

Syllabus

Diploma in Fire & Safety Management

Diploma in Fire & Safety Management Programme Structure

COURSE PERIOD: 1 Year

TOTAL SEMESTER: 2

SEMESTER I

Sr. No	Course Type	Course Code	Course Name	Hours Per Week			credit	Max Marks		Total
				L	T	P		T	P	
1	MAJOR	DFS101	FUNDAMENTALS OF FIRE ENGINEERING SCIENCE	2	0	2	4	50	50	100
2	MAJOR	DFS102	FIRE CONTROL TECHNOLOGY	2	0	2	4	50	50	100
3	MAJOR	DFS103	PRINCIPLES OF INDUSTRIAL SAFETY AND ACCIDENT PREVENTION	2	0	2	4	50	50	100
4	MAJOR	DFS104	LEADERSHIP, COMMUNICATION & SOFT SKILLS	2	0	2	4	50	50	100
5	MAJOR	DFS105	PRACTICAL	0	0	4	4	0	100	100
Total				8	0	12	20	200	300	500



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SEMESTER II

Sr. No	Course Type	Course Code	Course Name	Hours Per Week			credit	Max Marks		Total
				L	T	P		T	P	
1	MAJOR	DFS201	RISK MANAGEMENT AND HAZARD CONTROL SYSTEM	2	0	2	4	50	50	100
2	MAJOR	DFS202	HEALTH, SAFETY, ENVIRONMENTAL ENGINEERING AND CONSTRUCTION SAFETY	2	0	2	4	50	50	100
3	MAJOR	DFS203	INDUSTRIAL SAFETY	2	0	2	4	50	50	100
4	MAJOR	DFS204	CONSTRUCTION INDUSTRY SAFETY	2	0	2	4	50	50	100
5	MAJOR	DFS205	FIRE ENGINEERING SCIENCE -I	2	0	2	4	50	50	100
6	MAJOR	DFS206	EMERGENCY PLANING & FIRST AID	2		2	4	50	50	100
Total				12	0	12	24	300	300	600

DETAILED SYLLABUS

SEMESTER I

DFS101: FUNDAMENTALS OF FIRE ENGINEERING SCIENCE

Total Credit : 4

Unit 1

- History of fire service
- Basic physics
- Units

Unit 2

- Guidelines for writing the units
- Force, resultant force
- Laws of force
- Laws of motion

Unit 3

- Mass and weight, work, power, energy
- Law of conservation of energy

Unit 4

- Mechanics – rest and motion
- Distance and displacement
- Speed and velocity

Unit 5

- Acceleration, retardation
- Acceleration due to gravity
- Newton laws of motion

Unit 6

- Machines and engines
- Efficiency
- Friction

Unit 7

- **Basic Chemistry and physics of fire**
- Atomic structure
- Elements, compounds

Unit 8

- Pure substance and mixture
- Physical and chemical changes
- Condition for the changes

Unit 9

- Energy changes
- Effects of heat on matter
- Combustion
- Temperature
- Specific heat capacity



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Unit 10

- Catalyst
- Neutralization
- Sublimation
- Heat of decomposing
- Chemical reaction
- Exothermic reaction and endothermic reaction

Unit 11

- Transmission of heat
- Flash and fire point
- Ignition temperature
- Flammables and combustible chemicals

Unit 12

- Spontaneous combustion
- Triangle of combustion



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- Tetrahedron fire
- Spread of fire

Unit 13

- Classification of fire
- General Causes of fire
- Detection of fire
- Extinguishing methods
- First aid fire fighting equipments

Unit 14

- Fire bucket, Fire beater, hose real hose
- Portable extinguisher
- depends on weight
- depends on operating method
- depends on content
- depends on position of nozzle
- Construction
- Operation
- Maintenance
- refilling

Unit 15

- 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

Unit 16

- Fixed fire fighting installations not using water
- Complete CO₂ flooding system
- Complete DCP spraying system
- Complete Halon flooding system
- Investigation of fire
- Point, Time and cause of ignition
- Arson and detection of fires

1. Courseware to be provided by the institution
2. Reference books are enclosed in annexure 1

Recommended Books

"Principles of Fire Safety Engineering: Understanding Fire and Fire Protection" by Das a K

2."Electrical Safety Fire Safety Engineering And Safety Management" by Rao S

4."Fire Safety and Risk Management: for the NEBOSH National Certificate in Fire Safety and Risk Management" by Fire Protection Association

5."Design Fires for Use in Fire Safety Engineering" by Christopher Mayfield and Danny Hopkin

"

6."Fire Safety Engineering Design of Structures" by John A Purkiss and Long-Yuan Li

7."Risk Analysis in Building Fire Safety Engineering" by A Michael Hasofer and V R Beck

8."Manual of Fire Safety" by N Sesha Prakash

9."Marine Firefighters (Fire Fight! the Bravest)" by Meish Goldish



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Unit 1

- Hose
- Types of hose
- Characteristic
- Frictional lose
- Material used
- Cause and prevention of mildew

Unit 2

- Causes and prevention of shock
- Causes and prevention of rubber acid
- Care and maintenance
- Types of hose fittings
- Couplings
- Component parts of inter locking couplings
- Suction coupling wrenches
- Branches, nozzles and branch holders

Unit 3

- Foam making branches
- Nozzles
- Collecting head and suction hose fittings

Unit 4

- Breechings
- Adapters
- Maintenance of hose fittings

Unit 5

- Fire alarm
- Introduction of Electronics and Electricity:-
- Semi conductor Physics
- Circuit Control And Protective Devices

Unit 6

- Transistors
- Principles of fire detectors
- Parts of fire alarm unit
- Control panel

Unit 7

- Type of detectors
- Automatic fire detection
- Classification of detector
- Control and indicating equipment

Unit 8

- Trouble shooting and maintenance
- Intruder alarms

1. Courseware to be provided by the institution
2. Reference books are enclosed in annexure 1

Unit 9

- **Rope, Lines, knots and ladders**
- Introduction
- Manufacturing materials
- Types of ropes and size

Unit 10

- Cordage
- Causes of deterioration of ropes and lines
- Different type of knots
- Different type of lines

Unit 11

- Purpose of knots
- Ladders
- Introduction
- Hook ladder, escape ladder, turn table and extension ladder
- Hook ladder belts

Unit 12

- SCBA and foam making equipments
- Introduction
- Physiology of respiration

Unit 13

- Effects of respiration
- Essential fetchers of BA set
- Description and technical details
- Care and maintenance various BA sets

Unit 14

- Advantage and disadvantage of various BA set
- Foam & foam making equipments
- Definition
- Different type of foam concentrate

Unit 15

- Storage
- Characteristics
- Foam branch and its type
- Mechanical foam generator
- Pumps, primers, tenders and water relays
- Introduction, definition
- Deferent types of pumps
 - Deferent types of primers

Unit 16

- Working principle of various pumps primers
- Maintenance and trouble shooting
- Testing of pumps
- Advantages and disadvantages
- Water relay system
- Open circuit system
- Closed circuit system
- Different type of tenders and Fire alarm system
- Operation and maintenance of various tenders
- Water, foam, Co2, DCP and emergency tenders



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Recommended Books

- ***A Handbook of Fire Technology*** by R.S. Gupta
- ***NFPA Handbook***
- ***Manual of Fire Safety*** by N. Sesha Prakash
- ***Essentials of Firefighting and Fire Department Operations*** by IFSTA (International Fire Service Training Association)
- ***Handbook of Fire & Explosion Protection Engineering Principles for Oil, Gas, Chemical & Related Facilities*** by Dennis P. Nolan.
- ***Industrial Fire Control Concepts: The Practical Guide to Facility Fire Protection*** by Jeffrey Moore
- ***Principles of Fire Safety Engineering*** by Akhil Kumar Das.
- ***Fireground Strategies*** by Anthony Avillo.
- ***The Tactical Firefighter*** by Mark van der Feyst, Matt Wehrle, and Rob Wiggins

Professional organizations such as the [Institution of Fire Engineers \(INDIA\)](#) and the NFPA also offer extensive publications and training materials.

DFS103: PRINCIPLES OF INDUSTRIAL SAFETY AND ACCIDENT PREVENTION

Total Credit : 4

Unit 1

- Introduction to Safety
- Goals, Need, History of Safety.
- Importance of Industrial safety

Unit 2

- Accident Causation
- Definition
- Case study

Unit 3

- Theories and principles of accident Causation
- The effect of accident,
- Unsafe Act
- Unsafe condition,

Unit 4

- Unpredictable performance,
- Consequences of accident.
- Accident prevention programmes

Unit 5

- Cost analysis and Accident Prevention
- Direct accident,
- Indirect accident,

Unit 6

- Accident Prevention Methods
- Accident Investigation
- Accident Reporting

Unit 7

- Accident Investigation,
- Accident Investigation Report
- Promotion Role

Unit 8

Pre- accident Strategy and Health Policy

- Safety Department
- Safety Committee and Function

Unit 9

Physical hazards
Chemical hazards
Mechanical hazards

Unit 10

- Housekeeping and Importance
- Advantages of good house keeping
- Post Accident strategy

Unit 11



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- First Aid
- Fire fighting
- Accident Investigation.



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Unit 12

- Role of government, Management, workers and trade unions
- promoting safety in industry

Unit 13

- First Aid
- Introduction
- Body structure and functions

Unit 14

- Position of causality
- The unconscious casualty
- Fracture and dislocation

Unit 15

- Injuries to muscles and joints
- Resuscitation
- Bleeding

Unit 16

- Management of shock
- Burns, scalds and accidents caused by electricity
- Rescue and transport of casualty



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Recommended Books

- ***Principles of Industrial Safety Management: Understanding the Ws of Safety at Work*** by Akhil Kumar Das
- ***Fundamental Principles of Occupational Health and Safety*** (ILO)
- ***On the Practice of Safety*** by Fred A. Manuele ***Practical Techniques & Methods***
- ***Accident/Incident Prevention Techniques*** by Charles D. Reese ***Industrial Plant Safety***
- ***Core Principles and Practical Training*** by Hashem Shatnawi (eBook) ***Specialized & Broader Context***
- ***Safety Management Practices for Hazardous Materials*** by Marcel Dekker
- ***Handbook of Human Factors and Ergonomics*** (5th Edition)



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DFS104: LEADERSHIP, COMMUNICATION & SOFT SKILLS

Total Credit: 4

Unit 1

- Introduction
- Definition of leadership
- Function of leadership
- Qualities of leadership

Unit 2

- Organization:
- Definition
- Elements of good organization
- Principles of organization
- Advantages of organization

Unit 3

- Communication
- Definition
- Methods of Communication
- Barriers to Communication
- Oral Communication

Unit 4

- Speaking skills
- Listening skills
- Non verbal communication
- Interview

Unit 5

- Written communication
- Letter writing skills
- Internal Communications

Unit 6

- Formal and Informal reports
- Notice
- Agenda
- Minutes

Unit 7

- Safety communication
- Managerial communication
- Communication with employees with conducting training

Unit 8

- Emergency communication
- Meeting documentation
- Communication documents

Unit 9

Essentials of Grammar:

- Parts of Speech
- Punctuation
- Vocabulary Building
- Phonetics

Unit 10

Office Management:

- Types of Correspondence
- Receipt and Dispatch of Mail
- Filing Systems
- Classification of Mail.
- Role & Function of Correspondence
- MIS
- Managing Computer

Unit 11

Letter & Resume Writing:

- Types of Letters-Formal / Informal
- Importance and Function
- Drafting the Applications
- Elements of Structure
- Preparing the Resume
- Do's & Don'ts of Resume
- Helpful Hints

Unit 12

Group Discussion & Presentation:

- Definition
- Process
- Guidelines



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- Helpful Expressions
- Evaluation

Unit 13

Presentation Skills:

- Importance of Presentation Skills
- Capturing Data
- Voice & Picture Integration
- Guidelines to make Presentation Interesting
- Body Language
- Voice Modulation
- Audience Awareness

Unit 14

- Presentation Plan
- Visual Aid
- Forms of Layout
- Styles of Presentation.

UNIT 15

Interview Preparation:

- Types of Interview
- Preparing for the Interviews
- Attending the Interview
- Interview Process

Unit 16

- Employers Expectations
- General Etiquette
- Dressing Sense
- Postures & Gestures



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Recommended books:

Leadership & Personal Effectiveness

- The 7 Habits of Highly Effective People by Stephen R. Covey
- Humble Leadership: The Power of Relationships, Openness, and Trust by Edgar Schein & Peter Schein
- HBR's 10 Must Reads on Managing YourselfCommunication & People Skills
- How to Win Friends and Influence People by Dale Carnegie
- How to Talk to Anyone: 92 Little Tricks for Big Success in Relationships by Leil Lowndes
- We Need to Talk: How to Have Conversations That Matter by Celeste Headlee
- Speaking Up without Freaking Out by Matt Abrahams

Soft Skills & Empathy

- Compassion Inc.: Unleashing the Power of Empathy in Life and Business by Gaurav Sinha
- Tiny Humans, Big Lessons by Sue Ludwig
- HBR's 10 Must Reads on Strengthening Your Soft Skills:



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DFS105: PRACTICAL

Total Credit: 4

Unit 1

- Drills
- Squad drill
- Hose drill

Unit 2

- Knots and lines
- Hydrant drill

Unit 3

- MTU drill
- Ladder drill
- Picking up drill

Unit 4

- Practical training
- First Aid Fire Fighting Equipments



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Unit 5

- Breathing apparatus
- Hydraulic pressure testing
- Industrial exposure training

Unit 6

- Practical training
- Personal Protective equipment
- Fire alarm

Unit 7

- First aid
- Smoke chamber/confined space
- Industrial exposure training

Unit 8

Safety Precautions



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SEMESTER II

DFS201: RISK MANAGEMENT AND HAZARD CONTROL SYSTEM

Total Credit: 4

Unit 1

- Hazards
- Definition
- Glossary of Terms

Unit 2

- Risk Management
- Hazards Control System
- System safety
- Job Hazard analysis

Unit 3

- Hazop
- Fault tree Analysis
- Failure mode and effect Analysis

Unit 4

- Physical and chemical properties of hazardous materials
- Introduction
- Major industrial hazards

Unit 5

- Types and consequences of major industrial hazard

- Effects on human body
- Precautions while fire fighting

Unit 6

- Stages of combustion
- Hazards of combustion
- Stability and inflammability

Unit 7

- BLEVE
- Fire extinguishment

Flammable Solids, Liquids and Gas

Unit 8

- Petrochemicals and other hydrocarbons
- Tank fire – storage tank, trucks, service stations
- High pressure pipe lines

Unit 9

- Pressurized and liquefied gases
- Natural gas
- Petroleum gases
- Refrigerants etc.

Unit 10

- Acetylene
- Metals
- Non metals

Unit 11

- Other hazardous properties
- Harmful contamination of air and water
- Toxicity

Unit 12

- orrosiveness
- Radioactive hazards
- Special precaution for handling

Unit 13

- Emergency preparedness
- Pesticides
- Explosion

Unit 14

- Deflagration and detonation of gas
- Dust explosion
- Confined and unconfined vapor cloud explosion

Unit 15

- Safety Management and legislation
- Functions of safety management



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Unit 16

- Factories Act 1948 (chapter 3,4,5)
- Workmen compensation Act 1923 (objectives and coverage's)



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Recommended Books :

- Principles of Risk Management and Insurance by George E. Rejda and Michael McNamara
- ISO 31000: Risk Management in Action
- The Risk Management Handbook: A Practical Guide to Managing the Multiple Dimensions of Risk edited by David
- The Failure of Risk Management: Why It's Broken and How to Fix It by Douglas W. Hubbard Hazard Control & Safety Engineering
- Managing the Risks of Organizational Accidents by James Reason
- High Integrity Systems and Safety Management in Hazardous Industries (edited by David J Smith)
- Practical Hazops, Trips and Alarms by David Macdonald
- Risk Assessment and Hazard Control.

Decision Making and Quantitative Analysis

- Thinking, Fast and Slow by Daniel Kahneman
- Risk Analysis: A Quantitative Guide by David

DFS202 : HEALTH, SAFETY, ENVIRONMENT ENGINEERING AND CONSTRUCTION SAFETY

Total Credit: 4

Unit 1

- Safety, Health and Environment
- Occupational Health Hazards
- Control of occupational deceases

Unit 2

- OSHA,
- ILO
- Ergonomics

Unit 3

- Introduction
- Definition
- Objectives
- Advantages

Unit 4

- Principles of Environmental Engineering
- Pollution Prevention
- Waste treatment
- Disposal of waste

Unit 5

- Standards of Environmental Management System
- Engineering Control Health Hazards
- Material handling safety

Unit 6

- Personal protective Equipments
- Electrical Hazards and safety.

Unit 7

- Introduction of construction industry
- Construction Safety Organization
- Work permit system

Unit 8

- Hot permit
- Electrical permit
- Vessel entry permit
- Excavation permit
- Confined space entry permit
- Acid area entry permit

Unit 9

- Safety at work
- Machine guarding
- Ventilation
- Lighting



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Unit 10

- Safety at construction site
- Hazards
- Scaffolding and working platform
- Welding and cutting

Unit 11

- Rigging and hoisting
- Handling and storage of compressed gas
- Excavation work
- Concreting and cementing work

Unit 12

- Transportation of men and material
- Lock out and tag out
- Shoring
- Waste control disposal

Unit 13

- Building construction, TAC and NBC rules
- Inspection of site, high rise building

Unit 14

- Fire protection introduction to TAC norms
- Earth quake
- Lightning and electrical hazard protection
- Building construction

Unit 15

- Building materials
- Plan reading and method
- Standard, symbols, designation
- Personal hazards
- Fire escape structural precaution

Unit 16

- Floor openings, staircase, escalators etc.
- Fire hazard in a building
- Building collapse and symptoms
- Fire tower/fire escape



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Recommended Books:

- ***Fundamentals of Safety, Health & Environmental Management*** by Rabindranath Jana
- ***Industrial Safety, Health and Environment Management Systems*** by Prof. Sunil S. Rao and R.K. Jain
- ***Environmental, Safety, and Health Engineering*** by Gayle Woodside and Dianna Kocurek
- ***Introduction to Health and Safety in Construction*** by Ed Ferrett and Phil Hughes
- ***Pearson Construction Safety Management***
- ***Safety, Occupational Health and Environmental Management in Construction***
- ***Safety for Construction Sites and Workers*** by Dr. Ramdas B Jadhav
- ***Applied Construction: Health and Safety*** by TC Haupt
- ***Electrical Safety, Fire Safety Engineering and Safety Management*** by Prof. Sunil S. Rao
- ***The Safety Professional's Handbook***



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DFS203: INDUSTRIAL SAFETY

Total Credit: 4

Unit 1 Industrial Hazards

Physical hazards

Chemical hazards

Mechanical hazards

Unit 2

Biological hazards

Ergonomic hazards

Noise hazards

Unit 3

Chemical safety

Toxicity

IDLH (Immediate Danger to Life and Health)

Unit 4

Chemicals - Storage, Handling and Transportation

Preventive measures for chemical spillage

Transport Emergency Card (TREM Card)

Unit 5 Electrical Safety

What is electricity

Safety in use of electricity

Dangers from electricity

Unit 6

Importance of safety equipments in design and use of switches, switch

fuses, circuit breakers and isolating lines

Over load and short circuit protection

Unit 7

Earth fault protection

Earthing of electrically driven equipments

ELCB

Precautions

Unit 8

Static electricity

Electrical shock treatment



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Points to be checked at the electrical system



UNIT 9 Workshop Safety

Hand tools and Power tools

Safety while using Grinding stone

Unit 10

Welding and gas cutting safety

Dangerous points

Lubrication Safety

UNIT 11 Hazard Evaluation Techniques

Hazard Study

Job safety analysis

Fault tree analysis

Unit 12

Event tree analysis

Failure modes and effects analysis

Relative ranking techniques

Unit 13 Monitoring of Safety Performance

Statistics of accidents

Frequency rate and severity rate

Frequency severity incidence

Safe – T – score

Unit 14 Petroleum Refineries

Refinery Process

Classification of Petroleum Products

Storage Tanks



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UNIT 15

House Keeping

Definition

Need for house keeping

Importance in view of safety

Methods

Unit 16

Safety Inspections

Safety Audit

Safety Survey

Plant safety inspection

Safety tour

Safety samplings



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Recommended Books

- Safety Professionals Handbook (ASSP): Comprehensive reference for standards, regulations, and best practices.
- Accident Prevention Manual for Business and Industry (National Safety Council)
- Fundamentals of Occupational Safety and Health
- The 8 Habits of a Highly Effective Safety Culture
- Save Lives
- Supervisors' Safety Manual
- Safety Management System and Documentation Training Programme Handbook (Paul SV)
- Industrial Safety, Health and Environment Management Systems (Sunil S. Rao)
- Fundamentals Of Process Safety Engineering
- Safety in Chemical Plants/Industry and Its Management
- Occupational Health and Safety in the Food and Beverage Industry



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Unit 9 HSE Training

- Importance of Safety Education
- Safety Training
- Objectives of HSE training and education

Unit 10

- Induction Training
- In-house Training
- Specialised Training
- Tool Box Meeting (TBM)

Unit 11 Personal Protective Equipment (PPE)

- Need and importance of PPE
- Employer's responsibilities
- Employees responsibilities

Unit 12

- Types of PPE
- Head Protection



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Eye and Face Protection

Ear Protection

Unit 13

Hand Protection

Leg Protection

Skin Protection

Respiratory protection

Unit 14

HSE Training

Importance of Safety Education

Safety Training

Objectives of HSE training and education

Unit 15

Induction Training

In-house Training

Unit 16

Specialised Training

Tool Box Meeting (TBM)



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Recommended Books :

1926 OSHA Construction Industry Regulations

Construction Safety Handbook: A Practical Guide to OSHA Compliance and Injury Prevention:

Safety Management in Construction (Principles and Practice) by Khanna Publishers.

Safety Fundamentals and Best Practices in Construction Industry

Safety at Height: A Holistic View of Fall Management from Routledge's offerings.

BIM and Construction Health and Safety/Industrial Safety, Health and Environment

Management Systems from Khanna Publishers.

Government Sites: [DGFASLI \(India\)](#) for manuals.



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DFS205: Fire Engineering Science

Total Credit: 2

Unit 1

Analysis and interpretation of data

Extract and tabulate given data and express that data in the form of:-

- a) Graphs
- b) Histograms and bar charts
- c) Circular diagrams (pie charts)

Obtain median, mean and norm values from given data

Extend graphs to:-

- a) Project values from given data (extrapolate)
- b) Deduce values from missing data (interpolate)

Unit 2

Mechanics

Define the SI system of units in terms of basic and derived units

Describe and carry out simple calculations involving the equations of motion

Describe Newton's Laws of Motion

Use vector quantities to find resultant values
Apply vector methods to force and motion problems
Calculate moments around a fulcrum including the use of levers and parallel force
Carry out calculations involving centres of gravity and buoyancy

Unit 3

Define stress strain, describe Hooke's Law and carry out calculations involving these terms
Apply the calculations of work, power, density and efficiency to practical examples
Describe and calculate the friction force between two surfaces in contact

Hydraulics

Define the following terms and demonstrate the relationship between them:-
a) Density
b) Specific gravity
c) Pressure in fluids
Solve problems involving the terms referred
Define "streamline flow"

Unit 4

Show how the principle of atmospheric pressure is used in pumping systems either as an aid to flow or as a means of measuring flow
Use the laws of friction to calculate energy losses in piped water supplies
In relation to pumps, define water power, brake power and efficiency. Carry out basic calculations involving these terms

Unit 5

Explain the relationship between velocity and discharge of water through hose of differing diameters
Discuss the purpose and design of branches and nozzles
Calculate the theoretical and the effective height of a jet

Electricity

Describe electric current as a flow of electrons
Describe how electrical energy is generated and distributed
Explain the characteristics of alternating and direct current

Unit 6

Describe the operation and characteristics of a step-up and step-down transformer
Explain Ohm's Law and calculate the relationship between resistance, amperage and voltage in simple circuits (parallel and series).
Use Ohm's Law to solve problems

Unit 7

Explain the magnetic and chemical effects of electrical currents and show how these phenomena are applied in:-
a) Electric motors
b) Primary and secondary electric cells

Describe the function and method of operation of fuses and circuit breakers
Define and solve problems involving resistance variation with temperature and resistivity
Apply the concept of power to electrical circuits



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Unit 8

Heat

Define and calculate:-

- a) Specific heat capacity
- b) Latent heat of vaporisation

Apply the use of calculations involving the transfer of heat

Recommended Books:

- ***SFPE Handbook of Fire Protection Engineering***
- ***Introduction to Fire Dynamics*** by Dougal Drysdale
- ***Chemistry of Fire***
- ***Fundamentals of Physics*** by Halliday, Resnick, Walker
- ***Building Construction for the Fire Service*** by Francis L. Brannigan
- ***Fire Protection Engineering in Building Design***
- ***Elementary Fire Engineering Handbook***
- ***Fireground Hydraulics / Fire Service Hydraulics***
- ***Coordinating Ventilation*** by Nicholas Papa
- ***Fire Officer's Handbook of Tactics*** by Norman
- ***Fundamentals of Fire Risk Assessment Calculations.***
- ***Sax's Handbook of Dangerous Substances / Croner's Dangerous Substances***
- **Institution of Fire Engineers (IFE) Publications**
- **Fire Engineering (Magazine/Books)**
- **National Fire Protection Association (NFPA) Standards**



DFS206: EMERGENCY PLANNING & FIRST AID

Total Credit: 4

Unit 1 On site Emergency Planning

- On-site Emergency Plan
- Emergency Alarm System
- Emergency Control Room

Unit 2

Key personnel

Unit 3 Off site Emergency Planning

Off-site Emergency Plan

Mutual Aid Scheme

Emergency Evacuation

Unit 4

Security and Media management

Unit 5 Hazard Communication

Safe Handling of hazardous substance

Material Safety Data Sheet (MSDS)

Unit 6

Use of hazardous and Toxic substance

Storage and Handling

Transportation of Hazardous substance

Unit 7 First Aid

Introduction



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The practice of First Aid

Principles of First Aid

Unit 8

Training in First Aid

General rules of First Aid

Unit 9

Shocks

Electrical Shock

Artificial Respiration

Unit 10

Cardio Pulmonary Resuscitation

Chocking

Unit 11

Fainting

Poisoning

Open Wounds

Unit 12

Control of bleeding

Burns and Scalds

Heart Attack

Unit 13

Resuscitation.

Disorder of respiratory system.

Disorder of Circulation.

Unit 14

Wound & Bleeding.

Disorders of consciousness.

Bone, Joint & Muscle injury.

Burns & Scalds.

Unit 15

Effect of heat & cold.
Foreign bodies

Poisoning.

Unit 16

Dressing & Bandages.
Handling & transport of injured.
Emergency First Aid.

Recommended Books:

- ACEP First Aid Manual, 5th Edition.
- The Survival Medicine Handbook
- St John Ambulance First Aid Manual
- First Aid for the USMLE Step 1
- Tintinalli's Emergency Medicine: A Comprehensive Study Guide
- Harrison's Principles of Internal Medicine & Cecil Medicine:
- Oxford Handbook of Clinical Medicine
- Medicine for the Outdoors
- Bushcraft First Aid