5042 - SAFETY ENGINEERING												
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)							
					Theory		Practical Ex.		Total			
Lectures	Practical	Credit										
4	1	5	25	25	3 hrs.	100	25 oral		175			
Pre-requisite		Source	Semester		Theory	Test	Total	TW	PR	Gr Total		
Nil		MEC			75	25	100	25	50	175		

RATIONALE: - With rapid advances in industrial processes, new types of danger to life and health are being increasingly introduced. These accidents represent a social loss of great magnitude. Therefore an attempt has been made in this subject to highlight the different safety aspects, laws and rules to combat the cause of accidents.

COURSE CONTENT

Hrs Mks

1. INTRODUCTION TO INDUSTRIAL SAFETY

Approach to safety – OSHA, NIOSH, EPA ; Need of safety, objectives of safety; Safety programme; Duties of safety personnel; Development of safety awareness

2. ACCIDENT – CAUSES AND COSTS

Definition of accident; Classification of accident; Causes of accident & factors affecting it; Cost of accident to the management; Accident sequence; Accident prevention methods

3. SAFETY IN MATERIAL HANDLING

Classification of safety in Material Handling; 3.2 Manual Handling; Effective methods of lifting; Fall – Definitions; Causes of common fall – preventive measures; Types of falls and safety regarding fall .

4. HAZARDS IN INDUSTRY & THEIR PREVENTION

Fire Hazards and prevention: Types of fires, classification; Causes of fire in a industry; Prevention of fire hazards; Fire detection and control;

Machine Hazards and prevention; Types of Machine hazards; Common safe guarding methods and devices; Pressure Vessel Hazards; Causes of pressure vessel accidents

Controlling fire in pressure vessel; Common explosions need for a safety valve; Boiler acts

Hazards in Chemical Industry: Classification of hazardous chemicals; Properties of flammable chemicals; Safety in storage and transportation of flammable liquids; Types of chemical emergencies and their prevention

Hazards in welding industry: Classification; Do's and Don'ts in welding operation; Safety in TIG, MIG welding.

Electrical Hazards: Basics of electricity; Safety precautions to be taken when installing a electrical equipment; Electrical safety training

Noise: Introduction to noise; Effect of noise; Remedial measures to combat noise

5. ACCIDENT REPORT

Benefits of accident report; Accident report form; Personal protective equipment; Choice and use of personal protective equipment; Respiratory protective equipment; Non respiratory protective equipment; Hand tools and portable tools; Hazards of hand tools and portable tools; Safety in handling hand tools and portable tools; Do's and don's with hand tools and portable tools

6. LABOUR WELFARE

Welfare provisions; Working hours; Power of a factory inspector; Penalties

7. INSURANCE COVERAGE

Definition of insurance: Types of insurance; Advantages of insurance; Life insurance;

Advantages of life insurance; Kinds of life insurance policies; Procedure of making LIC; Settlement of life insurance claims

8. HOUSE KEEPING

Necessity of house keeping; Advantages of house keeping; Duties of supervisors towards house keeping

9. SAFETY LAWS AND ROLE OF FACTORY INSPECTOR

Definition of inspection; Objectives of factory inspector; Laws of safety related to health; Safety provisions under Factories Act 1948; Factories Act 1961.

REFERENCE BOOKS

Note: - Teaching hours and marks distribution could not be made available till the time of printing. The drafting committee shall supply the addenda)