

ENVIRONMENTAL STUDIES AND HEALTH CARE ENGINEERING (3-0-0)

Objective: This course introduces the environmental consequences of Industries on the human health and methods for minimizing their impact through technology and legal system to the undergraduate engineering students.

Module-I [8 Periods]

Ecological concept, Ecosystem processes like energy flow, food chain, food web. Water cycle, oxygen cycle and nitrogen cycle. Environmental gradients and tolerance level of environment factors. Basics of Indian Environmental laws, Atmospheric chemistry and temperature profile. Soil pollution and its remedies, Origin and procedure of EIA.

Module-II [8 Periods]

Causes, effects and control of air, noise and water pollution, treatment of surface water and waste water (pre-, primary and secondary).DO, BOD and COD of waste water treatment process.Sources, properties and management of solid wastes and hazardous wastes. [6 Periods]

Module-III [6 Periods]

Occupational health and safety act and procedure. Hazard control measures in industries like steel, petroleum and pharmaceutical. First aid treatments.

Module-IV [8 Periods]

Environment and Human health:-

Occupational health – nutrition, control of communicable diseases, environmental sanitation, mental health.Prevention of occupational diseases through medical measures, engineering measures and legislation. Role of information technology in human health, causes, prevention and control of diseases like hepatitis, typhoid and malaria.

Text Book:

1. Environmental Studies by Dash & Kumar, India Tech Publication, New Delhi
2. Environmental Studies by R.Rajagopalan Oxford University Press
3. Environmental Science and Engineering, 2E, by Aloka Debi, University Press
4. Environmental Engineering and Safety by Mohapatra, Seven Seas Publication, Cuttack
5. Environmental Engineering & Safety by Dash and Panda, India Tech Publication, New Delhi.

Reference:

1. Essentials of Community Health Nursing. By K. Park, M/s. Banarsidas Bhanot, Jabalpur
2. Environmental Studies by Dr. S. K. Dhameja, Kataria and Sons, New Delhi
3. Environmental Engineering, G. Kiely, McGraw Hill International Edition, New Delhi
4. Environmental Studies by Bharucha, University Press, Hyderabad.