

**Unit - I Safety and Health Management**

- i. Occupational Health Hazards, Promoting Safety, Safety and Health training, Stress and Safety.
- ii. Ergonomics - Introduction, Definition, Objectives, Advantages. Ergonomics Hazards - Musculoskeletal Disorders and Cumulative Trauma Disorders.
- iii. Importance of Industrial safety, role of safety department, Safety committee and Function

**Unit - II Radiation and Industrial Hazards**

- i. Types and effects of radiation on human body, Measurement and detection of radiation intensity. Effects of radiation on human body, Measurement – disposal of radioactive waste, Control of radiation
- ii. Industrial noise -Sources, and its control, Effects of noise on the auditory system and health, Measurement of noise ,
- iii. Different air pollutants in industries, Effect of different gases and particulate matter, acid fumes, smoke, fog on human health
- iv. Vibration - effects, measurement and control measures
- v. Industrial Hygiene.

**Unit -III Electrical Hazards and Hazards in Construction Industry**

- i. Safe limits of amperages, voltages, distance from lines, *etc.*, Joints and connections, Overload and Short circuit protection, Earthing standards and earth fault protection, Protection against voltage fluctuations, Effects of shock on human body Hazards from Electrical equipment, Criteria in their selection, installation, maintenance and use, Control of hazards due to static electricity
- ii. Introduction of Construction industry, Scaffolding and Working plat form, Welding and Cutting, Excavation Work, Concreting and Cementing work, Transportation of men and material, Handling and Storage of compressed gas.

**Unit - IV Fire and other Hazards**

- i. General causes and classification of fire, Detection of fire, extinguishing methods, fire fighting installations with and without water.
- ii. Machine guards and its types, automation. High pressure hazards, safety, emptying, inspecting, repairing, hydraulic and non-destructive testing, hazards and control in mines.

**Reference Books:**

1. R.K. Jain and Sunil S. Rao, Industrial Safety , Health and Environment Management Systems, Khanna publishers , New Delhi (2006)
2. Slote. L., Handbook of Occupational Safety and Health, John Willey and Sons, New York