INSTITUTE	**FACULTY OF TECHNOLOGY**
PROGRAM	**MASTER OF TECHNOLOGY in CHEMICAL ENGINEERING**
SEMESTER	**3**
COURSE TITLE	**INDUSTRIAL SAFETY**
COURSE CODE	**01OE9003**
COURSE CREDITS	**3**

Objective:

1 To study about the job specific technical and professional skills
2 To study about high level inquiry, analytical and problem solving skills
3 To analyze the work place safety and methods to curb them
4 To point out the chemical hazards their safety measures and prevention process
5 To Acquire in-depth knowledge in field of safety engineering and technology including wider and global perspective, with an ability to discriminate, evaluate, analyse and synthesise existing and new knowledge, and integration of the same for enhancement of industrial safety.

Course Outcomes: After completion of this course, student will be able to:

1 Understand Importance of Safety and Important related Acts.
2 Apply Maintenance techniques as per requirements and able to compare for with different technique for better performance
3 Understand wear and corrosion, its causes and remedial actions for preventions.
4 Demonstrate fault tracing, its methods and application.

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	50	30	20	0	0

Contents : Unit	Topics	Contact Hours
1	**Industrial safety** 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	7

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Contents : Unit	Topics	Contact Hours
2	**Fundamentals of maintenance engineering** 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.	9
3	**Wear and Corrosion and their prevention** Wear- types, causes, effects, wear reduction methods, lubricants-types and applications, Lubrication methods, general sketch, working and applications, Screw down grease cup, ii. Pressure grease gun, iii. Splash lubrication, iv. Side feed lubrication, Ring lubrication, Definition, principle and factors affecting the corrosion.	12
4	**Fault tracing** 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 Equipments like, I. Any one machine tool, ii. Pump iii. Air compressor.	8
5	**Periodic and preventive maintenance** 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. Steps/procedure for periodic and preventive maintenance of: I. Machine tools, ii. Pumps, iii. Air compressors, iv. Diesel generating (DG) sets	6
Total Hours		**42**

Textbook :

1 Accident Prevention Manual for Industrial Operations, N.S.C.Chicago, N.S.C.Chicago, 1982

2 Industrial Accident Prevention", Heinrich H.W, McGraw-Hill Company,, 1980

References:

1 Safety Management in Industry, Safety Management in Industry, Krishnan N.V, Jaico Publishing House, 1997

2 Safety at Work, Safety at Work, John Ridley, Butterworth & Co., 1983

3 Industrial Safety, Industrial Safety, Blake R.B, Prentice Hall, 1973

4 Environmental, Safety and Health Engineering,, Environmental, Safety and Health Engineering,, Gayle Woodside & Dianna Kocurek, John Wiley & Sons, 1997

5 Encyclopedia of Occupational Health and Safety, Encyclopedia of Occupational Health and Safety, ILO, International Labour Office., 2000

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
15.00	20.00	30.00	30.00	5.00	0.00

Instructional Method:

1 For giving the knowledge of Industrial safety and secutity use of videos , books and case studies are taken up

Supplementary Resources:

1 https://onlinecourses.nptel.ac.in/noc22_mg97

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