COURSE CONTENT

INDUSTRIAL SAFETY								
III Semester: ST								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
BSTD32	**Elective**	3	0	0	3	40	60	100
Contact Classes: 48	**Total Tutorials: Nil**	**Total Practical Classes: Nil**				**Total Classes: 45**		
Prerequisite: NIL								

I. COURSE OVERVIEW:

In this course, students develop a comprehensive understanding of industrial safety principles and practices. They are equipped with the skills to identify, assess, and manage workplace hazards, promoting a culture of safety in their future engineering careers. Emphasis is placed on industrial safety and OSHA regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance

II. COURSE OBJECTIVES:

The student will try to learn:

I. Inherent safety principles in managing risks.
II. Prioritizing interventions based on the inherent hazards of the site and/or pipeline, performance of duty holders in controlling risks and other defined operational intelligence.
III. The immediate causes of any deficiencies in duty holders arrangements for managing risks.

III. COURSE OUTCOMES:

After successful completion of the course, students should be able to:

CO 1 Provide information regarding different elements of industrial water pollution and Methods of treatment.
CO 2 Expose to the various industrial applications, maintenance, preventive measures taken against wear and tear.
CO 3 Know how to take safety measures in executing works
CO 4 Identify the need for maintenance (or) replacement of equipment
CO 5 Understand the need for periodic and preventive maintenance.
CO 6 Estimate the various types of loads such as Dead, Live and Wind loads on PEB’s

IV. COURSE CONTENT:

MODULE –I: INDUSTRIAL SAFETY (10)

Accident, causes, types, results and control, mechanical and electrical hazards, types, causes and preventive steps/procedure, describe salient points of factories act 1948 for health and safety, wash rooms, drinking water layouts, light, cleanliness, fire, guarding, pressure vessels, etc, Safety color codes. Fire prevention and firefighting, equipment and methods.

MODULE –II: FUNDAMENTALS OF MAINTENANCE ENGINEERING (10)
Definition and aim of maintenance engineering, Primary and secondary functions and responsibility of maintenance department, Types of maintenance, Types and applications of tools used for maintenance, Maintenance cost & its relation with replacement economy, Service life of equipment.

MODULE –III: WEAR AND CORROSION AND THEIR PREVENTION (10)
Wear- types, causes, effects, wear reduction methods, Lubricants - types and applications, Lubrication methods, general sketch, working and applications, Screw down grease cup, Pressure grease gun, Splash lubrication

Definition, principle and factors affecting the corrosion. Types of corrosion, corrosion prevention methods.

MODULE –IV: FAULT TRACING (09)
Fault tracing-concept and importance, decision tree concept, need and applications, sequence of fault-finding activities, show as decision tree, draw decision tree for problems in machine tools, hydraulic, pneumatic, automotive, thermal and electrical equipment's like Any one machine tool, pump, air compressor.

MODULE –V: PERIODIC AND PREVENTIVE MAINTENANCE (09)
Periodic inspection-concept and need, degreasing, cleaning and repairing schemes, overhauling of mechanical components, overhauling of electrical motor, common troubles and remedies of electric motor, repair complexities and its use, definition, need, steps and advantages of preventive maintenance

V. TEXT BOOKS:

1. Reese, Charles D., and James Vernon Eidson. Handbook of OSHA construction safety and health. crc press, 2006.
2. Higgins, Lindley R., R. Keith Mobley, and Darrin Wikoff. Maintenance engineering handbook. McGraw-Hill Education, 2008.

VI. REFERENCE BOOKS:

1. Pump-hydraulic Compressors, Audels, McGraw Hill Publication.
2. Foundation Engineering Handbook, Winterkorn, Hans, Chapman & Hall London.

VII. ELECTRONICS RESOURCES:

1. https://youtu.be/v-eltsixu4I
2. https://hsseworld.com/wp-content/uploads/2020/08/Industrial-Safety-Management.pdf
3. https://nibmehub.com/opacservice/pdf/read/Industrial%20Safety%20and%20Health%20Management.pdf

VIII. MATERIALS ONLINE:

1. Course Template
2. Tutorial Question Bank
3. Assignments
4. Model Question Paper – I
5. Model Question Paper - II
6. Lecture Notes
7. Power point presentation