

# AMSF-18 HAZARD CONTROL IN MANUFACTURING

## UNIT-1 INTRODUCTION

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

## UNIT-2 MACHINERY SAFEGUARD

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

## UNIT-3 WELDING AND CUTTING

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

## UNIT-4 MATERIAL HANDLING

- 4.1 Classification- safety consideration
- 4.2 Manual and mechanical handling.
- 4.3 Handling assessments and techniques- lifting, carrying, pulling, pushing, palletizing and stocking.
- 4.4 Material Handling Equipment's- operation & maintenance.
- 4.5 Maintenance of common elements wire rope, chains slings, hooks, clamps.

### References 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, JaicoPublishers
4. S. Kalpakjian and S.R. Schmid, Manufacturing Engineering and Technology, Pearson Education Asia