

**MAHAKAUSHAL UNIVERSITY, JABALPUR
(M.P.)**



SYLLABUS

For

CERTIFICATE IN FIRE MEN

Course Code: CFMN

Department of Fire Safety & Disaster Management

Duration of Course : 6 Month

Examination Mode : Semester

Examination System: None-Grading

Mahakaushal University, Jabalpur (M.P.)2021-22



FUNDAMENTAL OF FIRE SCIENCE COURSE CODE- CFMN0101-T

UNIT- I

Marks: 20

History of fire service , Force, resultant force , Mass and weight, work, power, energy , Law of conservation of energy , Mechanics – rest and motion ,Distance and displacement, Speed and velocity.

UNIT- II

Marks: 20

Acceleration, retardation, Acceleration due to gravity Machines and engines, Efficiency, Friction Atomic structure, Elements, compounds.

UNIT- III

Marks: 20

Pure substance and mixture, Physical and chemical changes, Energy changes, Temperature, Heat of decomposing, chemical reaction, Investigation of fire, Arson and detection of fires

UNIT- IV

Marks: 20

Classification of fire , General Causes of fire , Detection of fire, Extinguishing methods First aid fire fighting equipments, Fire bucket, Fire beater, hose reel hose, Portable extinguisher, Construction, Operation , Maintenance, Refilling.

UNIT- V

Marks: 20

Fixed fire fighting installations using water, Hydrant or fire water system, Classification of hydrant system, Sprinkling system, Special fires and fire fighting, fixed fire fighting installations not using water, Complete CO2 flooding system, Complete DCP spraying system, Complete Halon flooding system.

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.



Mahakaushal University, Jabalapur (M.P.)

FIRE CONTROL TECHNOLOGY & FIRST AID COURSE CODE- CFMN0102-T

UNIT- I

Marks: 20

Hose, Causes and prevention of shock, Causes and prevention of rubber acid, Couplings, Component parts of inter locking couplings, Suction coupling wrenches, Branches, nozzles and branch holders, Breechings, Adapters.

UNIT- II

Marks: 20

Fire alarm, Introduction of Electronics and Electricity, Circuit Control and Protective Devices, Transistors , Principles of fire detectors, Principles of fire detectors, Type of detectors, Automatic fire detection, Classification of detector.

UNIT- III

Marks: 20

Trouble shooting and maintenance, Rope, Lines, knots and ladders, Cordage, Different type of knots, Purpose of knots, Ladders.

UNIT- IV

Marks: 20

Hook ladder, Escape ladder, Turn table and extension ladder, SCBA and foam making equipments, Effects of respiration, Essential fetchers of BA set, Foam & foammaking equipments, Pumps, primers, tenders and water relays.

UNIT- V

Marks: 20

Action at Emergency, The practice of First Aid, Control of bleeding, Burns and Scalds, Heart Attack, Disorder of Circulation, Dressing & Bandages, Handling & transport of injured.

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.



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PRINCIPLE OF INDUSTRIAL & CONSTRUCTION SAFETY COURSE CODE-CFMN0103-T

UNIT- I

Marks: 20

Introduction of construction Safety, Construction Safety Organization, Goals, Importance, Need, History of Safety, Accident Causation, Theories and principles of accident Causation, The effect of accident, Unsafe Act & Unsafe condition, Unpredictable performance, Consequences of accident.

UNIT- II

Marks: 20

Cost analysis and Accident Prevention, Direct & Indirect accident, Accident Prevention Methods, Accident Investigation & Reporting, Pre- accident Strategy and Health Policy, Physical hazards, Chemical hazards & Mechanical hazards, Housekeeping and Importance.

UNIT- III

Marks: 20

Role of government, Management, workers and trade unions , Management of shock, Burns, scalds and accidents caused by electricity, Rescue and transport of casualty monitoring of Safety Performance Petroleum Refineries, Work permit system, Safety at work.

UNIT- IV

Marks: 20

Electrical Safety, over load and short circuit protection, Earth fault protection, Classification of Petroleum Products, Safety Inspections Safety at construction site.

UNIT- V

Marks: 20

Workshop Safety, Welding and gas cutting safety, Hazard Evaluation Techniques, Event tree analysis, Failure modes and effects analysis, Relative ranking techniques

Text Books

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



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HEALTH SAFETY & DISASTER MANAGEMENT COURSE CODE-CFMN0104-T

UNIT- I

Marks: 20

Occupational Health Hazards , OSHA, Principles of Environmental Engineering, Pollution Prevention, Waste treatment, Disposal of waste.

UNIT- II

Marks: 20

Standards of Environmental Management System, Engineering Control Health Hazards, Material handling safety, Personal protective Equipments, Electrical Hazards and safety.

UNIT- III

Marks: 20

Hazards, Scaffolding and working platform, Welding and cutting, Rigging and hoisting, Handling and storage of compressed gas, Transportation of men and material, Lock out and tag out, Building construction, TAC and NBC rules, Inspection of site, high rise building.

UNIT- IV

Marks: 20

Fire protection introduction to TAC norms, Lightning and electrical hazard protection, Plan reading and method, Standard, symbols, designation, Personal hazards, Fire escape structural precaution, Safe Work Place, Basic requirements of Scaffolding, Permit To Work System (PTW), HSE Training, Personal Protective Equipment (PPE).

UNIT- V

Marks: 20

Introduction & Classification of Disasters, Inter-relationship between Disasters and Development, Disaster Risk Management in India, Hazard and Vulnerability profile of India, Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, Waste Management.

Text Books

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



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FIRE LAB
COURSE CODE-CFMN0105-P

Detection of fire , Extinguishing methods First aid fire fighting equipments , Fire bucket, Fire beater, hose reel hose , Portable extinguisher , Construction , Operation , Maintenance, Refilling.