

SWAMI VIVEKANAND UNIVERSITY, SIRONJA SAGAR (M.P.)



SYLLABUS

For

PG DIPLOMA IN FIRE SAFETY & DISASTER MANAGEMENT

Course Code: PGDFSDM

Department of Fire Safety & Disaster Management

Duration of Course : 1 Year

Examination Mode : Yearly

Examination System : Non-Grading

Swami Vivekanand University, Sironja Sagar (M.P.)
2015-2016



Faculty :Science

Department :Fire Safety & Disaster Management

Session: 2015-16

Course Name: PG Diploma in Fire Safety & Disaster Management

Course Code: PGDFSMDM

Year (One)

Course Code	Title of the Paper	Distribution Of Marks					
		Theory		Practical		Total	Marks Obtained
		Max	Min	Max	Min		
PGDFSMDM-101	FUNDAMENTALS OF FIRE SCIENCE	100	36	-	-	100	
PGDFSMDM-102	INDUSTRIAL SAFETY MANAGEMENT	100	36	-	-	100	
PGDFSMDM-103	FIRE PROTECTION, EQUIPMENTS APPLIANCES	100	36	-	-	100	
PGDFSMDM-104	INDUSTRIAL RISK HAZARD MANAGEMENT	100	36	-	-	100	
PGDFSMDM-105	EMERGENCY MANAGEMENT	100	36	-	-	100	
PGDFSMDM-106	DISASTER MANAGEMENT	100	36	-	-	100	
PGDFSMDM-107	OCCUPATIONAL HEALTH, FIRST AID, CASUALTY MANAGEMENT	100	36	-	-	100	
PGDFSMDM-108	GENERAL MANAGEMENT	100	36	-	-	100	
Grand Total		800				800	



FUNDAMENTALS OF FIRE SCIENCE
Course Code :PGDFSDM(101)

UNIT- I

Marks: 20

Combustible Matter, Flammable/Combustible Liquids, Classification Of Petrochemicals Liquids As Per NFPA, Combustible Gases.

UNIT-

Marks: 20

Combustion and It's Types ,Oxygen Content in Air by Weight And Volume, Combustion of Solid ,Liquid and Gases Exothermic and Endothermic Reactions, Jet and Flash, Flames and its types, Premixed ,Diffusion, Turbulent Stationary and Propagating Flames Burning Velocity ,Flash Point, Fire Point, Transmission of Heat by Conduction Convection and Radiation.

UNIT- III

Marks: 20

FIRE: Definition of Fire, Fire Triangle, Tetrahedron of Fire, Classification of fires, Types of Extinguishing Media of Agent, Principles of Fire Extinguishing Methods Cooling, Starvation ,Smothering(Blanketing),Retarding Chain Reaction.

FIRE EXTINGUISHING MEDIA OR AGENTS:

Extinguishing Property of Water, Characteristics of Ideal Liquid Extinguishing Agent, Various Forms of Water Like Solid Stream ,Fog, Spray.

UNIT- IV

Marks: 20

Types of Foam Concentrate, Protein, AFFF, Fluoro Protein, Alcohol Types, Low, Medium and High Expansion Foam, Physical and Chemical Properties of Foam.

2. DRY CHEMICAL POWDER:

Various Types of Dry Chemical Powders and Their Uses, Carbon Dioxide, Halons, FM200 and Similar Extinguishing, Agents.

UNIT-V

Marks: 20

Sprinklers Automatic Alarms Water Tenders, Fire Extinguishers, Fire Prevention And Inspection Procedures , Fire Protection Law as/Bye Laws .

Text Books

1. Carl Goodson, "Essentials of fire fighting" Fire protection publications;5th edition
2. Pann Well, "Fire engineering's skill drills for Fire Fighter", Pann Well; 1st & 2nd edition.



INDUSTRIAL SAFETY MANAGEMENT
Course Code : PGDFSDM (102)

UNIT- I

Marks: 20

Henrichs Axioms Of Industrial Safety ,Concepts Of Safety, Organization For Safety, Organization, Definition, Need & Principles Organizing For Health ,And ,Environmental, Activities, Organization Structure, Function & Responsibilities

UNIT- II

Marks: 20

Directing For Safety, Direction, Definition, Process, Principles and Techniques Leadership, Role, Function And, Attributes Of A Leader.

UNIT- III

Marks: 20

Safety Management System, Objectives of Health, Safety and Environment Policy, Responsibility for Implementation of HSE Policy

UNIT- IV

Marks: 20

Role of Occupier and Factory Manager, Factory Safety Committee, Structure and Functions and Working Tenure Details Etc

UNIT- V

Marks: 20

ACCIDENT PREVENTION:

Definition : Incident, Accident, Injury , Dangerous occurrence ,Unsafe Act, Unsafe, Conditions, Hazards, Error, Oversight, Mistake ,Near Miss ,Electricity & Hazards ,Of Electricity ,Explosives And ,Transportation Safety.

Text Books -

- 1.Fundamentals of Industrial safety & health byK.U. Mistry.
- 2.Factories Act 1948



FIRE PROTECTION EQUIPMENTS APPLIANCES

Course Code : PGDFSDM (103)

UNIT- I

Marks: 20

Properties Of Hazardous Chemicals & Handling Procedure , Fixed Fire Fighting Installation.

UNIT- II

Marks: 20

Fire Hose and Hose Fittings, Hydrants And Water Supply.

UNIT- III

Marks: 20

Fire Protection Hydraulics, Pumps, Abstracts From Factories Act,1948, Fire Protection Law Etc.

UNIT- IV

Marks: 20

Hazards In Special Area And Fire Protection, Turn Table Ladder, Fire Investigation And Plan Reading.

UNIT- V

Marks: 20

Small Gears, Special Appliance, Transportation And Storage Of Hazardous Goods.

Text Books -

1. Carl Goodson, "Essentials of fire fighting" Fire protection publications; 5th edition
2. Pann Well, "Fire engineering's skill drills for Fire Fighter", Pann Well; 1st & 2nd edition.



INDUSTRIAL RISK HAZARD MANAGEMENT
Course Code :PGDFSDM(104)

UNIT- I

Marks: 20

Industrial Risk Management Hazard Assessment and Risk Control System Using Risk Matrix.

UNIT- II

Marks: 20

Hazard Reporting System.

Job Hazard Analysis: Working Examples Of Chemical Industries, Refineries & Petrochemical Industries.

UNIT- III

Marks: 20

Occupational Health & Diseases, and Hygiene, Site Safety Survey

UNIT- IV

Marks: 20

Ergonomics and Job Design, Accident and Incident.

UNIT- V

Marks: 20

Investigation, Reporting, Analysis And Record Keeping.

Text Books -

- 1.AIChE/CCPS, Guidelines for Hazard Evaluation Procedures second edition. Centre for Chemical Process Safety, American Institute of Chemical Engineers, New York,1992.
- 2.AIChE/CCPS, Guide lines for Chemical Process Quantitative Risk Analysis second edition. Centre for Chemical Process Safety, American Institute of Chemical Engineers,NewYork,2000.
- 3.LeesF.P.LossPreventionintheProcessIndustriessecondedition. Butterworth's,London,1996



EMERGENCY MANAGEMENT
Course Code : PGDFSDM (105)

UNIT- I **Marks: 20**

Emergency Management and Statutory Requirements, Planning For Handling Industrial Emergencies.

UNIT- II **Marks: 20**

Classification of Petroleum and Properties, General Properties of Chemicals.

UNIT- III **Marks: 20**

Hazardous Chemicals and Management of Occupational Health, Communication during Emergency.

UNIT- IV **Marks: 20**

Entry Search and Rescue Procedure, Onsite Emergency Palm.

UNIT- V **Marks: 20**

OFFSITE EMERGENCY PLAN, SPECIAL Services.

Text Books –

1. ILO, Geneva: Major Hazard Control - a Practical Manual.
2. UNEP, Paris: APELL - A Process for responding to technological accidents, A Handbook, Industry & Environment Office. 1998
3. Accident Prevention Manual for Business and Industry, Vol. I - National Safety Council, USA.
4. Oil spill Response : The National Contingency Plan – Institute of Petroleum, London
5. Petak, W.J and Atkinson, A.A.: Natural Hazard Risk Assessment and Public Policy : Anticipating the Unexpected



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DISASTER MANAGEMENT Course Code : PGDFSDM (106)

UNIT- I 20

Marks:

Disaster & Types of Disaster, Disaster Management Cycle, Hazard Identification, and Vulnerability Analysis.

UNIT- II

Marks: 20

Disaster Management in Industry, Consequence of Disaster, Tsunami.

UNIT- III

Marks: 20

Urbanization and Disaster, Role of UN, Land Degradation.

UNIT- IV 20

Marks:

Anthropogenic Factors, Volcanic Eruptions, Disaster Management Bill-2005, Marine Pollution.

UNIT- V 20

Marks:

Sources & Effects Of Marine Pollution, El Nino & Natural Disaster, Environmental Hazards & Disaster, Undro's Role In Disaster Relief & Mgmt, Stages Of Restoration Of Normalcy.

Text Books

1. ILO, Geneva: Major Hazard Control - a Practical Manual.
2. UNEP, Paris: APELL - A Process for responding to technological accidents, A Handbook, Industry & Environment Office. 1998
3. Accident Prevention Manual for Business and Industry, Vol. I - National Safety Council, USA.
4. Oil spill Response : The National Contingency Plan - Institute of Petroleum, London
5. Petak, W.J and Atkinson, A.A.: Natural Hazard Risk Assessment and Public Policy : Anticipating the Unexpected



**OCCUPATIONAL HEALTH, FIRST AID
CASUALTY MANAGEMENT
Course Code : PGDFSDM(107)**

UNIT- I

Marks: 20

Introduction to Plant, Basic of Fire Protection, Design Criteria and Fire Protection Facilities.

UNIT- II

Marks: 20

Definition of Occupational Health & Safety.

UNIT- III

Marks: 20

The practice of First Aid, Control of bleeding, Burns and Scalds, Heart Attack.

UNIT- IV

Marks: 20

Disorder of Circulation, Dressing & Bandages, Handling & transport of injured.

UNIT- V

Marks: 20

Emergency Action Plan, Line Diagram of Emergency Action Plan, Drawings.

Text Books -

1. Encyclopaedia of Occupational Health and Safety: Vol I & II - ILO
2. Industrial Environment and its evaluation and control : NIOS
3. D Hunter, Diseases of Occupation.
4. M.K. Poltev, Occupational Health & Safety in manufacturing industries.
5. Clayton & Clayton, Patty's Industrial Hygiene and Toxicology



GENERAL MANAGEMENT
Course Code : PGDFSDM(108)

UNIT- I

Marks: 20

Administration of Fire Safety Department, Discipline

UNIT- II

Marks: 20

Management of Specialized Emergencies

UNIT- III

Marks: 20

Fire Salvage.

UNIT- IV

Marks: 20

Human Behavior and Organization Management

UNIT- V

Marks: 20

Preparation of Data, Tabulation of Strategic Information for Preparing MIS Data.

Text Books

General management. Kobus Lazenby ... Publisher: Pretoria : Van Schaik, 2015. ...; authors, N. Achadinha.