Maharashtra State Board of Technical Education, Mumbai

Teaching and Examination Scheme

Programme Name: Advanced Diploma in Industrial Safety and Security Management

Programme Code: FF **With Effect From Academic Year: 2023 - 24**

Duration of Programme: One Year (Two Semesters) **Pattern : Semester (Full Time)** **Duration: 16 Weeks**

Semester: First **Scheme: I**

S. N.	Course Title	Course Abbreviation	Course Code	Teaching Scheme			Credit (L+T+P)	Examination Scheme													Grand Total
								Theory							Practical						
								Exam Duration in Hrs.	ESE		PA		Total		ESE		PA		Total		
				L	T	P			Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	
a	b	c	d	e	f	g	h(e+f+g)	i	j	k	l	m	n(j+l)	o	p	q	r	s	t(p+r)	u	v(n+t)
1	Industrial Safety Management	ISM	28116	4	2	--	6	1.5	70*#	35	30*	00	**100**	50	--	--	--	--	--	--	**100**
2	Fire Service Equipment And Appliances	FSE	28023	4	--	2	6	--	--	--	--	--	--	--	50@	25	50	25	**100**	50	**100**
3	Fire and Safety Legislation	FSL	28117	4	2	--	6	1.5	70*#	35	30*	00	**100**	50	--	--	--	--	--	--	**100**
4	Security Management	SGE	28024	4	--	2	6	--	--	--	--	--	--	--	50@	25	50	25	**100**	50	**100**
5	Fire Fighting Drills	FFD	28025	--	--	6	6	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	**100**
Total				**16**	**04**	**10**	**30**	--	**140**	--	**60**	--	**200**	--	**150**	--	**150**	--	**300**	--	**500**

Student Contact Hours Per Week: **30 Hrs.** **Theory and practical periods of 60 minutes each.** Medium of Instruction: **English** Total Marks: **500**

Abbreviations: ESE- End Semester Exam, PA- Progressive Assessment, L - Lectures, T - Tutorial, P - Practical

@Internal Assessment, # External Assessment, *# On Line Examination

* The average of 2 test to be taken during the semester for the assessment.

#$ External PR ESE and average of 2 Skill tests / Practicals.

@$ Internal PR ESE and average of 2 Skill tests / Practicals.

If student remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE.

- **Candidates not securing minimum marks for passing the "PA" part of practical of any course is declared as "Detained" for that semester.**
- **During the Internship and Project period students shall attend Institute one day a week to meet the mentor and appraise about the progress. The log book, Project Diary, and Internship performance shall be recorded by the mentor for progressive assessment.**

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION MUMBAI

Maharashtra State Board of Technical Education, Mumbai

Teaching and Examination Scheme

Programme Name: Advanced Diploma in Industrial Safety and Security Management

Programme Code: FF **With Effect From Academic Year: 2023 - 24**

Duration of Programme: One Year (Two Semesters) **Pattern : Semester (Full Time)** **Duration: 16 Weeks**

Semester: Second **Scheme: I**

S. N.	Course Title	Course Abbreviation	Course Code	Teaching Scheme			Credit (L+T+P)	Examination Scheme												Grand Total
								Theory							Practical					
								Exam Duration in Hrs.	ESE		PA		Total		ESE		PA		Total	
				L	T	P			Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	
a	b	c	d	e	f	g	h(e+f+g)	i	j	k	l	m	n(j+l)	o	p	q	r	s	t(p+r)	u	v(n+t)
1	Security Acts And Laws	SAA	28210	4	2	--	6	1.5	70*#	35	30*	00	**100**	50	--	--	--	--	--	--	**100**
2	Fire Service Equipment	FSE	28073	--	--	4	4	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	**100**
3	Rescue Technique	RHN	28074	--	--	4	4	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	**100**
4	Project	PFF	28075	--	--	6	6	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	**100**
5	Industrial (Occupancy) Training	IOT	28076	--	--	10	10	--	--	--	--	--	--	--	100#	50	100	50	**200**	100	**200**
			Total	**04**	**02**	**24**	**30**	--	**70**	--	**30**	--	**100**	--	**250**	--	**250**	--	**500**	--	**600**

Student Contact Hours Per Week: **30 Hrs.** **Theory and practical periods of 60 minutes each.** Medium of Instruction: **English** Total Marks: **600**

Abbreviations: ESE- End Semester Exam, PA- Progressive Assessment, L - Lectures, T - Tutorial, P - Practical

@Internal Assessment, # External Assessment, *# On Line Examination

* The average of 2 test to be taken during the semester for the assessment.

#$ External PR ESE and average of 2 Skill tests / Practicals.

@$ Internal PR ESE and average of 2 Skill tests / Practicals.

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- **Candidates not securing minimum marks for passing the "PA" part of practical of any course is declared as "Detained" for that semester.**
- **During Internship and Project period students shall attend Institute one day a week to meet the mentor and appraise the progress. The log book, Project Diary, and Internship performance shall be recorded by the mentor for progressive assessment.**

Note : The Institute is required to sign MOU with related local authories for Industrial Training/Internship

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **FIRST**

COURSE TITLE : **INDUSTRIAL SAFETY MANAGEMENT**

COURSE CODE : **28116**

1. RATIONALE

Safety Management subject deals with Accident Prevention, Planning and organizing of Safety, Safety Training to prevent the Accident. Basic understanding of all the topics mention in the subject are important.

2. COMPETENCY

To Maintain the Safety Management and Accident Prevention.

3. COURSE OUTCOMES

- To learn about the safety Management.
- To Understand Principles of Accident Prevention.
- Planning of Safety Management.
- To conduct the Safety training and Employee Participation in Safety Awareness through training.
- Detail Study of Human Behavior towards Accident.
- Importance of leadership in Safety culture.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme												
				Theory							Practical					
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total	
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
4	2	--	6	1.5	70*#	35	30*	00	100	50	--	--	--	--	--	--

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicals of 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

***Legends:** L-Lecture, **T** – Tutorial/Teacher Guided Theory Practice, **P** –Practical, **ESE** -End Semester Examination, **PA** - Progressive Assessment*
*@Internal Assessment, #External Assessment, *#Online Examination*

5. TUTORIAL ASSIGNMENTS

Tutorials should be planned to enhance learning. The faculty shall decide suitable assignments minimum one per unit based on the curriculum.

6. THEORY COMPONENTS

The following topics/sub topic should be taught and assessed in order to attain the identified competencies.

Unit	Topic and contents	Hours	Marks
I	**Safety Management** • Introduction of Management. • Principles of Management. • Levels of Management. • Role and Responsibility of Management. • Delegation and Decentralization of Authority.	09	10
II	**Principle of Accident Prevention** • Basic Principles. • Definitions: Accident, Incident, Near Miss, Dangerous Occurrences, Freq. Rate , Sev.Rate, Frequency Severity Index, Cost of Accident • Unsafe Act & Unsafe Conditions. • Theories of Accident Preventions.	09	12
III	**Planning for Safety** • Definition, Importance of Planning in Industrial Safety Management, Types of Planning, Policy Formation. • Role of Top Management in Strategic Planning – Management by Objective • Safety Insp & Audit w.r.t. IS Code • Analysis of Accident Data w.r.t Various Parameters, Accident Investigation, Remedial Measures, Implementation of • Remedial Measures, Why-Why, • Analysis for Accident Investigation.	09	12
IV	**Behavior Base Safety Management** • Human Behavior. • Human Factors Contributing to Accident. • Perception and Danger. • Individual Behavior, Group Behavior • ABC Module of Behavior Base Safety • Theories of Motivation. • Role of Safety Department in Motivation. • Conflict and Frustration.	09	12
V	**Organizing & Directing for safety** • Definition, Principle, Nature and Structure of Organizing and Directing. • Leadership: - Role, Functions and Attributes. • Communication: - Types and Channels of Communication, Group Dynamics. • Safety Committee- Structure and its Functions. • Safety MIS, Safety Audit.	14	12

Unit	Topic and contents	Hours	Marks
VI	**Safety Training and Employee Participation in Safety** • Elements of Training – Need Identification • Training Cycle – Types of Training, Feedback and Effectiveness of Training. • Safety Promotional Activities • Safety Awards at National & International Contest, Reward and Recognition.	14	12
Total		**64**	**70**

7. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Safety Management	09	03	03	04	10
II	Principle of Accident Prevention	09	02	04	06	12
III	Planning for Safety	09	04	04	04	12
IV	Behaviour Base Safety Management	09	06	03	03	12
V	Organizing & Directing for safety	14	03	04	05	12
VI	Safety Training and Employee Participation in Safety	14	04	04	04	12
Total		**64**	**22**	**22**	**26**	**70**

Legends: *R-Remember, U-Understand, A-Apply and above (Bloom's Revised taxonomy)*

Note*: The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary from above table.*

8. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	National Safety Council Hand book for accident prevention	NFPA	---
2	National Safety Council Journal " Chronical"	National Safety Council	---
3	National Fire Prevention Association (NFPA) Industrial Hazard Manual	NFPA	---
4	Factory Act Manual	Govt. Of India	---

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **FIRST**

COURSE TITLE : **FIRE SERVICE EQUIPMENT & APPLIANCES**

COURSE CODE : **28023**

1. RATIONALE

For fire and Safety officer it is must to have complete knowledge of various firefighting equipment and machinery in terms of working, use and Maintenance. Students shall have hands on experiences of operating this equipment's. This practice is important while using/operating these equipment/Appliances at the time of emergency.

2. COMPETENCY

Practical application, Care and Maintenance of life saving and Fire Fighting Equipment.

3. COURSE OUTCOMES

- Importance of Breathing Apparatus in case of Emergency.
- To know the utility and working of different types of extinguishes and fix firefighting installation.
- To get the Knowledge of Foam compounds along with the foam making Equipment.
- Utility of hose, hose fittings and Hydrants.
- Knowledge and use of conventional and Modern ladders /Platforms.
- Knowledge of different types of Pump, its Care and Maintenance.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
4	--	2	6	--	--	--	--	--	--	--	50@	25	50	25	**100**	50	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicalsof 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

***Legends:** L-Lecture, **T** – Tutorial/Teacher Guided Theory Practice, **P** –Practical, **ESE** -End Semester Examination, **PA** - Progressive Assessment*
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5. LIST OF PRACTICALS/ EXERCISES/ASSIGNMENTS/CASE STUDIES

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
1	**STUDY OF BREATHING APPARATUS (B.A.) USED IN VARIOUS INDUSTRIES (Part 1)** Principle – Types of B.A. Use and Care of B.A. Inspection of B.A. including Periodical maintenance Observation and findings of Breath Test Maintaining record of Breath Test
2	**STUDY OF BREATHING APPARATUS (B.A.) USED IN VARIOUS INDUSTRIES (Part 2)** Observation and findings of Breath Test Maintaining record of Breath Test
3	**STUDY AND UNDERSTANDING OF FIXED AND PORTABLE FIRE FIGHTING EQUIPMENTS (FFE) (Part 1)** Types Operational principles
4	**STUDY AND UNDERSTANDING OF FIXED AND PORTABLE FIRE FIGHTING EQUIPMENTS (FFE) (Part 2)** Inspection and testing of FFE Record of Inspection and servicing
5	**STUDY OF SPRINKLER SYSTEM** Principles – Design Aspects Operation and Maintenance Requirement of Drenchers and Rising Mains
6	**STUDY OF FOAM MAKING EQUIPMENTS AND HYDRANTS (Part 1)** Various types of foams and its applications Properties of foam and effectiveness in fire fighting
7	**STUDY OF FOAM MAKING EQUIPMENTS AND HYDRANTS (Part 2)** Differentiation between Chemical foam and Mechanical foam Storage and handling of foam
8	**STUDY OF FOAM MAKING EQUIPMENTS AND HYDRANTS (Part 3)** Safety precaution to be taken while using foam type fire extinguishers Difference between Low expansion and High expansion
9	**STUDY AND UNDERSTANDING OF VARIOUS TYPES OF FIRE HYDRANT SYSTEM** Inspection / Testing and maintenance of Hydrant System Record keeping of fire hydrant system including periodical schedule of maintenance
10	**CONSTRUCTION AND DESIGN ASPECTS OF FIRE FIGHTING HYDRANTS** Maintenance record and verification of operational condition of fire hydrants
11	**STUDY AND UNDERSTANDING OF HOSE FITTINGS** Types of hose fitting

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
	Components of hose fitting Inspection of hose fitting
12	**LADDERS (PART 1)** Types of ladder Specification of ladder as per IS Standard Understanding TTL and snorkel ladders
13	**LADDERS (PART 2)** Specification of ladder as per IS Standard Understanding TTL and snorkel ladders
14	**PUMP AND PUMP OPERATION(PART 1)** Study and understanding of various types of pump used in construction industry Inspection and maintenance record of pump
15	**PUMP AND PUMP OPERATION(PART 2)** Inspection and maintenance record of pump

6. THEORY COMPONENTS

The following topics/subtopics should be taught and assessed in order to attain the identified competencies.

Unit	Topic and Contents	Hours
I	**Breathing Apparatus** • Introduction, Physiology of Respiration, Types of B.A. Sets In Use, Construction, Working Principles, Station, Maintenance, Discussion, ISI Standard.	06
II	**Extinguishers & Fixed Fire-Fighting Installation** • Classification of Fire and Types of Extinguishers, Maintenance, Method of Operation, Reference to Relevant ISS. • Introduction of Sprinkler System and their Care and Maintenance and Operational Procedure, Elementary Requirements of Drenchers, Rising Mains, Hose Reels and Down – Comer, Automatic Fire Alarms CO2,Foam Installation , Reference to Relevant ISS	12
III	**Foam , Foam Making Equipment And Hydrants** • Introduction to All Types of Foam, Mechanical, Chemical, AFFF And High Expansion- Foam Concentrates, Properties of Foams And Technique of Extinguishment By Foam. • Foam Making Equipment – Mechanical and Chemical Operational Data's of Mechanical Foam, High Expansion and Low Expansion Foam Care and Maintenance and Storage of Foam Compound, Discussion On Relevant ISS. • Hydrant and Water Supplies, Water Distribution System, Types and Construction of Hydrants, Hydrant Gears and Equipment, Marking, Testing, Cares Maintenance Operation & Test of Hydrant Using Flow Gauge, Reference to Relevant ISS.	08
IV	**Fire Service Hose, Hose Fittings**	18

Unit	Topic and Contents	Hours
	• Types of Suction and Delivery Hoses , Material Used, Construction, Hose-reel, Hose, Causes Of Decay, General- Operational – Misuse of Hose, Storage Stowage, Cleaning and Drying , Care and Maintenance, Marking of Hose, Repair of Hose, Standard Tests of Delivery Hoses-Reference to Relevant ISS. • Definition and Different Groups of Hose Fittings , Types and Construction of Suction , Hose and Delivery, Hose-Couplings, Suction Couplings, Wrenches, Branches, Monitors, Water – Cum-Foam Monitor, Nozzles and Branch Holders, Collecting Head and Suction Hose , Fittings, Frost Valve, Deep Lift Suction Fittings , Breaching, Adopters and Blank Cap Suction Reducing Plate, ,Miscellaneous, Hose Fittings, Hose Ramps, Maintenance of Hose Fittings.	
V	**Ladders** Introduction, Types of Ladders, Construction Features of Conventional Ladders, Operational Use, Elementary Knowledge of T.T.L and Snorkel (As per Bureau of I.S. Standards), Reference to Relevant ISS.	10
VI	**Pump & Pump Operation** Classification of Common Types in Use, Construction, Methods of Priming, Testing and Fault – Finding , Care and Maintenance and Standard Test	10
Total		**64**

7. SUGGESTED LEARNING RESOURCES

S. No.	Title of Book	Author	Publication
1	Drill Manual for Fire Services of India	Govt. Of India.	---
2	Fire Fighters Skill Drill Manual	NFPA	NFPA
3	Fire Fighters Drill Manual	A.S. Khan	Agni SevaPrakashan, Shikohabad

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**
PROGRAMME CODE : **FF**
SEMESTER : **FIRST**
COURSE TITLE : **FIRE AND SAFETY LEGISLATION**
COURSE CODE : **28117**

1. RATIONALE

The Subject deals with Act, Rules and laws related with fire and safety.

2. COMPETENCY

Decision making with detail understanding of Legislation.

3. COURSE OUTCOMES

- To implement chapters 4 of Factory Act and Maharashtra Factory Rules.
- To understand the role of ILO and BOCW Acts/Rules.
- Implementation of Various Act/Rules w.r.t Fire and Safety.
- To understand the General Laws.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme												
				Theory							Practical					
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total	
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
4	2	--	6	1.5	70*#	35	30*	00	100	50	--	--	--	--	--	--

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
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Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

***Legends:** L-Lecture, **T** – Tutorial/Teacher Guided Theory Practice, **P** –Practical, **ESE** -End Semester Examination, **PA** - Progressive Assessment*
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5. TUTORIAL ASSIGNMENTS

Tutorials should be planned to enhance learning. The faculty shall decide suitable assignments minimum one per unit based on the curriculum.

6. THEORY COMPONENTS

The following topics/sub topic should be taught and assessed in order to attain the identified competencies.

Unit	Topic and contents	Hours	Marks
I	**ILO And BOCW** • Role of I.L.O in Strengthing the Standard of Safety Health and Welfare. • BOCW Act and Rule.	08	10
II	**Factories Act 1948 And Maharashtra Factories Rule** [Amended From Time to Time] • Clauses of Fire And Safety As Under Chapter IV of Factories Act-1948 • Rules of Fire And Safety As Under Chapter IV Maharashtra Factories Rules 1963	14	12
III	**Fire And Safety Legislation I** • Maharashtra Fire Prevention And Life Safety Measure's Act 2006 • Maharashtra Fire Prevention And Life Safety Measure's Rules 2009 (Amended From Time To Time) • Indian Electricity Act & Rule • Indian Boiler Act & Rule • Indian Explosive Act & Rule.	10	12
IV	**Fire And Safety Legislation II** Silent Features w.r.t Fire and Safety Under – • Gas Cylinder Rule • Calcium Carbide Rule • H.M. Transportation Rule • Static & Mobile Pressure Vessel Rule • Environment Protection Act And Rule • MSIHC Rules	12	12
V	**Storage of Petroleum Product** • Petroleum Act And Rule • Introduction of New License for Storage of Solvent from District Administration.	08	12
VI	**General Laws** • Public Liability Act & Rule • Child Labor Act & Rule • Motor Vehicle Act & Rule • Workmen Compensation Act & Rule	12	12
Total		64	70

7. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	ILO And BOCW	08	03	03	04	10
II	Factories Act 1948 And Maharashtra Factories Rule	14	04	03	05	12
III	Fire And Safety Legislation I	10	04	03	05	12
IV	Fire And Safety Legislation II	12	04	03	05	12
V	Storage of Petroleum Product	08	04	03	05	12
VI	General Laws	12	04	03	05	12
Total		**64**	**23**	**18**	**29**	**70**

Legends: *R-Remember, U-Understand, A-Apply and above (Bloom's Revised taxonomy)*

Note*:The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary from above table.*

8. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

Considering the content of syllabus it is propose to change the subject title from 'Industrial Safety Act and Laws' to 'Fire and Safety Legislation'.

9. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	Factory Act 1948	Govt Of India	---
2	Recommendation Hand Book of ILO	ILO	---
3	Compassion Act as per IPC	Govt Of India	---
4	Petroleum Act 1939	Govt Of India	---
5	Maharashtra fire prevention and life safety measures Act and Rules.	Govt Of Maharashtra	---

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **FIRST**

COURSE TITLE : **SECURITY MANAGEMENT**

COURSE CODE : **28024**

1. RATIONALE

To understand the security management with reference to Industry and Implementation / Execution of First aid to Human Life.

2. COMPETENCY

To maintain the Security of Industry and its Employees / Visitors.

3. COURSE OUTCOMES

- Understanding types of Security.
- Application of First Aid with relevant equipment's.
- To mitigate the different types of Emergency with preparedness.
- Understanding the Investigation Procedures.
- Roles and Responsibilities in case of different types of disasters.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
4	--	2	6	--	--	--	--	--	--	--	50@	25	50	25	**100**	50	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

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5. LIST OF PRACTICALS/ EXERCISES/ASSIGNMENTS/CASE STUDIES

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
1	UNDERSTANDING ROLE AND RESPONSIBILITY OF SECURITY IN EMERGENCY SITUATION (IN CASE OF FIRE & EXPLOSION)

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
2	UNDERSTANDING ROLE AND RESPONSIBILITY OF SECURITY IN EMERGENCY SITUATION (IN CASE OF TOXIC OR POISON GAS RELEASE)
3	INVESTIGATION OF AN ACCIDENT OR INCIDENT
4	DISASTER MANAGEMENT PLANNING (NATURAL DISASTER)
5	EMERGENCY PREPAREDNESS (MANMADE EMERGENCIES, STRIKE, RIOTS ETC.)
6	UNDERSTANDING CONCEPT OF P.O.S.H.
7	ORGANIZE AND CONDUCT MOCK DRILL FOR EVACUATION
8	UNDERSTANDING ETHICS OF COMMUNICATION IN SECURITY MANAGEMENT
9	DATA COLLECTION AND MAINTAINING VARIOUS RECORDS
10	INSPECTION AND CHECKING OF PROCEDURES OF HANDLING GOODS CARRYING VEHICLE
11	ROLE OF SECURITY IN FIRST-AID MANAGEMENT (PART 1)
12	ROLE OF SECURITY IN FIRST-AID MANAGEMENT (PART 2)
13	UNDERSTANDING AND CONDUCTING SAFETY INDUCTION TRAINING PROGRAMS FOR NEW EMPLOYEES AND VISITORS

6. THEORY COMPONENTS

The following topics/subtopics should be taught and assessed in order to attain the identified competencies.

Unit	Topic and contents	Hours
I	**General Security** • Knowledge about P.O.S.H. • Disaster Management • Roles and Responsibility of Security in case of Emergencies (Fire, Explosion, Toxic or Poison Gas Release) • M.S.D.S. • Emergency /Evacuation Plan & Mock drill	**08**
II	**Types of Security** • Security of person • Security of Asset • Security Data Collection & Information • Mode and Types of Communication in Security system	**10**

Unit	Topic and contents	Hours
	• Satotage& Arson Handling and Emergency Preparedness Security Plan and Scheduling (Activity)	
III	**Industrial Security** Factory Internal and External Security, Inflammable Tankers/Trucks Checking Procedure, Materials/Goods- Inward and Outward, Patrolling Duty, Communication and Liaison With Concerned Departments, Housekeeping Check, Industrial Safety Procedure, Work Permit System, Unsafe Act and Unsafe Conditions, Industrial Accidents, Security Arrangement For Factory VIP Visits.	10
IV	**First Aid** • First Aid and Ambulance aid. • Fire Incidents and Range of Casualties • Wounds and its First Aid, Bleeding and its First Aid. Shock and it's First Aid, Burns & its First Aid. • Unconsciousness. • Heat and cold Injuries and its First Aid • Fracture , Joints Injuries , and First Aid • Snake Bite, Insect Bite, Dog Bite, and its First Aid. • Chemical Disaster and Casualty Service. • Respiratory System and Artificial Respiration • Stretcher and Casualty Handling. • Triangular Bandages and their Uses, Roller Bandage, and its Use • Rescue Drill: Picking Up, Lowering and Carrying Insensible Persons. • Lines Rescue. • Resuscitation • Vital Function – Different Methods of Manual Resuscitation, their Advantages and Disadvantages	16
V	**Emergency Preparedness** Strike & Labor Unrest, Self-Protection, Maintenance of Documents, Use of Modern Electronic Devices for Bugging and Debugging, Building Security, Campus Security, Security of Vulnerable Area/Vulnerable Point (VA/VP s), Security of Installations, Security of VIP/ VIPs, Security of Operation, Office Security.	10
VI	**Investigation of an Accident and Incident** • Handling Use Care & Maintenance of Security Equipment • Roles & Responsibility of Management Towards Security • Role of Security in An Investigation of Accident /Incident	10
Total		64

7. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	First Aid to the Injured by St. John Ambulance Association.	JAMES CANTLIE	FORGOTTEN BOOKS

Sr. No.	Title of Book	Author	Publication
2	Hand Book of Industrial Fire Protection and Security.	R. CRAIG SCHROLL	CRC PRESS
3	Factory Act 1948.	GOVT OF INDIA	
4	Security Management and Services.	WG. CDR. S. M. SHUKLA	
5	Code of Practice for Hazardous Goods by NFPA.	NFPA	NFPA
6	Hand Book of Fire Protection by NFPA.	NFPA	NFPA

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **FIRST**

COURSE TITLE : **FIRE FIGHTING DRILLS**

COURSE CODE : **28025**

1. RATIONALE

Firefighting drills is a core practical subject which gives practice to use various Fire Fighting Equipment and Accessories.

2. COMPETENCY

Execution of all Fire Fighting equipment drill to save Life and Property.

3. COURSE OUTCOMES

The student will be able to

- Identify various firefighting drills.
- Select drill for proper event.
- List various movements for particular drill.
- Perform the Ladder drill and Squad drill.
- Diagnose errors in various drills.
- Read various applications of drill.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
--	--	6	6	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicalsof 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

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*@Internal Assessment, #External Assessment, *#Online Examination*

5. LIST OF PRACTICALS/ EXERCISES/ASSIGNMENTS/CASE STUDIES

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
1	Fire Service Discipline and importance of uniformity
2	Squad Drill Attention, stand at ease.
3	Samne se Tejchal and different Salutes which is applicable in fire Services
4	Fire drill crew formation and crew numbers as per drill requirements.
5	Fire Hose drill, different type of hose rolling techniques, lowering carrying of hose and lifting techniques
6	Fire Hose drill, different type of Hose laying techniques with demonstration of use of dividing and collecting breaching.
7	Performing different type of hose fitting and its uses in the fire service.
8	3 -man Hydrant Drill: Drill procedure with application of Hose and Hydrant Fittings with adding and removing one, two lengths hoses.
9	4 -man Hydrant Drill: Drill procedure with application of Hose and Hydrant Fittings: Add one length of hose, remove one length of hose.
10	Testing of ladders and use lf different type of ladders
11	4 man ladder drill and crew formation and location of crew
12	4 man ladder drill and demonstration of ladder extensions.
13	Foam drill and Equipment identification of Foam drill
14	Foam drill Crew formation and how to use foam equipment during Fire

6. MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of experiments, as well as aid to procure equipment by authorities concerned.

Sr. No.	Equipment Name with Broad Specifications
1	Water capacity 10000 lit, 100 mm Hydrant line, Hydrant post, Pump 7.5 hp x 180 lpm, Butterfly valve, Starter, NRV, PRV, Pressure gauge, Pressure switch. Fire panel, ARV
2	Hydrant post with accessories, Hose pipes 15m x 2 no's, Hose box, Hammer, Uncontrolled branch 1 no, Hose reel, Fire service inlet (Two way), Dividing Breeching, Collecting breeching, F key
3	Sprinkler module with branches, Down word, upward, side wall nozzles. Pressure gauge, Butterfly valve, Drain line with valve, ARV, different Sprinkler heads Detection system- Smoke, Heat detectors (2 Nos each), VA speaker, Control module, Monitor module Conventional panel, MCP, Audio visual display Hooter, Multi detector, Response indicator VESDA panel, Beam Detector, Addressable panel, Different auto glow signages, evacuation plan. Samples of jackets. PPE's
4	Extinguishers Water, Foam, 9 lit, DCP 4 kg, (Stored pressure & Cartridge type each), Sand bucket, CO_2 Extinguisher 4.5 kg, MS Tray, Fuel. Clean Agent and Kitchen type fire Extinguisher
5	Different foam making branches. Water monitor. Foam concentration AFFF,FFFP

7. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	Drill Manual for Fire Services	Govt. Of India.	---
2	Fire Fighters Skill Drill Manual	NFPA.	---
3	Firefighting Drill Manual	NFSC, Nagpur	---
4	Fire Fighters Drill Manual by (Agni Seva)	A.S. Khan	Prakashan, Shikohabad

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**
PROGRAMME CODE : **FF**
SEMESTER : **SECOND**
COURSE TITLE : **SECURITY ACTS & LAWS**
COURSE CODE : **28210**

1. RATIONALE

The subject deals with Act, Rules and laws related to security.

2. COMPETENCY

Understanding of Procedure's related with security legislation w.r.t designated premises.

3. COURSE OUTCOMES

- Personal Identification with respect to Security.
- Understanding Crime, its Investigations and Relatable Procedure.
- Understanding importance of intelligence.
- To keep surveillance and vigilance.
- Execution of Incident Mapping , Making Reports, Search and raids
- Understanding of crime legislation.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme											
				Theory							Practical					
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total	
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
4	2	--	6	1.5	70*#	35	30*	00	100	50	--	--	--	--	--	--

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicalsof 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

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*@Internal Assessment, #External Assessment, *#Online Examination*

5. TUTORIAL ASSIGNMENTS

Tutorials should be planned to enhance learning. The faculty shall decide suitable assignments minimum one per unit based on the curriculum.

6. THEORY COMPONENTS

The following topics/subtopics should be taught and assessed in order to attain the identified competencies.

Unit	Topic and contents	Hours	Marks
I	**Identification** • Identification of person. • Identification Parade. • Observation	08	10
II	**Crime** • Types of Crime. • Crime Investigation. • Investigator's Quality. • Interrogation. • Scientific Aids of Investigation. • Finger Prints. • Forensic Laboratory.	08	12
III	**Security Intelligence** • 3.1 Intelligence. • Counter Intelligence. • Investigating Agencies. • Espionage. • Espionage Net	08	12
IV	**Spies** • 4.1 Types of Spies. • Description of Persons- Age, Sex, Weight, and Height.	08	12
V	**Scenes** • 5.1 Scenes of Incidents-Mapping, Sketch. • Reports. • Making Reports. • Search. • Types of search. • Raids. • Raid Operation. • Raid Commander and Subordinates. • Cardons. • Surveillance. • Vigilance.	14	12
VI	**Rules, Regulations Related to Security** • 6.1 Cr. PC • IPC • Evidence • Hearsay Evidence • Evidence Act • IOS Act 1923 • Concept of Cyber Security Act & Rule	18	12
	Total	64	70

7. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Identification	08	03	03	04	10
II	Crime	08	03	03	06	12
III	Security Intelligence	08	03	03	06	12
IV	Spies	08	05	02	05	12
V	Scenes	14	03	03	06	12
VI	Rules, Regulations Related to Security	18	03	03	06	12
Total		**64**	**20**	**17**	**33**	**70**

Legends: *R-Remember, U-Understand, A-Apply and above (Bloom's Revised taxonomy)*

Note*: The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary from above table.*

8. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	Criminal Procedure Code	---	EBC
2	Indian Penel Code	---	EBC/ UNIVERSAL
3	Evidence Act	Govt. Of India	---
4	Indian Official Secret Act 1923	---	PROFESSIONAL BOOK PUBLISHERS

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **SECOND**

COURSE TITLE : **FIRE SERVICE EQUIPMENT**

COURSE CODE : **28073**

1. RATIONALE

Fire and Safety officer must have complete knowledge of various firefighting equipment and machinery in terms of working, use and Maintenance. Students shall have hands on experiences of operating this equipment's. This practice is important while using / operating these equipment's at the time of emergency.

2. COMPETENCY

Practical application, Care and Maintenance of life saving and firefighting Equipment.

3. COURSE OUTCOMES

- Execution of hose drill.
- To perform the hydrant drill and operate the hydrants.
- To know the Operations of different types of extinguishes with care and maintenance along with different test of each extinguishes.
- To operate the pump with different types of branches along with hose.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
--	--	4	4	--	--	--	--	--	--	--	50#	25	50	25	**100**	50	

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***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicalsof 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

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*@Internal Assessment, #External Assessment, *#Online Examination*

5. LIST OF PRACTICALS/ EXERCISES/ASSIGNMENTS/CASE STUDIES

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
1	Fire Service branches and its use at different locations as per fire scenario
2	Fire Service breaching inlet uses.
3	Fire tender equipments and its up keep.

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
4	Types of Fire hose and its construction
5	Wheelchair, Evacuation chair, stretchers uses.
6	Hose fittings and its uses
7	Suction hose and types of Suction hose
8	Portable pump and how to use in case of emergency.
9	Study of small gears and its use.
10	different types of Search lights and its use
11	Rescue tools - battery and hydraulic operated.
12	Foam and foam making branches
13	Fire fighting pumps - Jockey, main and standby pump

6. MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of experiments, as well as aid to procure equipment by authorities concerned.

Sr. No.	Equipment Name with Broad Specifications
1	Extension Ladder
2	Rope.
3	Breathing Apparatus Set (Carbon Fiber), Different types of masks, gloves, ear plugs, earmuffs, chemical cartridge mask, Harness, belts,
4	Fireman Axe, Ceiling Hook, Drag Hook, Fire Beater, Door Breaker, Steel shod lever, Pad Lock Remover, Persuader, Spreader, Cutter, Bending Bar, Quick Release Knife, Shears, Bolt cutter, Search light, Focusing light. Fire Proximity suit Study of hydraulically operated small gears and their use in Rescue
5	First aid box, Ambu bag, Stretcher
6	Mannequin for CPR
7	Different types of Suction noses.
8	Different types of Foam Compound
9	Foam making Branches like FB2, FB10 etc. Pick up tube
10	Inline and Multiple Jet Inductor
11	Portable Pump

7. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	Drill Manual for Fire Services of India	Govt. Of India.	---
2	Fire Fighters Skill Drill Manual	NFPA	NFPA
3	Fire Fighters Drill Manual	A.S. Khan	Agni SevaPrakashan, Shikohabad

PROGRAMME NAME : ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT

PROGRAMME CODE : FF

SEMESTER : SECOND

COURSE TITLE : RESCUE TECHNIQUE

COURSE CODE : 28074

1. RATIONALE

Fire and Safety officer must to have complete knowledge of Rescue Technique. Students shall have hands on experiences of this technique. Application of these technique will be useful to save the life in the situation of emergency.

2. COMPETENCY

Practical application of Rescue Technique, Care and Maintenance of life saving Equipment.

3. COURSE OUTCOMES

- Practical use of breathing apparatus in case of Emergency.
- Understanding Small gears and its uses.
- Application and use of first aid with relevant equipment with Resuscitation Procedures.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
--	--	4	4	--	--	--	--	--	--	--	50#	25	50	25	100	50	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
1) 30 Marks (60%) - For Practical – ESE
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*@Internal Assessment, #External Assessment, *#Online Examination*

5. LIST OF PRACTICALS/ EXERCISES/ASSIGNMENTS/CASE STUDIES

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
1	Governments Fire fighting water provision at road side (Different types of Hydrant points)
2	First aid box and its uses
3	Use of nebulizer and its uses

Sr. No.	Name of Practical/ Exercise/ Assignment/ Case Study
4	Different Priming method for water suction
5	Fire Hydrant system in the building
6	Booster pump and intermediate pumps
7	Automatic Fire Sprinkler system in the building
8	Different Passive Fire protection systems
9	Rural Fire water transportation equipments
10	High rise Water tanks and other different water provisions
11	Using of Fire Proximity Suit
12	Different types of stretcher and its uses
13	Pneumatic Rescue bags and its use
14	Demonstration of rescue operation through ladder
15	CPR and demonstration of CPR from adults to child

6. MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of experiments, as well as aid to procure equipment by authorities concerned.

Sr. No.	Equipment Name with Broad Specifications
1	Extension Ladder
2	Rope
3	Breathing Apparatus Set (Carbon Fiber), Different types of masks, gloves, ear plugs, earmuffs, chemical cartridge mask, Harness, belts,
4	Fireman Axe, Ceiling Hook, Drag Hook, Fire Beater, Door Breaker, Steel shod lever, Pad Lock Remover, Persuader, Spreader, Cutter, Bending Bar, Quick Release Knife, Shears, Bolt cutter, Search light, Focusing light. Study of hydraulically operated small gears and their use in Rescue
5	First aid box, Ambu bag, Stretcher
6	Mannequin for CPR

7. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication
1	Drill Manual for Fire Services of India	Govt. Of India.	---
2	Fire Fighters Skill Drill Manual	NFPA	NFPA
3	Fire Fighters Drill Manual	A.S. Khan	Agni SevaPrakashan, Shikohabad

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **SECOND**

COURSE TITLE : **PROJECT**

COURSE CODE : **28075**

1. RATIONALE

The main aim of the preparation of project on fire safety is to judge the knowledge gained by the students during their tenure of the fire safety programme, the transfer of learning that has taken place as well as their exposure to fire safety environment; so that many faceted development of the students can be achieved under various skills of domains such as Personal, social, professional & lifelong learning. The students will be benefited lot by this exercise of preparation of project on their fire safety experiences which will certainly add values in their attitudes such as value for health, work commitment, hardworking, honesty, problem solving, punctuality, loyalty and independent study. The Student should also make a brief presentation about the project and the salient observations and findings.

2. COMPETENCY

Students will get the knowledge of existing and proposed fire hazardous visa-vise fire and Life safety measures in the industry/Occupancy in addition to this overall safety activities will be learn/understood by the student.

3. COURSE OUTCOMES

- Carry out the fire and life safety audit.
- Trained the Employees/Public/at large.
- Implement the statutory provisions in Industry/Occupancy.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
--	--	6	6	--	--	--	--	--	--	--	50#	25	50	25	100	50	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

***(#$) or (@$)** : Under the practical ESE - 50 Marks (100%)*
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*@Internal Assessment, #External Assessment, *#Online Examination*

Candidate should be assigned Project preferably individually or if at all not possible can form a group of maximum 3 members. Every candidate must maintain the weekly progress diary and the guide should review the progress and sign the diary regularly.

Every candidate has to submit **Synopsis Report** (of pages not more than 10) and deliver Two Presentations for the completion of the Project.

First Presentation of Synopsis - to the Internal Guide tentatively during Third Week of the Academic Term.

Second Presentation on complete Project - to be given to the Internal Guide during Second Class Test schedule.

Contents of the Synopsis - It should include the following points

1. Cover Page of the Synopsis (Title of the Project, Student and Guide Details, Institute Name, Academic Year, Maharashtra State Board of Technical Education, Mumbai)
2. Index
3. Introduction
4. Need of the Project and Objectives
5. Problem Definition
6. Methodology
7. Action Plan

Evaluation of Practical-PA will be the average of two presentations, synopsis report and weekly progress diary maintained by the candidate.

There should not be any sort of typographical, diagrammatic and any other mistake/s in the final bound copy of the project report submitted by the candidate.

PROJECT REPORT CONTENTS

The Project report should essentially consists of the following details.

- COVER PAGE OF THE PROJECT
- CERTIFICATE FROM THE INSTITUTE
- ACKNOWLEDGEMENT
- TABLE OF CONTENTS
- ABSTRACT
- INTRODUCTION
- METHODOLOGY OF PROJECT
- RESULTS
- CONCLUSION AND FUTURE SCOPE
- ABOUT THE ORGANISATION / COMPANY (IN CASE OF INDUSTRY BASED PROJECTS)
- REFERENCES / BIBLIOGRAPHY

GUIDELINES FOR PREPARING THE PROJECT REPORT

Project work is a basic requirement for the award of Advance Diploma. Project should be prepared based on any one of the subjects of the Programme. The project work should be comprehensive and cover all aspects of the management of occupational health and Industrial Safety.

COVER PAGE OF THE PROJECT

The Cover Page of the Project Report must include Title of the Project, Student and Guide Details, Institute Name, Academic Year, Maharashtra State Board of Technical Education, Mumbai.

CERTIFICATE FROM THE INSTITUTE

Certification from Project Guide, HOD, Principal and final signature of External Examiner during final examination.

ACKNOWLEDGEMENT

It should appear on the third page and the report writer should acknowledge the guidance provided by the project guide. Here the author may also acknowledge other persons who might have rendered help or supplied the required data or information for completion of the project. It should be brief and crisp. Generally, one page should suffice for acknowledgement.

TABLE OF CONTENTS

It must consist column heading as Chapter No., Name of the Chapter and Page Number.

ABSTRACT

Abstract should describe the entire project work with its aim, objectives and methodology and conclusion. The abstract should be limited to one or two pages.

INTRODUCTION

Give brief description of need, significance and applications of the Project. It is recommended to limit the description to about 2 to 5 pages.

METHODOLOGY OF PROJECT

This is the most important part of the project report and forms the main body of the project report. It needs very comprehensive coverage of all aspects of safety in the plant, industrial hygiene, environmental conservation, safety in storage and transportation, etc. It will usually require about 60 to 100 pages. Write-up should include the details of following areas applicable to the topic of your project (Fire Safety Activities in the Organization).

- Occupational health, safety and environment policy of the company and its implementation
- Fire Safety organization
- Role of management in promoting fire safety and striving for continual improvement
- Fire incidents reporting and investigation system
- Case-studies (discuss at least five cases of different types of fire incidents)

- Selection and training of employees
- Fire Safety training of employees and contractor personnel
- Health and hygiene (including pre-employment and periodic medical examinations)
- Safety in transportation and training of drivers
- Plant layout
- Facilities and services
- Storage and handling of chemicals
- Built-in fire safety measures
- Fire prevention and fire-fighting & Life safety measures.
- Housekeeping
- Personal protective equipment (PPE)
- Various safety procedures (e.g., work permit system, hot job work, etc.)
- Preventive maintenance
- Safe operating procedures (SOPs) and operating manuals
- Safety manual, material safety data sheets (MSDS), Tramcards, etc.
- Fire safety audit / loss prevention assessment.

Relevant information and data presented in the form of tables and graphs (e.g., incident rates including fire statistics), incident analysis, work permit form, incident report form, medical attention form, block diagrams, plant layout, relevant photographs, MSDS, etc., which are required to supplement project report, should be included at the end as annexures with appropriate references in the main text of the project report. If an annexure is of more than one page, it should be provided with page numbering. Page numbering should be done individually for each annexure.

RESULT

It should content the experimentation results of the project.

CONCLUSION AND FUTURE SCOPE

Based on the project work, draw inferences, and mention future scope. The future scope should be specific, relevant and practically implementable.

ABOUT THE ORGANISATION / COMPANY (IN CASE OF INDUSTRY BASED PROJECTS)

Should mention organizational structure, product / services (limit 1 to 2 pages).

REFERENCES / BIBLIOGRAPHY

Mentions books, research papers, web sites referred in the report and in this section.

PROJECT REPORT FORMAT

Paper Size	-	A4
Printing	-	Only on one side of the sheet
Line Spacing of Paragraph	-	1 ½
Font Face	-	Times New Roman
Font Size	-	12 for Normal text, 14 for Sub-headings and 16 for Headings
No of Project Report copies	-	Two
Binding	-	Hard bound copies with Black cover (Golden Embossing)

PROGRAMME NAME : **ADVANCED DIPLOMA IN INDUSTRIAL SAFETY AND SECURITY MANAGEMENT**

PROGRAMME CODE : **FF**

SEMESTER : **SECOND**

COURSE TITLE : **INDUATRIAL (OCCUPANCY) TRAINING**

COURSE CODE : **28076**

1. RATIONALE

Industrial (Occupancy) training course is introduced to Advanced Diploma In Industrial Safety And Security Management programme with the aim to imbibe the industry/Occupancy culture and professional practices in the students before they enter into world of work. By exposing and interacting with the real life industrial/Occupancy training, student will understand the actual working and best practices adopted in industry/Occupancy along with the requirements of their chosen field of training.

The Industrial/Occupancy training needs such as the soft skills, life skills and hands-on practices are intended to be inculcated in the students through this training. This short association with the Industry/Occupancy will be instrumental in orienting the students in transforming them to be Industry/Occupancy ready after completion of diploma programme. Industrial/Occupancy Visits are mandatory part of Industrial/Occupancy training.

2. COMPETENCY

This course is intended to develop the following competencies.

- Soft Skills i.e. Communication, Presentation and others.
- Life Skills i.e. Time management, Fire, Safety, Innovation, Entrepreneurship, Team building and others
- Hands-on Practices i.e. operating the firefighting system, Care & Maintenance of firefighting system, Shop floor Implementation and Quality Assurance aspects etc.

3. COURSE OUTCOMES

The Industrial training/Visit's is intended to acquire the competencies as mentioned above to supplement those attained through several courses up to second/fourth semester of the program.

- Communicate effectively (verbal as well as written) to execute the work.
- Prepare the industry report of the executed work along with the Fire Audit report.
- Exercise time management and Fire & Life safety in the work environment.
- Work in teams for successful completion of projects assuring quality with optimum level of Safety.
- Work on case studies/live projects related with the fire and safety.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit	Examination Scheme													
				Theory							Practical						
L	T	P	(L+T+P)	Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
-	-	10	10	--	--	--	--	--	--	--	100#	50	100	50	**200**	100	

(*): Under the theory PA, 30 marks is the average of 2 class tests of 30 marks each to be taken during the semester for the assessment.

(#$) or (@$) : Under the practical ESE - 50 Marks (100%)
1) 30 Marks (60%) - For Practical – ESE
2) 20 Marks (40%) - Average of 2 Skill tests / Practicalsof 30 marks each is to be conducted during the semester, and then should be converted to 20 marks.

Note: If student Remaining absent in PR-ESE shall be considered as ABSENT in PR-ESE

***Legends: L**-Lecture, **T** – Tutorial/Teacher Guided Theory Practice, **P** –Practical, **ESE** -End Semester Examination, **PA** - Progressive Assessment*

*@Internal Assessment, #External Assessment, *#Online Examination*

5. GENERAL GUIDELINES FOR INDUSTRIAL/OCCUPANCY VISIT'S

Any Occupancy can be Government/Public limited or private family enterprises.

- **Duration of Industrial/Occupancy visit's :**10 hrs / week in Final Semester as per the credits of the programme.
- **Training Area:** Students should be trained in anyOccupancy/ Occupancies.
- **Skill Knowledge Partner** :Any Occupancy to be identified by the Institute as per their programme.

6. ROLE OF PARENT DEPARTMENT OF THE INSTITUTE

- Collecting information about occupancy available for training along with capacity.
- Student and mentor allocation as per the slots available for occupancy training/visit's (Desirable mentor- student ratio is 1:15).
- Communication with occupancy available for training visit's along with capacity and its confirmation.
- Obtaining consent letter from parents / guardian if required.
- Student enrollment for occupancy training /visit's.
- Issue letter to an occupancy for the training/visit's along with details of students and mentors.
- Mentors to carry out progressive assessment of the students during the occupancy training /visit's.
- End of training/visit's assessment shall carry out by the mentor along with Occupancy expert as external examiner.

Suggestions

a) Departments can take help of alumni or present students (if they or their parents or relatives have some contact in different occupancies for securing placement.

b) The students would normally be placed as per their choices, in case of more demand for a particular occupancy students would be allocated place based on their relative merit. However, if some students have arranged training placement in some with the help of their parents/relatives etc. then they will be given preference for placement in those occupancies.

c) Principal/ HOD/ Faculty should address students about safety norms, rules and discipline to be maintained in the occupancy during the training before relieving students for training.

d) The faculty member during the visit to occupancy will check the progress of the student in the training/Visit's his/ her attendance, discipline and project report preparation.

7. EXPECTATIONS FROM AN OCCUPANCY

Helping institute in developing the following competencies among students.

- Soft Skills i.e. Communication, Presentation and others.
- Life Skills i.e. Time management, Fire, Safety, Innovation, Entrepreneurship, Team building and others
- Hands-on Practices i.e. operating the firefighting system, Care & Maintenance of firefighting system, Shop floor Implementation and Quality Assurance aspects etc.

8. ROLES AND RESPONSIBILITIES OF THE STUDENTS

Following should be informed to students in the letter deputing them for the training/Visit, an undertaking for this should also be taken from them

- Students would interact with the mentor to suggest choices for suitable Occupancy. If students have any contact in an Occupancy (through their parents, relatives or friends) then same may be utilized for securing placement for themselves and their peers.
- Students have to fill the forms duly signed by authorities along with training letter and submit it to training officer in an Occupancy on the first day of training. Student should also carry with him/her the Identity card issued by institute during training period.
- He/she will have to get all the necessary information from the training officer regarding schedule of the training, rules and regulations of an Occupancy and safety procedures to be followed. Student is expected to observe these rules, regulations, procedures.
- Students should know that if they break any rule of an occupancy or do not follow the discipline then occupancy can terminate the training and sent back the students.
- It is the responsibility of the student to collect information from Occupancy about Fire hazardous present in the Occupancy along with the existing and propose fire Prevention & Protection measures and Life Safety measures.
- During the training period students have to keep record of all the useful information in Log book
- Maintain the diary as provided and get it signed from mentor as well as an Occupancy training in-charge.
- In case they face any major problem in Occupancy such as an accident or any disciplinary issue then they should immediately report the same to the institute.
- Prepare final report about the training/visit for submitting to the department at the time of viva-voce and get it signed from mentor as well as an Occupancy training in-charge.

9. THE INDUSTRIAL TRAINING/VISITS SHALL INCLUDE MINIMUM FOUR OF THE FOLLOWING OCCUPANCY

Sr.No.	Type	Occupancy
1	Group A	Residential
2	Group B	Educational
3	Group C	Institutional
4	Group D	Assembly
5	Group E	Business
6	Group F	Mercantile
7	Group G	Industrial

Sr.No.	Type	Occupancy
8	Group H	Storage
9	Group J	Hazardous

10. MARKS DISTRIBUTION FOR EACH OCCUPANCY TRAINING/VISIT

Sr.No.		Description	Marks
A	i.	To study the Activity/Activities of the Occupancy. (Raw Materials, Intermediate products, Finished goods and process if any) etc.	10
	ii.	To study the existing fire hazardous of the occupancy	05
	iii.	To study the life safety measures of the occupancy.	15
	iv.	To study theexisting fire prevention and fire protection measures of the occupancy.	15
	v.	Any changes observed in the occupancy other than the sanctioned plan.	05
	vi.	Any other observation in the occupancy related with fire prevention, fire protection, and life safety measures.	05
B	i.	To find out the deficiency observed in the occupancy related with fire prevention, fire protection, and life safety measures.	10
C	i.	To carry out the Fire Audit of the Occupancy.	10
D	i.	Other observation related with Fire and Safety Measures.	05
E	i.	Report Writing	20
F		**Total Marks**	**100**

Note :-

A. Report shall include all the points as mentioned in the point number 10 of each visited occupancy.

B. There shall be one report of all visited occupancies.

C. Point wise marks shall be given as mentioned in the 'Marks' column of point no.10.

11. FORMAT FOR TRAINING /VISIT REPORT

Following is the suggestive format for the training/Visit report, actual format may differ slightly depending upon the nature of Occupancy/Occupanies.Though the student shall do the minimum four visit's of an any Occupancies , However he or she shall write a single report of all the visit's which may contain the following points.

- Title page
- Certificate
- Abstract
- Acknowledgement
- Content Page

Sr.No.	Chapter No.	Content
1	Chapter 1	To study the Activity/Activities of the Occupancy. (Raw Materials, Intermediate products, Finished goods and process if any) etc.

Sr.No.	Chapter No.	Content
2	Chapter 2	To study the existing fire hazardous of the occupancy
3	Chapter 3	To study the life safety measures of the occupancy.
4	Chapter 4	To study theexisting fire prevention and fire protection measures of the occupancy.
5	Chapter 5	Any changes observed in the occupancy other than the sanctioned plan.
6	Chapter 6	Any other observation in the occupancy related with fire prevention, fire protection, and life safety measures.
7	Chapter 7	To find out the deficiency observed in the occupancy related with fire prevention, fire protection, and life safety measures.
8	Chapter 8	Fire Audit report of the Occupancy.
9	Chapter 9	Other observation related with Fire and Safety Measures.
10	Chapter 10	Special/challenging experiences encountered during training if any (may include students liking & disliking of work places)
11	Chapter 11	Recommendations to the occupancies.

- **REFERENCES /BIBLIOGRAPHY**

12. SUGGESTED LEARNING STRATEGIES

Students should visit the website of the Respective/Occupancy where they are undergoing training to collect information about products, processes, capacity, number of employees, turnover etc. They should also refer the handbooks of Fire (Fire Manual) and the major machines and operation, testing, quality control and standard operating procedures and practices used in the industry. Students may also visit websites related to other similar occupancies as their learning resource.

13. HOURS DISTRIBUTION

As per the teaching and examination scheme, total 10 hrs/week (160 hrs/semester) is distributed for the occupancy training. These allotted hours shall be preferably equally distributed for the each occupancy selected by the students.

EVALUATION SHEET FOR PA OF INDUSTRIAL TRAINING

Sr. No.	Enrollment Number	Name of Student	Marks by Mentor & Industry Supervisor jointly	Marks by Industry Supervisor	Marks by Mentor Faculty	Total Marks
			Out of 40 (A)	Out of 30 (B)	Out of 30 (C)	Out of 100 (A+B+C)

DISTRIBUTION OF END-SEMESTER-EXAMINATION (ESE) MARKS OF INDUSTRIAL TRAINING

Marks for Industrial Training Report	Marks for Seminar/ Presentation	Marks for Oral/Viva-voce	Total ESE Marks
25	25	50	100

Seminar /Presentation and oral/viva-voce marks shall be allotted in the following manner.

Distribution of marks for	Preparation and presentations	Knowledge	Confidence	Appearance	Overall
Seminar/ Presentation(25)	5	5	5	5	5
Oral/Viva-voce(50)	15	15	10	05	05