

SSLC, HSE, DIPLOMA, B.E/B.TECH, M.E/M.TECH, MBA, MCA

*Notes*

*Syllabus*

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## **OME553 INDUSTRIAL SAFETY ENGINEERING**

### **DETAILED SYLLABUS**

#### **OBJECTIVES:**

- To provide in depth knowledge in Principles of Environmental safety and its applications in various fields.
- To provide the knowledge of air and water pollution and their control.
- To expose the students to the basics in hazardous waste management.

#### **UNIT I SAFETY IN METAL WORKING AND WOOD WORKING MACHINES**

General safety rules, principles, maintenance, Inspections of turning machines, boring machines, milling machine, planning machine and grinding machines, CNC machines, Wood working machinery, types, safety principles, electrical guards, work area, material handling, inspection, standards and codes- saws, types, hazards. Inspection of material handling equipments.

#### **UNIT II SAFETY IN WELDING AND GAS CUTTING**

Gas welding and oxygen cutting, resistances welding, arc welding and cutting, common hazards, personal protective equipment, training, safety precautions in brazing, soldering and metalizing – explosive welding, selection, care and maintenance of the associated equipment and instruments – safety in generation, distribution and handling of industrial gases-colour coding – flashback arrestor – leak detection-pipe line safety-storage and handling of gas cylinders.

#### **UNIT III SAFETY IN COLD FORMING AND HOT WORKING OF METALS**

Cold working, power presses, point of operation safe guarding, auxiliary mechanisms, feeding and cutting mechanism, hand or foot-operated presses, power press electric controls, power press set up and die removal, inspection and maintenance-metal sheers-press brakes - Hot working safety in forging, hot rolling mill operation, safe guards in hot rolling mills – hot bending of pipes, hazards and control measures - Safety in Gas Furnace Operation, Cupola, Crucibles, Ovens, Foundry Health Hazards, Work Environment, Material Handling in Foundries, Foundry Production Cleaning And Finishing Foundry Processes.

#### **UNIT IV SAFETY IN FINISHING, INSPECTION AND TESTING**

Heat treatment operations, Electro Plating, Paint Shops, Sand and Shot Blasting, Safety In Inspection And Testing, Dynamic Balancing, Hydro Testing, Valves, Boiler Drums And Headers, Pressure Vessels, Air Leak Test, Steam Testing, Safety In Radiography, Personal Monitoring Devices, Radiation Hazards, Engineering And Administrative Controls, Indian Boilers Regulation.

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### **UNIT V INDUSTRIAL SAFETY**

Advances in Industrial Ergonomics and safety, Work and protective clothing, Theory and practice of Industrial safety, Industrial Noise and Vibration, Machine Guarding and Industrial machine safety, Manual material handling, Modeling for safety and health.

### **OUTCOMES:**

#### **Students will be able to**

- Illustrate and familiarize the basic concepts and scope of engineering safety.
- Understand the standards of professional conduct that are published by professional safety organizations and certification bodies.
- Illustrate the importance of safety of employees while working with machineries.

### **REFERENCES:**

1. Philip E. Hagan, John Franklin Montgomery, James T. O'Reilly, Accident Prevention Manual – NSC, Chicago, 2009.
2. Charles D. Reese, Occupational Health and Safety Management, CRC Press, 2003.
3. John V. Grimaldi and Rollin H. Simonds Safety Management by All India Travelers Book seller, New Delhi, 1989.
4. John Davies, Alastair Ross, Brendan Wallace, Safety Management: A Qualitative Systems Approach, CRC Press, 2003.
5. Health and Safety in welding and Allied processes, welding Institute, UK, High Tech. Publishing Ltd., London, 1989.
6. Anil Mital Advances in Industrial Ergonomics and Safety Taylor and Francis Ltd, London, 1989
7. Dr. Vincent Matthew Ciriello (Prediction of the maximum acceptable weight of lift from the frequency of lift, journal of industrial ergonomics (2014), pg .225–237