

2.11 30511 HAZARD CONTROL IN MANUFACTURING

UNIT-1

- 1.1 Introduction, Classification of Engineering Industry, Manufacturing Processes, Hot Working, Foundry operations, furnace and equipment's, hazards, safe methods of operation.
- 1.2 Forging operations, heat radiation, maintenance of machines, shop equipment's and hand tools, safe work practice. Operations in hot and cold rolling mills.

UNIT-2

- 2.1 Machinery safeguard, Point of Operation, Principle of machine guarding, breakdown of machine guarding, types of guards and devices.
- 2.2 Cold Working, Safety in Power Presses, primary & secondary operations, shearing, bending, rolling, drawing.
- 2.3 Metal Cutting- safety in turning, boring, milling, planning and grinding. Maintenance of machine tools - hazards and prevention.

UNIT-3

- 3.1 Welding and Cutting-Safety Precautions of Gas welding and Arc Welding, Cutting and Finishing.
- 3.2 Gas Cylinders and Equipment's. Heat Treatment and Surface Treatment- Furnaces and Salt baths-operations and maintenance, safety in handling and storage of salts, disposal of effluents, health precautions, exposure to hazardous fumes, source of fumes, ventilation and fume protection.

UNIT-4

1. Material Handling, Classification, safety consideration, manual and mechanical handling.
2. Handling assessments and techniques, lifting, carrying, pulling, pushing, palletizing and stocking.
3. Material Handling Equipment's, operation & maintenance. Maintenance of common elements wire rope, chains slings, hooks, clamps.

Reference Books:

1. Accident Prevention Manual for Industrial Operations: National Safety Council, Chicago
2. Roland P. Blake, Industrial Safety
3. N C Balchin, Health and Safety in Welding and Allied process, Jaico Publishers
4. S. Kalpak Jian and S.R. Schmidt, Manufacturing Engineering and Technology, Pearson Education Asia