



ACHARYA NAGARJUNA UNIVERSITY

2022 Onwards

Detailed Syllabus

Certificate course in Fire and safety - 3 Months

Paper-1: Fundamentals of Fire and Safety

Paper-2: Safety in construction

Paper-3: Emergency Response & Environment Pollution



ACHARYA NAGARJUNA UNIVERSITY

Detailed Syllabus

CERTIFICATE COURSE IN FIRE AND SAFETY PAPER-1 FUNDAMENTALS OF FIRE & SAFETY

Unit-I

Chemistry of combustion, Chemistry of Heat & Mechanism, Classification of fire, Flash and fire point, Ignition temperature. Portable fire extinguishers, Pumps and primers, Foam and foam making Equipments.

Unit-II

Portable fire extinguishers, Pumps and primers, Foam and foam making Equipments. Hose and hose fittings, Water relay systems, Breathing apparatus, Small gears.

Unit-III

Fire alarm systems, Fire prevention. PPE's for fire fighting. Ladders, Ropes and lines, bends & hitches.

Unit-IV

Special appliances, Detection of fire, fire sprinklers, Fire fighting codes and standards, Electrical fire hazards, Structures under Fire.

Reference Books

Fire Protection Hand Book – Publication: National Fire Protection Association
USA Author: Quincy – Massachusetts

Fire and explosion Hazards Handbook of Industrial Chemicals Publication:
Jaico Publishing House Author: Tatyana A. Devletshina & Nicholas P.
Cheremisinoff, Ph. D.

Industrial Fire Protection Hand Book – Publication: CRC Press, Boca Raton,
FL. Author: Schroll, R. C, 2002.



PAPER-2

SAFETY IN CONSTRUCTION

Unit-I

Site planning and housekeeping, Types of Scaffolds, Scaffold Erection & dismantling, Scaffold Inspection.

Unit-II

Safety in scaffolding – an overview, Investigation of scaffold accident, Provisions on scaffold under the building and other construction workers central rules, 1998, Safety in excavations, trenching and shoring.

Unit-III

Road work and pilling operation, Ladders, Use of safety nets and fall protection systems, Concrete and concert foams and shoring.

Unit-IV

Importance of civil work in construction industry, Material handling, Important safety requirements and inspections.

Reference Books

Sp 70-2001 Hand Book of Construction Safety Practices, Bureau of Indian Standards, New Delhi.

Construction Safety – Publication: Prentice Hall- Author: Jimmie Hinze, 1997.

Safety, Security and Risk Management – Singh U. K.



PAPER-3

EMERGENCY RESPONSE & ENVIRONMENTAL SAFETY

Unit-I

Introduction, Understanding fire: How and why people die in fires , Human behaviour in fire:

How people behave in emergencies, Development of emergency preparedness plans. Monitoring and evaluation plan for emergency response

Unit-II

Emergency Plans & Staff Training, Highly Flammables & LPG, Fire fighting equipment requirements, Mock Drills, First Aid Training.

Unit-III

Industrial and Chemical Disasters. The process of fire risk assessment, Fire risk assessment recording and review procedures,

Unit-IV

The potential for pollution arising from fires, Measures to prevent and reduce fire pollution. Guidelines related to Industrial Siting, Environment (Protection) Act and Rules,

Reference Books

1. Rao, CS, "Environmental pollution engineering:, Wiley Eastern Limited, NewDelhi, 1992.
2. S.P.Mahajan, "Pollution control in process industries", Tata McGraw Hill Publishing Company, New Delhi, 1993.
3. Guidelines for Hazard Evaluation Procedures, Third Edition,Centre for Chemical Process safety, AICHE 2008