

**POST GRADUATE DIPLOMA (SAFETY MANAGEMENT- FIRE TECHNOLOGY) – PART ONE**

**Optional Early Certificate: - N/A**

**Syllabus:-**

Sr. No.	Module Code	Name of Module	Credits	Total Marks
1	PDSF111	Safety Management Systems	5	100
2	PDSF112	Fundamental of Fire Engineering Science	4	100
3	PDSF113	Fire Technology and Design	5	100
4	PDSF114	Fundamental of Information Technology	4	100
5	PDSF115	Occupational Health and Hazards	4	100

**Module Name: SAFETY MANAGEMENT SYSTEMS**

1. Introduction
2. Safety Inspection
3. Risk Management
4. Safety Auditing
5. Safety Management System
6. The Elements of a Safety Management System
7. Case Studies Using the D&S Audit Method
8. Case Studies Using the MISHA Method

**Module Name: FUNDAMENTAL OF FIRE ENGINEERING SCIENCE**

**Unit I**

History of fire service, Basic physics, Units, Guidelines for writing the units, Force, resultant force, Laws of force, Laws of motion, Mass and weight, work, power, energy, Law of conservation of energy, Mechanics – rest and motion, Distance and displacement, Speed and velocity, Acceleration, retardation, Acceleration due to gravity, Newton laws of motion, Machines and engines, Efficiency, Friction

**Unit II**

Basic Chemistry and physics of fire, Atomic structure, Elements, compounds, Pure substance and mixture, Physical and chemical changes, Condition for the changes, Energy changes, Effects of heat on matter, Combustion, Temperature, Specific heat capacity, Catalyst, Neutralization, Sublimation, Heat of decomposing, Chemical reaction, Exothermic reaction and endothermic reaction, Transmission of heat, Flash and fire point, Ignition temperature, Flammables and combustible chemicals, Spontaneous combustion, Triangle of combustion, Tetrahedron fire, Spread of fire.

#### **Unit III**

Classification of fire, General Causes of fire, Detection of fire, Extinguishing methods, First aid fire fighting equipment's, Fire bucket, Fire beater, hose reel hose, Portable extinguisher, depends on weight, depends on operating method, depends on content, Depends on position of nozzle, Construction, Operation, Maintenance, Refilling

#### **Unit IV**

Fixed fire fighting installations using water, Hydrant or fire water system, Classification of hydrant system, Sprinkling system, Major foam pourer system, Steam drenching system, Emulsification, Special fires and fire fighting, Air craft fire, Ships fire.

### **Module Name: FIRE TECHNOLOGY AND DESIGN**

#### **Unit-I**

Classification of fire, Portable fire extinguishers, Pumps and primers, Foam and foam making equipment's.

#### **Unit-II**

Hose and hose fittings, Water relay systems, Breathing apparatus, Small gears

#### **Unit-III**

Fire protective clothing, Ladders, Ropes and lines, bends & hitches, Fire prevention

#### **Unit-IV**

Special appliances, Fire fighting codes and standards, Electrical fire hazards, Structures under fire

### **Module Name: FUNDAMENTAL OF INFORMATION TECHNOLOGY**

- 1. Information Technology (IT) & Society:** Information, information processing & Information Technology. Evolution of IT. IT business and entrepreneurship, education, communication, entertainment, healthcare, agriculture, and its contribution to India's development. Government Initiatives: Particular initiatives – AADHAR, E-Panchayat, National Knowledge Network.
- 2. Information Handling:** Devices assisting IT with special focus on Computers and Mobiles. Components of computer: Hardware and Software. Connecting and Configuring External Devices – like Printer, scanner, projectors etc. Hardware Connectivity Options – Ports, Wi-Fi, Bluetooth etc.
- 3. Document Preparation & Presentation:** Document preparation and presentations using tables, pictures, graphs, animations, audio and video contents. Use of shortcut keys. Ways to make effective presentations. Use of references and citations. Document format and their conversion.

- 4. Internet, Security & Legal Aspects:** WWW, Basics of webpage, Social network sites. Effective Searching. Popular Online Applications - e-ticketing, e-payment. Email & internet Forums. Issues – virus, malware, spam, phishing, copyright, plagiarism, cybercrime; Protective measures: password, https; Cyber Laws – IT Act. Open source philosophy. Licensing and domain of open source technology. Open source software development. Commonly used open source technologies.
- 5. Library and Information Resource Centers:** E-Information Resources: Concept and types (e-books, e-journals, on-line databases: subscribed, free and open access databases). Institutional Repository: concepts, components. Library Systems – Introduction to library, Library and Information sciences (User and reference services , Current Awareness Service, Selective Dissemination of Information, Online Information Bulletin Board), Call Number (Class Number, Book Number, Location Number). Arrangement of Information Resources: Call Number (Class Number, Book Number, Location Number), On-line Public Access Catalogue (Data Fields and elements, search options, Reservation facilities). Bibliographic Standards for Citation – Modern Language Association Style, American Psychology Association style. Article Reference, Book Reference, Conference Reference, Web Resource Reference.

**Module Name:** OCCUPATIONAL HEALTH AND HAZARDS

1. Introduction of Occupational Health & Hazards
2. Work Environment
3. Occupational and Other Work – Related Diseases
4. Early Detection of Occupational Diseases
5. Occupational Ergonomics
6. Stress and Adverse Psychological Factors at Work
7. Occupational Safety and Accident Prevention
8. First Aid and its Practice
9. Epidemiology and Biostatistics in Occupational Health
10. Record Keeping
11. Occupational Health Hazards in Mining
12. Occupational Health for Women and Children
13. Occupational Health and Safety: The Road Ahead
14. Occupational Health and Safety