



Gujarat Council of Vocational Training Gandhinagar



SYLLABUS FOR INDUSTRIAL FIRE FIGHTER & TECHNICIAN'S COURSE

NAME: INDUSTRIAL FIRE FIGHTER & TECHNICIAN'S COURSE

SECTOR: ENGINEERING

TERMINAL COMPETANCY: The Successful candidates should be able to.....

- He will be well disciplined member of the fire crew and would be able to operate all kind of portable and fixed fire fighting equipments and installations.
- Will be able to rescue persons trapped in various emergencies with or without BA set.
- Will be able to give first aid.
- Will be able to give CPR / Resuscitation.
- Will be able to control major fire and other emergencies like leak, spill, explosion etc in a team.
- Will be able to work as a "Fireman"/ "Professional Fire Fighter" in a regular Fire Department of any Industry, Municipality or elsewhere as per the requirement

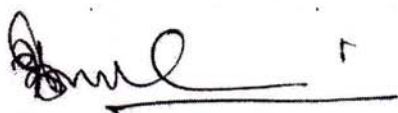
THEORY	PRACTICAL
PAPER 1 FIRE SCIENCE <ol style="list-style-type: none"> 1 What is combustion 2 Definition related to combustion 3 Fire triangle 4 Fuels 5 Source of Heat 6 Methods of fire spread 7 Basic fire extinguishing techniques 	Outdoor-1 <ol style="list-style-type: none"> 1. Hose 2. Types of Hose 3. Hose drill 4. Three man hydrant drill 5. 4 man hydrant drill 6. Adding extra length of hose 7. Changing burst length of hose 8. Hose fittings 9. Types of hose fittings 10. Uses of various hose fittings 11. Practical use of each hose fittings
CHEMICAL COMPOUNDS <ol style="list-style-type: none"> 1 Identification of various chemicals 2 Hazardous properties of various chemical compounds 	<ol style="list-style-type: none"> 12. Hydrant 13. Hydrant fittings 14. Hydrant drill



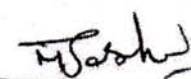
<p>FIRE HAZARDS IN INDUSTRY</p> <ol style="list-style-type: none"> 1. Process Hazards 2. Storage Hazards 3. Transportation Hazards 4. Electrical Hazards 5. Chemical Hazards 6. Other Hazards 	<ol style="list-style-type: none"> 15. Ladder 16. Ladder drill 17. Uses of Ladder 18. Small gears 19. Classification of small gears 20. Uses of small gears
<p>FIRE / LOSS PREVENTION</p> <ol style="list-style-type: none"> 1. Preventive Methods for Fire, Explosion, Accident 2. Precautions for various Accidents 	<ol style="list-style-type: none"> 21. Breathing apparatus 22. Types of BA sets 23. Identification of its parts 24. Wearing of BA sets 25. Pre-Entry Test of BA set 26. Entry in smoke chamber with BA set
<p>PAPER 2</p> <p>FIRE EXTINGUISHING EQUIPMENT</p> <ol style="list-style-type: none"> 1. Extinguishers 2. Hose 3. Hose Fittings 4. Hydrant 5. Hydrant fittings 6. Small Gears 7. Ladders 8. Pump & Primers 9. Foam & Foam Equipment 10. Fire Appliances 	<p>Outdoor- 2</p> <ol style="list-style-type: none"> 1. Fire Extinguisher 2. Identification of Extinguishers 3. Parts of each type of Extinguisher 4. Selecting correct Extinguisher for correct type of Fire 5. Operation of extinguishers 6. Refilling of extinguisher 7. Checking, Testing and maintenance of extinguishers 8. Hydro testing of extinguishers 9. Deployment of extinguishers
<p>FIRE PROTECTION SYSTEM</p> <ol style="list-style-type: none"> 1. Extinguishers 2. Rising main & Hose Reel System 3. Hydrant System 4. Water based Fixed Installations 5. Fire Detection and Alarm System 6. Fixed Foam System 7. CO2 Fixed Installation 	<ol style="list-style-type: none"> 10. Foam & Foam Equipment 11. Identification of various foam equipment 12. Practical use of various foam equipment 13. Fighting major fire with foam Monitor 14. Testing of various fire equipments 15. Monthly tests 16. Quarterly test 17. Half yearly test 18. Annual test
<p>PAPER 3</p> <p>FIRE SERVICE OPERATIONS</p> <ol style="list-style-type: none"> 1. Practical Fireman ship 2. Salvage 3. Special Service 4. Rescue Operations 	<p>Outdoor- 3</p> <ol style="list-style-type: none"> 1. Rope , Knots & Lines 2. Different types of Ropes used in fire service 3. Practice of various Knots 4. Rescue Knots

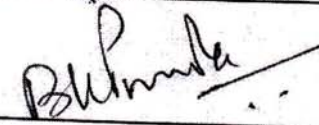


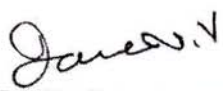
<ol style="list-style-type: none"> 5. Rope, Line, Knots 6. Rural & Forest Fire Operation 7. Water relay Operation 8. First Aid 9. Resuscitation 10. Breathing Apparatus & Other Life Saving Equipment 11. Hydraulic Calculations for Fire ground Operations 	<ol style="list-style-type: none"> 5. Various lines & their uses 6. Lifting of various fire equipment with the help of knots /lines 7: First aid 8. Practice of various bandages 9. Emergency first aid 10. Methods of resuscitation 11. CPR 12. Practice of CPBR
<p>PAPER 4 FIRE SERVICE ADMINISTRATION</p> <ol style="list-style-type: none"> 1. Fire Service Administration 2. Discipline 3. Watch room & Control room procedure 4. Mock Drill, Tactical Exercise 5. Standard test 6. Documentation 7. Computer knowledge 	<p>Outdoor- 4</p> <ol style="list-style-type: none"> 1. Pump 2. Pump operation 3. Pump drill 4. Pump testing 5. Fire appliance 6. Appliance drill 7. Major Fire practical practice

1 

2 

3 

4 

5 





Gujarat Council of Vocational Training

Gandhinagar



1 Name of Course:

INDUSTRIAL FIRE FIGHTER & TECHNICIAN'S COURSE

New Course

N.C.O. No. for Skills Covered(Please refer National Classification of Occupations-2004 available on www.dget.nic.in

2 Engineering OR Non-Engineering: Engineering

3 No. of students per batch: 50

4 Duration in Hours. : 756 Hours (4 Months)

5 Duration in Month: 7 Hours Per Day @ 42 hours/week

Duration in Month: _____ @ 22 hours/week - N.A.

6 Examination Scheme:

No	Name of Subject	Teaching Hours During Full Course.	Maximum Marks. (Excluding Sessional)	Minimum Marks required for Passing (Excluding Sessional).	Sessional Marks if Any.
Subject-1	Fire Science, Fire Hazards & Loss Prevention in Industry	47 Hours	100	40	N.A.
Subject-2	Fire Brigade Equipments & Fire Protection Systems	47 Hours	100	40	N.A.
Subject-3	Fire Service Operations	47 Hours	100	40	N.A.
Subject-4	Fire Service Management	48 Hours	100	40	N.A.
Subject-5	Practical on Hoses, Hydrants, Ladders, small gears, BA set	78 Hours	50	25	N.A.
Subject-6	Practical on Fire Extinguishers, Foam Equipments, Standard Test	79 Hours	50	25	N.A.
Subject-7	Practical on Pump operation, pump drill, fire appliance/drill, water relay, salvage operation	79 Hours	50	25	N.A.
Subject-8	Practical on Rope, knots & lines, first aid, resuscitation, rescue methods, PPE	79 Hours	50	25	N.A.

7 Entry qualification for Trainee:

Minimum entry qualification (Essential) :	Class 10 Pass / ITI Pass
Desirable :	Working as first responder in workplace.





Gujarat Council of Vocational Training Gandhinagar



11 Approximate cost of Tools / Equipments / Machinery for Starting one batch of course: Rupees - 3 crores Reference Year - 2011

12 Area required for practical / Workshop one batch. 5000 Sq Meter

13 Minimum Power connection required 2.5 K.W.

14.1 No of items in Standard list of Machinery : 01
 14.1.1 Page No. from _____ to _____.

14.2 No of items in Standard list of Shop outfit : 02
 14.2.1 Page No. from _____ to _____.

14.3 No of items in Standard list of Trainee Tool-Kit : 88
 14.3.1 Page No. from _____ to _____.

***** FOR OFFICIAL USE *****

Approved by GCVT in ~~Governing Body meeting~~ on : 17-4-2012

Syllabus implemented w.e.f. admission session : Next session.

Revision History :
 1. Revision No..... Revision Date
 2. Revision No..... Revision Date
 3. Revision No..... Revision Date





Gujarat Council of Vocational Training

Gandhinagar



Standard List of Machinery – Equipment / Shop-outfit / or Trainee Toolkit
for Trade of **INDUSTRIAL FIRE FIGHTER & TECHNICIAN'S COURSE**

Sr. No.	Description of Item with detailed specifications	Item type ie. Machinery / Equipment OR Shop Outfit OR Trainee Toolkit	Quantity Required per one batch of Students	Quantity Required per one Batch of Students for Instructor	Total Quantity Required (Total of previous two columns)
1	Fire Tender (Water, Foam, DCP)	Machinery	1 no.		1 no.
2	Sprinkler System	Equipment	1 no.		1 no.
3	Smoke Chamber	Shop outfit	1 no.		1 no.
	LPG Bullet	Equipment	1 no.		1 no.
5	Hydrocarbon Process Column and Platform	Equipment	1 no.		1 no.
6	Foam Flooding System	Equipment	1 no.		1 no.
7	Fixed / Mobile Water & Foam, Fire Monitor	Equipment	1 no.		1 no.
8	Fire Hydrant Net Work	Equipment	1 no.		1 no.
9	Conveyor Belt	Equipment	1 no.		1 no.
10	Floating Roof Tank	Equipment	1 no.		1 no.
11	Cable Trench	Equipment	1 no.		1 no.
12	Hydro Carbon Pipe Line	Equipment	1 no.		1 no.
	Flange Fire Module	Equipment	1 no.		1 no.
14	Motor Fire Module	Equipment	1 no.		1 no.
15	Hydro Carbon Tray	Equipment	1 no.		1 no.
16	Remote Operated long range high capacity fire monitor tower	Equipment	1 no.		1 no.
17	Fire water pump house – 2000 gpm	Equipment	1 no.		1 no.
18	Static ground level water tank for fire fighting facility 2 lakhs litres	Equipment	1 no.		1 no.





Gujarat Council of Vocational Training Gandhinagar



19	Short branch	Equipment	1 no.	1 no.	2 nos
20	Diffuser branch	Equipment	1 no.	1 no.	2 nos
21	Long branch	Equipment	1 no.	1 no.	2 nos
22	Fog nozzle branch	Equipment	1 no.	1 no.	2 nos
23	Nozzles	Equipment	1 no.	1 no.	2 nos
24	Revolving branch	Equipment	1 no.	1 no.	2 nos
25	M to suction F Adopter	Equipment	1 no.	1 no.	2 nos
26	Nozzle spanner	Equipment	1 no.	1 no.	2 nos
27	3 way collecting head	Equipment	1 no.	1 no.	2 nos
28	Female blank cap	Equipment	1 no.	1 no.	2 nos
29	Female Coupling	Equipment	1 no.	1 no.	2 nos
30	Metal strainer	Equipment	1 no.	1 no.	2 nos
31	Triple Purpose Branch	Equipment	1 no.	1 no.	2 nos
32	Dividing Breeching	Equipment	1 no.	1 no.	2 nos
33	Collecting Breeching	Equipment	1 no.	1 no.	2 nos
34	Suction wrench	Equipment	1 no.	1 no.	2 nos
35	Delivery hose	Equipment	5 no.	1 no.	6 nos
36	Hose Reel hose	Equipment	1 no.	1 no.	2 nos
37	Section hose	Equipment	1 no.	1 no.	2 nos
38	Rope	Equipment	1 no.	1 no.	2 nos
39	CO2 Ext.4.5 Kg	Equipment	1 no.	1 no.	2 nos
40	Basket strainer	Equipment	1 no.	1 no.	2 nos





Gujarat Council of Vocational Training Gandhinagar



8 Minimum qualification Trainer :

Minimum qualification (Essential) :	a) Sub Fire Officer for Theory b) Fireman for Outdoor / Practical Training
Desirable :	With 2 years experience in respective field

9. Syllabus Committee Member :

Sr.No.	Name	Organization	Designation	Technical Qualification	Exp. In Years	Signature
1	Mr.B.D.Raval	Industrial Trg.Institute, Tarsali,Vadodara	Principal Class-1		20+	
2	Mr.K.N.Mathur	Institute of Fire Safety & Disaster Management Vadodara	Principal	Div. Fire Officer's Course	34+	
3	Mr.Mukesh Joshi	Heavy Water Plant – Vadodara, Dept. of Atomic Energy	Station Fire Officer	Station Fire Officer's Course	15+	
4	Mr.B.K.Panda	Gujarat Refinery - Vadodara	Sr. Manager	B.E. Fire	15+	
5	Mr.Nikhil Dave	Gujarat Alkalies & Chemicals Ltd-Vadodara	Chief Manager	Fire & Safety Course	15+	

10 Terminal Skills of trainee : (Should be well defined and having reference to NCO) :

The trainee, after successful completion of training, will have following skills...

1. He will be well disciplined member of the fire crew and would be able to operate all kind of portable and fixed fire fighting equipments and installations.
2. Will be able to rescue persons trapped in various emergencies with or without BA set.
3. Will be able to give first aid.
4. Will be able to give CPR / Resuscitation.
5. Will be able to control major fire and other emergencies like leak, spill, explosion etc in a team.
6. Will be able to work as a "Fireman"/ "Professional Fire Fighter" in a regular Fire Department of any Industry, Municipality or elsewhere as per the requirement / demand.

(please attach separate)





Gujarat Council of Vocational Training Gandhinagar



41	DCP Ext.10	Equipment	1 no.	1 no.	2 nos
42	DCP Ext.75 Kg	Equipment	1 no.	1 no.	2 nos
43	DCP Ext. 5 Kg	Equipment	1 no.	1 no.	2 nos
44	CO2 Ext 4.5 Kg	Equipment	1 no.	1 no.	2 nos
45	Foam Ext 9 ltr	Equipment	1 no.	1 no.	2 nos
46	Fire bucket	Equipment	1 no.	1 no.	2 nos
47	Crowbar	Equipment	1 no.	1 no.	2 nos
48	Smoke detector	Equipment	1 no.	1 no.	2 nos
49	Hydrant key	Equipment	1 no.	1 no.	2 nos
50	Spade	Equipment	1 no.	1 no.	2 nos
51	Pickaxe	Equipment	1 no.	1 no.	2 nos
52	Bolt cutter	Equipment	1 no.	1 no.	2 nos
53	Door breaker	Equipment	1 no.	1 no.	2 nos
54	Large axe	Equipment	1 no.	1 no.	2 nos
55	Hand saw	Equipment	1 no.	1 no.	2 nos
56	Hammer	Equipment	1 no.	1 no.	2 nos
57	Pipe wrench	Equipment	1 no.	1 no.	2 nos
58	Fire axe	Equipment	1 no.	1 no.	2 nos
59	Adjustable wrench	Equipment	1 no.	1 no.	2 nos
60	Hose box	Equipment	1 no.	1 no.	2 nos
61	B.A. Set	Equipment	1 no.	1 no.	2 nos





Gujarat Council of Vocational Training Gandhinagar



62	Hydrant stand pipe	Equipment	1 no.	1 no.	2 nos
63	Hose clamp	Equipment	1 no.	1 no.	2 nos
64	Hose bandage	Equipment	1 no.	1 no.	2 nos
65	Hose strip	Equipment	1 no.	1 no.	2 nos
66	Rubber hand gloves	Equipment	1 no.	1 no.	2 nos
67	Asbestos hand gloves	Equipment	1 no.	1 no.	2 nos
68	FMB 5x	Equipment	1 no.	1 no.	2 nos
69	FMB 10x	Equipment	1 no.	1 no.	2 nos
70	In line Indicator	Equipment	1 no.	1 no.	2 nos
71	Foam Generator	Equipment	1 no.	1 no.	2 nos
72	Safety shoes	Equipment	1 Pr.	1 Pr.	2 Prs
73	Gumboots	Equipment	1 Pr.	1 Pr.	2 Pr.
74	B.A.Set	Equipment	1 no.	1 no.	2 nos
75	Jack with rod	Equipment	1 no.	1 no.	2 nos
76	Vehicle stopper	Equipment	1 no.	1 no.	2 nos
77	Battery Charger	Equipment	1 no.	1 no.	2 nos
78	Safety belt	Equipment	1 no.	1 no.	2 nos
79	Search light	Equipment	1 no.	1 no.	2 nos
80	Tool Box	Equipment	1 no.	1 no.	2 nos
81	N.R.V	Equipment	1 no.	1 no.	2 nos
82	Goggles	Equipment	1 no.	1 no.	2 nos
83	P.A. System	Equipment	1 no.	1 no.	2 nos





Gujarat Council of Vocational Training
Gandhinagar



84	H.R Soot	Equipment	1 no.	1 no.	2 nos
85	First Aid box	Equipment	1 no.	1 no.	2 nos
86	Vehicle mounted Monitor	Equipment	1 no.	1 no.	2 nos
87	Aluminium Ladder	Equipment	1 no.		1 nos
88	Ceiling hook	Equipment	1 no.	1 no.	2 nos
89	Stretcher	Equipment	1 no.	1 no.	2 nos
90	Pump House	Shop out fit	1 no.	-	1 nos

(As many sheets as required should be used to accommodate all items)

