

# Schemes and Syllabus

(For academic session 2025-26 onwards)

## **B. Voc. in Fire and Safety**



Atal Shiksha Nagar (Kalujhanda), P.O.  
Mandhala, Village- Nanakpura,  
Pinjore-Nalagarh highway, District- Solan,  
Himachal Pradesh- 174103

[www.iecuniversity.com](http://www.iecuniversity.com)

## Table of Content

Section	Content	Page no.
1	Program Outcomes and Program Specific Outcomes	3
2	Semester wise Scheme	5

# SECTION 1

## Program Outcomes and Program Specific Outcomes

### Program Outcomes

**PO1:** Demonstrate fire prevention practices, per NFPA 1021 guidelines.

**PO2:** Demonstrate knowledge of the financial processes associated with the fire service.

**PO3:** Demonstrate and apply fire-ground operations management, to include applicable NFPA standards and guidelines.

**PO4:** Demonstrate knowledge of fire service organization and management.

**PO5:** Demonstrate knowledge of an effective emergency management program to include applicable NFPA standards and guidelines.

**PO6:** Demonstrate knowledge of basic fire protection engineering concepts, fire protection systems evaluation and design, as it relates to risk reduction.

**PO7:** Demonstrate fundamental knowledge of the functions of planning, organizing, directing and controlling as applicable to leadership in fire and industrial safety.

**PO7:** Demonstrate fundamental knowledge of the local, state and national standards appropriate to fire safety.

**PO8:** Demonstrate fundamental knowledge of human resources and safety management as it relates to the work place.

**PO9:** Demonstrate written and oral communication skills, applicable to fire and industrial safety.

## **Programme Specific Outcomes**

### **PSO 1: Fire Science and Engineering Application**

Graduates will be able to apply principles of fire dynamics, combustion science, and thermodynamics to analyze, prevent, and mitigate fire hazards in industrial, commercial, and residential environments.

### **PSO 2: Risk Assessment and Safety Management**

Identify, evaluate, and control risks using safety audits, hazard analysis (such as HAZOP, FMEA), and implement Occupational Health and Safety (OHS) practices in compliance with national and international safety standards.

### **PSO 3: Emergency Response and Disaster Management**

Demonstrate the ability to plan, coordinate, and execute emergency response operations, including fire suppression, rescue missions, and disaster preparedness and recovery programs.

### **PSO 4: Regulatory and Legal Compliance**

Understand and apply relevant safety regulations, codes (such as NFPA, OSHA, Factories Act, etc.), and legal frameworks governing fire safety and occupational health in various industries.

### **PSO 5: Safety Equipment and System Design**

Design, install, and maintain fire detection, alarm, and suppression systems, as well as personal protective equipment (PPE), ensuring proper use of safety technologies.

### **PSO 6: Professional Ethics and Communication**

Demonstrate ethical responsibility, teamwork, and effective communication in managing safety operations and training personnel for hazard awareness and compliance.

## SECTION 2

### Semester wise Scheme

#### First Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-101	Basics of Computer	4	-	-	4	4	40	60	100
B. Voc. FS -102	Physical training and Drill- I	4	-	-	4	4	40	60	100
B. Voc. FS -103	Fundamental of Fire and Safety	4	-	-	4	4	40	60	100
B. Voc. FS-104	OJT-I (On Job Training NSQF Level-4)	-	-	36	36	18	500		500
	TOTAL	12	-	36	48	30			800

#### Second Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-201	Professional Communication	4	-	-	4	4	40	60	100
B. Voc. FS-202	Fire Protection System	4	-	-	4	4	40	60	100
B. Voc. FS-203	Manual & Portable Firefighting Equipment	4	-	-	4	4	40	60	100
B. Voc. FS-204	OJT-II (On Job Training NSQF Level-5)	-	-	36	36	18	500		500
	TOTAL	12	-	36	48	30			800

### Third Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-301	Environmental Studies	4	-	-	4	4	40	60	100
B. Voc. FS-302	Physical training and Drill	4	-	-	4	4	40	60	100
B. Voc. FS-303	Rescue Techniques & First Aid	4	-	-	4	4	40	60	100
B. Voc. FS-304	OJT-III (On Job Training NSQF Level-6)	-	-	36	36	18	500		500
	TOTAL	12	-	36	48	30			800

### Fourth Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-401	Human Values & Ethics	4	-	-	4	4	40	60	100
B. Voc. FS-402	Manual and Portable Fire fighting Equipments	4	-	-	4	4	40	60	100
B. Voc. FS-403	Fire Fighting Operations	4	-	-	4	4	40	60	100
B. Voc. FS-404	OJT-IV (On Job Training NSQF Level-6)	-	-	36	36	18	500		500
	TOTAL	12	-	36	48	30			800

### Fifth Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-501	Disaster Management	4	-	-	4	4	40	60	100
B. Voc. FS-502	Entrepreneurship Development	4	-	-	4	4	40	60	100
B. Voc. FS-503	Safety and Oil gas Industries	4	-	-	4	4	40	60	100
B. Voc. FS-504	OJT-V (On Job Training NSQF Level-7)	-	-	36	36	18	500		500
	<b>TOTAL</b>	<b>12</b>	<b>-</b>	<b>36</b>	<b>48</b>	<b>30</b>			<b>800</b>

### Sixth Semester

Course Code	Course Title	L	T	P	CH	CP	Int. A	ESE	Total
B. Voc. FS-601	Current Affairs	4	-	-	4	4	40	60	100
B. Voc. FS-602	Fire Protection Systems	4	-	-	4	4	40	60	100
B. Voc. FS-603	Fire Fighting Operations	4	-	-	4	4	40	60	100
B. Voc. FS-604	OJT-VI (On Job Training NSQF Level-7)	-	-	36	36	18	500		500
	<b>TOTAL</b>	<b>12</b>	<b>-</b>	<b>36</b>	<b>48</b>	<b>30</b>			<b>800</b>

**Assessment Criteria (100 Marks Per Subject)**  
**(For General Components)**

<b>S. No.</b>	<b>Components</b>	<b>Maximum Marks</b>
1	Assignment-1	20
2	Assignment-2	20
3	ESE	60

**Assessment Criteria (500 Marks) for OJT**  
**(For Skill Component)**

<b>S. No.</b>	<b>Components</b>	<b>Maximum Marks</b>
1	Attendance	50
2	General Behaviour & Discipline	50
3	Technical Skill	200
5	Presentation Skill	200