Diploma in Fire Technology & Industrial Safety Management
Second Semester

(I)- SKILL SUBJECT:- OCCUPATIONAL HEALTH AND SAFETY					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory	**OCCUPATIONAL HAZARDS AND THERE SAFETY**	(1) Introduction, (2) Occupational Health & Risks, (3) Common Occupational Diseases, (4) Prevention of Diseases	Identify occupational hazard associated with different dangerous chemicals.	10	3
Theory	**OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM**	(1) Introduction, (2) OH & S Policy, (3) Planning, (4) Implementation and Operation, (5) OHSAS Standard	Apply provisions related to safety and the policies	10	
Theory	**OCCUPATIONAL HEALTH & INDUSTRIAL HYGIENE**	(1) Introduction, (2) Hazard Identification, (3) Medical Surveillance, (4) Medical Facilities, (5) Industrial Quality of Working Life and Quality Circles	Identify occupational hazard associated with different dangerous chemicals, dust, gases, mist etc.to plan and execute rescue operations in these cases	10	
Theory	**IMPORTANT INGREDIENTS OF HEALTH**	(1) Introduction, (2) Importance of Food, (3) Essential Constituents of Food, (4) Principal Systems of Body, (5) Importance of Exercise, (6) Tips for Happiness	Identify occupational hazard associated with different Constituents of food.	05	
Theory	**SAFETY, HEALTH & ENVIRONMENTAL MANAGEMENT SYSTEM**	(1) Need for Integration of Safety, Health & Environment, (2) Ensuring Participation of Employees in Developing SHE Policy, (3) Important Points for Consideration for Safety, (4) General Instruction for Safety, (5) Creating Awareness about process Safety	Select and apply instruction of safety, health and environment in plant.	10	

Suggested Books:

1. Industrial Safety Management – M.K. Tarafdar, K.J. Tarafdar

2. Industrial Safety, Health and Environment Management System – R.K. Jain, Sunil S. Rao

(II)- SKILL SUBJECT:- SAFETY CONTROL PROCEDURE & LEGISLATION					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory	**OVERVIEW OF SAFETY**	(1) Fundamental of Safety, (2) Principle for Accident Prevention, (3) Management Responsibility in Safety, (4) Classification of Accidents, (5) Causes of Accident	Analyze the concept of accident caused and prevention, accident investigation, analysis and safety management	10	3
Theory	**MOTIVATION TO SAFETY - I**	(1) Safety Organization, (2) Safety Policy, (3) Safety Committee	Plant and execute Safety department	05	
Theory	**MOTIVATION TO SAFETY - II**	(1) Safety Programme, (2) Safety Education & Training, (3) Promoting Employee's Participation	Proper Training and Improve in safety programme.	10	
Theory	**LEGISLATIVE ASPECTS OF SAFETY**	(1) Factory Act 1948, (2) Indian Boiler Act 1923, (3) Explosives Act 1884, (4) Petroleum Act 1934, (5) Electricity Act 2003.	Select & apply Provisions related to safety, health and welfare in respect of factory Act-1948	10	
Theory	**LABOR WELFARE LEGISLATIONS**	(1) Workman Compensation act– 1923, (2) Employees State Insurance Act - 1948, (3) Fatal Accident Act - 1855, (4) Maternity Benefit Act – 1961	-do-	10	

Suggested Books:

1. Industrial Safety Management – M.K. Tarafdar, K.J. Tarafdar

2. Industrial Safety, Health and Environment Management System – R.K. Jain, Sunil S. Rao

(III)- **SKILL SUBJECT:- SAFETY ENGINEERING**					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory	**SAFETY ANALYSIS**	:(1) Hazard Evaluation Techniques, (2) Hazop Study, (3) Fault tree analysis, (4) Event tree Analysis, (5) Relative ranking techniques.	Analysis hazard evaluation and risk analysis exercise.	5	3
Theory Demonstration & Practical	**ELECTRICAL SAFETY**	(1) Safety in use of Electricity, (2) Dangers from Electricity, (3) Overload and Short circuit protection, (4) Earth fault protection (5) Static electricity, (6) Points to be checked at the electrical system.	*Electrical Safety Training*. Identify the hazards associated with *electricity*: shock and fire. Explain how *electricity* works regarding hazards on the job. Describe basic *safety* controls and practices at work. Identify and explain how to respond to *electrical* emergencies.	10	
Theory	**WORKPLACE SAFETY**	(1) Illumination, (2) Ventilation & Heat Control, (3) Noise Control, (4) Vibration	Identify the importance of lighting, ventilation, work related stress and its measurement.	10	
Theory Demonstration & Practical	**PERSONAL SAFETY**	(1) Introduction, (2) PPE (Personal Protective Equipment, (3) Protective Clothing	Select and use PPE, its care and maintenance.	10	
Theory Demonstration & Practical	**WORKSHOP SAFETY**	(1) Hand tools and power tools, (2) Safety while using Grinding stone, (3) Welding and gas cutting Safety, (4) Lubrication Safety, (5) Housekeeping – Need, Importance and Methods	-do-	10	

Suggested Books:

1. Industrial Safety Management – M.K. Tarafdar, K.J. Tarafdar

2. Industrial Safety, Health and Environment Management System – R.K. Jain, Sunil S. Rao

(IV)- **SKILL SUBJECT:- SAFETY MANAGEMENT**					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory Demonstration Practical	**Plant Safety Inspection**	(1) Introduction, (2) Types of Safety Inspection. (3) Safety Audit, (4) Plant safety Inspection	*Safety training* programmes, and improved enforcement of in-house *safety* rules.	05	3
Theory Demonstration Practical	**Safety Performance Measurement**	(1) Frequency Rate and Severity Rate. (2) Incidence Rate. (3) Safe T Score, (4) Safety and Government Role	Effective safety management requires a thorough understanding and sound management of your system and processes.	10	
Theory	**Work Permit**	(1) Introduction, (2) Significance of Safety documentation and work permit, (3) Limited Work Permit (LWP), (4) Safety Tag System.	Work Permit System are to exercise control over the maintenance, repair and construction activities by assigning responsibilities, ensuring clear cut communication between interested functions & safety considerations to the job, its hazards & the precautions required.	15	
Theory	**EMERGENCY RESPONSE PLAN**	(1) On site Emergency Management Plan, (2) Off site Emergency Management Plan	*Emergency Management Program* is designed to: Describe the four phases of *emergency management* and the role each of them plays in managing and mitigating a *disaster*. Have the graduate be an affective member of the incident command team at a *disaster* or crisis.	05	

Theory	**RISK ANALYSIS AND RISK MANAGEMENT**	(1) Risk analysis, (2) Risk Assessment Concepts, (3) Identification of Risks, (4) Hazard control, (5) Process Safety Management	Develop a basic understanding of how to conduct and evaluate an uncertainty *analysis* for a *risk assessment*. *Risk analysis* is broadly defined to include *risk assessment*,	10	
Suggested Books: **1. Industrial Safety Management – M.K. Tarafdar, K.J. Tarafdar** **2. Industrial Safety, Health and Environment Management System – R.K. Jain, Sunil S. Rao**					