- 2.Rana SVS ; "Essentials of Ecology and Environment"; PHI Pub.
- 3.Raynold, GW "Ethics in information Technology"; Cengage.
- 4.Svakumar; *Energy Environment & Ethics in society*; TMH
- 5.AK De "Environmental Chemistry"; New Age Int. Publ.
- 6.BK Sharma, "Environmental Chemistry" ; Goel Publ. House.
- 7.Bala Krishnamoorthy; "Environmental management"; PHI
- 8.Gerard Kiely, "Environmental Engineering" ; TMH
- 9.Miller GT JR; *living in the Environment* Thomson/cengage
- 10.Cunninghan WP and MA; *principles of Environment Sc*; TMH
- 11.Pandey, S.N. & Mishra, S.P. *Environment & Ecology, 2011, Ane Books , Pvt. Ltd, New Delhi*
- 12.Joseph, B. *Environmental Studies, 2009 Tata Mcgraw Hill, Edu India Ltd. New Delhi.*
- 13.Gour R.R, Sangal, R &Bagaria, G.P. , *Excel Books, A-45, Naraina Phase-I New Delhi.-110028*