

SHRI GOVIND GURU UNIVERSITY, GODHRA



Syllabus for **Diploma in Fire Safety** With Effect From: 2021-22

Diploma in Fire and Safety Syllabus

		Paper Name	Marks	Passing Standard
Semester I	01	Fire tech & design	100	40
	02	Principles of Management	100	40
	03	Construction safety	100	40
	04	Industrial safety	100	40
Semester II	05	Environmental safety	100	40
	06	Safety of People in the Event of Fire	100	40
	07	Leadership and Communication	100	40
	08	Field Training	100	40

Diploma in Fire and Safety Management Course Details

Degree	Diploma
Full Form	Diploma in Fire and Safety Management
Duration	Course Duration of Diploma in Fire & Safety Management is 1 Years.
Age	No age restriction as such
Minimum Percentage	45%
Subjects Required	10+2 from a recognized board or equivalent.
Average Fees Incurred	INR 17500 per semester.
Employment Roles	Fireman, Fire Officer, Safety Incharge, Fire Safety Trainor, Health and Safety Instructor, Safety Instructor, etc.
Placement Opportunities	Oil and Natural Gas Corporation (ONGC), Central Industrial Security Force (CNSC), CityMunicipal Corporations, Health and Safety Department, etc.

PAPER 101 FIRE TECH & DESIGN

Unit	Contents	Marks/Weightage
1	Classification of fire portable fire extinguishers pumps and primers foam and foam making equipment	18
2	Hose and hose fitting water relay systems breathing apparatus small gears	18
3	Fire protective clothing ladders Ropes and lines, bends & hitches fire prevention	17
4	Special appliances firefighting codes and standards electrical fire hazards structures under fire.	17

Reference Book: -

1. Handbook of Fire Technology- by R.S. Gupta, 2005.
2. Brown, Tim. "What We Can Learn from Barn Raisers." Design Thinking: Thoughts by Tim Brown. Design Thinking, y 2015.
3. Knapp, Jake. "The 8 Steps to Creating a Great Storyboard." Co. Design. Fast Company & Inc.,
4. van der Lelie, Corrie. "The Value of Storyboards in the Product Design Process." Journal of Personal and Ubiquitous Computing 10.203 (2006): 159–162.web. 9 July 2015. [PDF].
5. Miltonson, Alisson. "Design Research 101: Prototyping Your Service with a Storyboard." Peer Insight. Peer Insight, 31 May 2013. Web. 9 July 2015.

Paper 102 Principles of Management

Unit	Contents	Marks/Weightage
1	4 Definition of Management, Science or Art, Planning: Nature & Purpose, Steps involved in Planning, Objectives, Setting Objectives, Process of Managing by Objectives, Strategies, Policies & Planning Premises, Forecasting, Decision-making.	18
2	Organizing: Nature and Purpose, Formal and Informal Organization, Organization Chart, Structure and Process, Departmentation by difference strategies, Staffing – Selection Process - Techniques – HRD – Managerial Effectiveness.	18
3	Directing: Scope, Human Factors, Creativity and Innovation, Harmonizing Objectives, Leadership, Types of Leadership Motivation, Hierarchy of Needs, Motivation theories, Motivational Techniques, Job Enrichment, Communication, Process of Communication, Barriers and Breakdown, Effective Communication, Electronic media in Communication.	17
4	Controlling: System and process of Controlling, Requirements for effective control, The Budget as Control Technique, Control of Overall Performance, Direct and Preventive Control, Reporting, The Global Environment, Globalization and Liberalization, International Management and Global theory of Management.	17

Reference / Text-Books/ Additional Reading:

1. Wehrich Heinz and Koontz Harold-Management A Global and Entrepreneurial Perspective Mc Graw Hill 12th Edition 20012
2. Stoner, Freeman & Gilbert Jr –Management Organizational Behaviour
3. Prentice Hall of India 6th Edition or later edition
4. Rao VSP Management, Text & Cases Excel Books Latest Edition

Unit	Content	Marks/Weightage
1	Site planning and housekeeping types of scaffolds erection & dismantling scaffold inspection	18
2	Safety in scaffolding — an overview Investigation of scaffold accident provisions on scaffold under the building other construction workers central rules, 1998 safety in excavations, trenching and shoring	18
3	Road work and pilling operation ladders use of safety nets and fall protection systems concrete and concert foams and shoring	17
4	Importance of civil work in construction industry Material Handling important safety requirements and inspections.	17

Reference Book

1. K.N. Vaid (Ed.), Construction Safety Management, National Institute of Construction Management and Research, Bombay.
2. V.J. Davies & K. Tomasin, Construction Safety Handbook, Thomas Telford Publishing, London.
3. James B. Fullman, Construction Safety, Security & Loss Prevention, John Wiley & Sons
4. Linger L, Modern Methods of Material Handling
5. R.T. Ratay, Handbook of Temporary Structures in Construction, Mc Graw-Hill
6. National Building Code of India 2005, SP-7, Bureau of Indian Standards, New Delhi.
7. Contract Labour Act and Central Rules
8. Building & Other Construction Workers (RE &CS) Act, 1996 and Central Rules.

Unit	Content	Marks/Weightage
1	Introduction to Safety • Goals, Need, History of Safety. • Importance of Industrial Safety • Accident Causation • Definition	18
2	Fundamentals of industrial safety different types of industries different types of safety systems and equipment safety policy and safety terminology	18
3	Safety Management and legislation • Functions of safety management • Factories Act 1948 (chapter 3,4,5) • Workmen compensation Act 1923 (objectives and coverage's)	17
4	Emergency planning safety inventory systems safety survey occupational health hazards safety organization and duties of a safety officer	17

Reference Book

1. Industrial Safety, Health Environmental Management System: R.K. Jain, Sunil S. Rao
2. Industrial Safety, Health Environmental Management System: R.K. Jain Sunil S. Rao, Khana Publishers
3. Ronald P. Blake, Industrial Safety: Prentice Hall, New Delhi, 1973

Semester II**Paper 105 ENVIRONMENTAL SAFETY**

Unit	Contents	Marks/Weightage
1	Air pollutants, Pollution sources Automobile pollution-hazards of air pollution-consent of clean coal combustion technology, fly ash control of combustion in combustion chambers-ultraviolet radiation, infrared radiation from sun hazards due to depletion of ozone deforestation ozone holes-automobile exhaust chemical factory stack emissions .	18
2	Hazardous waste management in India Waste identification, characterization and classification Technological options for collection, treatment and disposal of hazardous waste selection charts for the treatment of different hazardous waste Methods of collection and disposal of solid wastes Health hazards, Toxic and radioactive wastes incineration and vitrification, Hazards due to bioProcess, Dilution and restrictions Recycling and reuse.	18
3	Sampling and analysis, Dust monitor, Gas analyzer, particle size analyzer Lux meter pH meter gas chromatograph atomic absorption spectrometer. Gravitational settling chambers cyclone separators scrubbers electrostatic precipitator bag filter maintenance control of gaseous emission by adsorption, absorption and combustion methods	17
4	pollution control board laws - pollution control in process industries like cement, paper, paper, petroleum products textile tanneries thermal power plants dying and pigment industries ecofriendly energy	17

Reference Book

1. Textbook of Environmental Studies (Erach Bharucha) UGC, New Delhi
2. Environmental Noise Pollution, P. E. Cunniff, McGraw Hill, New York, 1987.
3. Encyclopedia of Ecology, Environment Swaroop. R, Mishra, S.N. Mitlal, New Delhi Jaurl, V.P.
4. Environmental Concerns Saigo & Cunningham
5. Unit Operations and Processes in Environmental Engineering, T. D. Reynolds, P. Richards. PWS Series in Engineering, Boston, 2010.

Unit	Contents	Marks/Weightage
1	Recognition of possible fire sources and emergency procedures in the event of a fire, the course also offers an in-depth study of fire investigation and the construction techniques for eliminating fires, History of fires, types of detecting devices and extinguishing agents and systems, construction techniques, and fire investigation, National Fire Protection Association and Occupational Safety and Health Administration standards	18
2	Devising procedures in the event of fire, How people perceive and react to fire danger, The measures needed to overcome behavioural problems and to ensure the safe evacuation of people in the event of fire, Assisting disabled people to escape	18
3	Safety goals and objectives, Monitoring safety progress, Identifying hazards and risks, Safety and financial benefits, Safety and the balanced scorecard, Setting targets and ensuring commitment, Developing safe work systems, Policies and procedures, Safety values and principles	17
4	Allocating responsibility and authority, Rehabilitation after an incident, Workplace inspections, Measuring and reporting, Developing and effective safety culture, Building an incident free workplace, Removing obstacles to safety, Safety and accountability, Developing safety habits in the workplace, Fire Protection and Analysis	17

1. "Smokejumper: a memoir by one of america's most select airborne firefighters"byjason a. Ramos
2. "Essentials of firefighting and fire department operations"by ifsta
3. "The rural firefighting handbook"by dominiccoletti and larrydavis
4. "Fire command" by alan v. Brunacini

Paper 107**Leadership and Communication**

Unit	Contents	Marks/Weightage
1	Introduction • Definition of leadership • Function of leadership • Qualities of leadership	18
2	Organization: • Definition • Elements of good organization • Principles of organization • Advantages of organization	18
3	Communication • Methods of Communication • Barriers to Communication • Oral Communication • Speaking skills • Listening skills • Non verbal communication Written communication • Letter writing skills • Internal Communications • Formal and Informal reports • Notice • Agenda • Minutes	17
4	Safety communication • Managerial communication • Communication with employees with conducting training Emergency communication • Meeting documentation • Communication documents	17

Reference / Textbooks/ Additional Reading:

1. Text would be prescribed by the instructor in the class

Practical Training:

The students would go under practical field training with coordination of established fire and safety organizations. For which an approval should be sought from the academic session in the beginning of thesemester.

Paper 108**Field Training**

Students are required to undergo a practical Training in any of fire Fighting organization for a period of10 full day