

Branch Name:	Civil Engineering
Semester/Year:	Semester VI / Third Year
Subject Title:	Health and Safety Engineering(Elective-I)
Subject Code:	1ET1060608
Pre-requisite:	A good fundamental backup of knowledge of Health & Safety issues in Industries

Course Objective:

1. To create proper understanding of Environmental Health & Safety.
2. To provide information about occupational health related problems.
3. To create proper understanding of Personal protective equipments and consequences of fire hazard.
4. To provide information about different methods of Accident prevention.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
03	00	02	04	70	30	30	20	150

Subject Contents			
Sr. No	Topic	Total Hours	Weightage (%)
1	<u>General Introduction:</u> The importance of health and safety, what accidents and work-related ill-health are, and why they occur. • Why the welfare of people at work is important. • The approximate annual number of reported work related deaths, and injuries, which occur to people at work in India and the approximate costs involved. • The meaning of: Hazard, Risk, Safe, Accident, Dangerous occurrence.	06	16%
2	<u>Occupational Health:</u> • The causes of work related ill health and the steps to control and prevent it. • The appropriate measures to control the hazards associated with work related ill health including:- (a) Noise (b) Repetitive strain injury(RSI) (c) Display screen equipment (DSE) (d) Viral and bacterial infections e.g. legionnaires disease, hepatitis B. (e) Stress.	12	28%

3	<u>Personal Protective Equipments (PPE):</u> Outcomes : - The different types of PPE and the hazards against which they provide protection. Fire Outcomes: - The dangers associated with fire. - The “fire triangle” and the three conditions required for fire to start and continue to burn. - The need for provision of adequate methods of raising the alarm, and routes of escape in the event of fire.	12	28%
4	<u>Principles of Accidents Prevention :</u> Definition : - Incident, accident, injury, dangerous occurrences, unsafe acts, unsafe conditions, hazards, error, oversight, mistakes, etc. Accident Prevention : - Theories / Models of accident occurrences. - Principles of accident prevention. - Accident and Financial implications. - Hazard identification and analysis. - Fault tree analysis. - Event tree analysis. - Failure modes and effects analysis. - HAZOP studies - Job safety analysis - examples - Plant safety inspection - objectives and types check procedure inspection report.	12	28%

Course Outcome:

After learning the course the students should be able to:

1. Proper understanding of Health & Safety.
2. Knowledge about occupational health related problems.
3. Proper understanding of PPE and fire hazard.
4. Knowledge of different methods of Accident prevention.

List of Reference Books:

1. R.K.Jain and Sunil S.Rao , Industrial Safety , Health and Environment Management Systems, Khanna publishers , New Delhi (2006).
2. Frank P Lees – Loss of prevention in Process Industries, Vol. 1 and 2, Butterworth- Heinemann Ltd., London (1991).
3. Slote.L, Handbook of Occupational Safety and Health, John Willey and Sons, Newyork
4. Mt Calf & Eddy, Waste Water Engineering