राजस्थान आई.एल.डी. कौशल विश्वविद्यालय
RAJASTHAN ILD SKILLS UNIVERSITY

FACULTY OF SECURITY AND SURVEILLANCE

NSQF LEVEL SCHEME

SECTOR : FIRE AND SAFETY

B. VOC. IN FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT

REGULATION

NSFQ LEVEL 7

REGULATION

SEMESTER 3RD

Semester Wise-Syllabus

Skill Components
(Theory & Practical)

Course Name : B. Voc. In Fire Technology and Industrial Safety Management									
Semester III									
Skill Component									
			Credits				**Eose (Hrs.)**		
Code	**Subject Type**	**Subject**	**Theory**	**Practical**	**Self/Industry/Project**	**Total Credits**	**T**	**P**	**S**
Skill Component (Location : Institute)									
	SC	Rescue Vehicles and Equipment's	2	1	-	3	3	4	-
	SC	Construction Industrial Safety	2	1	-	3	3	4	-
	SC	Safety Responsibility	1	3	-	4	3	4	-
	SC	Chemical and Environmental Hazards and Controlling Pollution	1	1	-	2	3	4	-
(OJT)/Qualification Packs) Location: Industry Partner)									
Internship/OJT/ Drill Practical			**0**	**0**	**6**	6	0	0	0
TOTAL			**6**	**6**	**6**	18	0	0	0

Skill Subjects

Skill Component -I : Rescue Vehicles and Equipment's					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory	**Fire-Fighting Tender**	Introduction of Subject, Construction and layout details of various types of fire fighting and rescue vehicles, Ambulance.	Familiar with Fire Fighting Equipments and Vehicles	10	3
Theory	**Specification of Tenders**	I.S. Specifications for CFT, Emergency tender, Water tender type A,B & X, Foam tender, Multipurpose fire tender, Hose laying lorry, Break down van, Fire boats, Trailer pump, Portable pump, CO_2 Tender, DCP Tender etc..	Use and Care maintenance of Fire Fighting Tenders Like Water Tender, Foam Tender, Multiple Tender Crash Fire Tenders Etc.	10	
Theory	**B. A. Set**	Types of B.A. sets, Atmospheric and self contained, Theory of respiration, Essential feature of B. A. sets, Sequence of wearing, operational use, functional use, recharging, testing maintenance, advantages and disadvantages of different sets, Working duration and principle of calculating working duration, Donning Process, Pre-Entry Test, Duties of officer in charge and BA set Operatives.	Use and importance of Different types of B.A. Set and its Pre-test Methods before using B.A. Sets.	15	
Theory	**Small Gears**	Introduction to small gears, lighting equipments and other tools used in fire service, its use, care and maintenance, Special gears – Study of hydraulic rescue equipments, cutting gears and other rescue apparatus, Lifting equipments – Mechanical, hydraulic, pneumatic jacks, pulley	Define and Familiarization of Small Gears use in fire fighting and rescue purpose and there various types.	10	

		and blocks, air bags, Electric power tools and oxy-propane cutting set, Study of Indian specification of Fireman axe and fire hook.			

Skill Component -II :- Construction Industrial Safety					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory Demonstration Practical	**Safe Work Place & Scaffolding**	Safe means of access, Fall Protection, Safety while working on Roofs, PFASS (Personal Fall Arrest Safety System), Parts of Scaffold, Ladder Access, Working on Scaffold, Basic requirements of Scaffolding, Erection of Scaffolding Scaffolding Safety Scaffold Inspection	What is Falling hazards, Safety precautions and equipments using during work at height. Inspection and audit of scaffold.	10	3
Theory Demonstration Practical	**Safe Material Handling Operations**	Safe Handling of materials, Major injuries, Lifting appliances, Safe operations of Cranes, Pilings, Rigs, Side Booms, General Safety Requirements for Lifting operations.	Material Handling and use of equipments during Material handling. Use of Various lifting equipments in plant.	15	
Theory Demonstration Practical	**Major activities of Construction Project**	Definitions- Excavation Hazards & precautions, Methods of Excavation, Welding and Cutting Operations, Types of Welding, Hazards and precautions for welding, Confined Space entry precautions, Painting operations - Hazards and precautions, Sand Blasting - Hazards and precautions, Demolition.	Demonstration and Visit on Construction Site. Explanation of Excavation and confined space.	10	
Theory Demonstration Practical	**Personal Protective Equipment (PPE)**	Need and importance of PPE, Employer's responsibilities, Employees responsibilities, Types of PPE, Head Protection, Eye and Face Protection, Ear Protection, Hand Protection, Leg Protection, Skin Protection spiratory protection.	Define Personal Protective equipments and its types. Use and importance of PPEs at work place.	10	
Theory Demonstration Practical	**Hand Tools and Portable Power Tools**	Workshop Safety, Tools, Types of Tools- Hand Tools and Power Tools, Commandments for personnel using hand tools,	Define workshop and its work activity. Hazards during using tools. Introduce to safety precaution at use of	15	

		Portable Electric Power Tools, Pneumatic Tools, Lone Working	tools.		
Theory Demonstration Practical	**Vehicles, Equipment and Machinery**	Workplace Transport, Hazards, Pedestrian routes, Vehicular routes, Reversing operations (Safety guidelines), Instructions for drivers, Hand held Power circular Saws, Chain Saws, Abrasive Wheels	Introduce to various types of Vehicle use in plant for working activity. Safety guidelines for driver and operator.	10	

Skill Component -III : Fire Fighting Process					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory Demonstration Practical	**Safety Philosophy**	Introduction, Objectives, Basic Safety Programming, Safety Department	Introduction of safety philosophy and safety programming of safety department in the plant.	05	3
Theory Demonstration Practical	**Safety Responsibility**	Management Responsibility for Safety, Safeguarding Public, General Safety Rules, Responsibilities of Government, Responsibilities of Social Organizations, Responsibilities of Public Authorities.	About Responsibility of Various departments works for safety field.	05	
Theory Demonstration Practical	**Legislation of Safety**	Safety Activities of ILO, Maintenance and Safety, Factories Act – 1948, Inspection and certifying.	Terms and conditions of Safety as view of activities, maintenance, employees health and safety.	10	
Theory Demonstration Practical	**Safety Council**	Introduction of National Safety Council, Formation, Role and Responsibility.	Introduction about Safety Council.	10	
Theory Demonstration Practical	**Safety Management policy**	Safety Policy of Management in Industry, Employees Responsibility towards Safety, Joint Responsibility for Safety.	Safety Management Policy and responsibility of Employees for Safe working Condition.	10	

Skill Component -IV :- Chemical and Environmental Hazards and Controlling Pollution					
Component	**Unit (Module)**	**Subunit (Session)**	**Learning objective**	**Duration in hour**	**Credit**
Theory Demonstration Practical	**Environmental Hazards**	Introduction to Environmental Hazards, Terms and Definitions, Pollution, Environment Pollutant, Energy, Man and Environment, Law of Conservation of Energy, Thermodynamics.	Familiarization to Environment. What is environment pollution and its causes.	10	3
Theory Demonstration Practical	**Environmental policy & laws**	vironmental policy definition, Environmental policy issues & planning, Water & Air acts and rules, Environmental Protection act –1986, Important Definition-Environmental Pollution, Hazardous Substance, Occupier, General power of Central government, Prevention Control abatement of Environmental pollutant in excess of standard, Miscellaneous Provisions of act, Coastal zone development	Introduction about environmental policy and its issues. Learn about rules and regulation related to environmental protection.	15	
Theory Demonstration Practical	**Chemical Hazards Exposures**	Multiple effects of Chemicals, Industrial Toxicology, Toxic Chemicals and its harmful effects on Humans, Harmful effects of Chemicals, Safety Analysis, Control Measures, Management of Workplace Exposure, Plant Operations, Dust Explosions.	Visit chemical plant. Learn about hazards and safety procedures use in chemical plant.	10	
Theory Demonstration Practical	**Environmental Regulation**	Approaches to environmental Regulation, Concept of Industrial Ecology, Environmental Management System, Compliance to Legislations, Environmental Standards, ISO 14000, and International Environmental guiding Principles.	Introduce to Environmental and industrial concept like ecology system etc. and ISO 1400 and its guideline.	10	
Theory Demonstration Practical	**Environment Management**	Environment Management, Integrated approach in managing Safety & Environment, Development process towards sustainability, Management and waste disposal system, Hazardous Waste Management.	Familiarization to environmental Management and Relation between environment and Safety.	15	

Objective:- To Train an individual in handling Fire Safety Equipment and Enable him/her to function as a Fire Technician.

Ref. Books:-

Agni Suraksha - Mr. N. K. Verma
Industrial safety health & Environment Management System - Mr. R.K Jain
Industrial safety management and Health - Mr. M. K. Tarafdar
Industrial Safety - Mr. Misti