

# **SUBBALAKSHMI LAKSHMIPATHY COLLEGE OF SCIENCE**

(An Autonomous Institution,

Affiliated to Madurai Kamaraj University &

Re-Accredited with B Grade by NAAC)

T.V.R. NAGAR, ARUPPUKOTTAI ROAD, MADURAI-22



## **Program Outcomes, Program Specific Outcomes & Course Outcomes**

### **B.Sc Fire and Industrial Safety**

(To be followed for the batch 2018 – 2021

from Semester I to VI from the academic Year 2018 -19)

# **Department of Fire and Industrial Safety**

## **SUBBALAKSHMI LAKSHMIPATHY COLLEGE OF SCIENCE**

An Autonomous Institution

T.V.R. NAGAR, MADURAI – 22

### **B.Sc Fire and Industrial Safety**

Programme Code : FS 1061

---

#### **ANNEXURE – I**

#### **REGULATIONS OF THE COURSE**

**SYLLABUS TO BE FOLLOWED FOR STUDENTS THOSE WHO JOINED IN  
THE ACADEMIC YEAR 2018-2019 (BATCH : 2018 - 2021)**

##### **1. Programme Outcomes**

The Programme Outcomes of the B.Sc Fire and Industrial Safety degree are

- i. Understands the need for safety in various Industrial sectors.
- ii. Complete knowledge about safety issues.
- iii. Capable of handling various challenges in Industry regarding safety.
- iv. Create and develop innovations in safety.

##### **2. Programme Specific Outcomes**

The Programme Specific Outcomes of the B.Sc Fire and Industrial Safety degree are

- i. Job opportunities in various Industries as a safety officer.
- ii. Can become a safety Engineer and safety auditor.
- iii. Implement rules and regulations in Industries.
- iv. Create Awareness among workers and public.

### I B.Sc Fire and Industrial Safety

<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>: 18UH101</b>	<b>Subject</b>	<b>: Hindi –I</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: I</b>	<b>Credits</b>	<b>: 3</b>

v. **Course Outcomes:**

- vi. To encourage the students to study the National language.
- vii. To inculcate writing habit and to develop effective writing skills.
- viii. To make the students to learn and to be familiar with basic grammar topics, as error free communication has become mandatory.
- ix. To prepare them to be comfortable with verbal ability.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: English –I</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: II</b>	<b>Credits</b>	<b>: 3</b>

**Course Outcomes:**

- To encourage the students to involve actively in participative learning of English and to enable them acquire communication skills.
- To inculcate writing habit and to develop effective writing skills.
- To make them write official letters to officers and editors effectively.
- To make the students to learn and to be familiar with basic grammar topics, as error free communication has become mandatory.
- To prepare them to be comfortable with verbal ability.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety Management System</b>

<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To understand the basic concepts of safety
- To enable the students to learn about various functions and activities of safety department.

**COURSE OUTCOMES:**

- Students can conduct safety audit and write audit reports effectively in Safety Auditing.
- They have a complete knowledge about sources of information for safety promotion and training. .

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Principles of Electrical and Electronics</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 04</b>

**COURSE OBJECTIVES:**

- To impart the basic knowledge about the Electric and Magnetic circuits.
- To inculcate the understanding about the AC fundamentals.
- To understand the working of various Electrical Machines.

**COURSE OUTCOMES:**

- Knows about various measuring instruments and house wiring.-
- He can explain the basic theorems used in Electrical circuits and the different components and function of electrical machines.
- He can explain the fundamentals of semiconductor and applications.
- Explains the principles of digital electronics
- To impart knowledge of communication.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Principles of Mechanical and Civil Engineering</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 04</b>

**COURSE OBJECTIVE :**

- To develop capacity to predict the effect of force and motion in the course of carrying out the design functions of engineering.

**COURSE OUTCOMES:**

- Capable of handling Mechanical & Civil Engineering equipments and to identify hazards to find out the solution for reducing the danger in workplace .

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Probability and Statistics</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 05</b>

- **Objective** To provide basic knowledge of probability & Statistics and application of real Life situations.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: I</b>	<b>No. of Hours</b>	<b>: 2</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Value Education</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 02</b>

**I B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>No.of Hours</b>	<b>: 2</b>
-----------------	------------	--------------------	------------

<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Physical Education</b>
<b>Internal Marks</b>	<b>: -----</b>	<b>External Marks</b>	<b>: 100</b>
<b>Part</b>	<b>:V [Extension activity]</b>	<b>Credits</b>	<b>:1</b>

**Course Outcomes:**

- The Physical Education program will allow the students to participate in developmentally appropriate activities.
- The Physical Education program will develop and reinforce cooperative behavior.
- The Physical Education program will teach the students to establish lifelong fitness goals.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: II</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>: 18UH102</b>	<b>Subject</b>	<b>: Hindi-II</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: I</b>	<b>Credits</b>	<b>: 03</b>

- **Course Outcomes:**
- To make the students to learn some advanced grammar topics.
- To improve the student's communication ability.
- To make them write official letters.
- To train the students to manage the language beyond our state, while they work in hindi speaking places.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: II</b>	<b>No.of Hours</b>	<b>: 04</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: English –II</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: II</b>	<b>Credits</b>	<b>: 03</b>

**Course Outcomes:**

- To mould the students in sharpening their skills and improving their ability to self-learn.
- To enable the students to acquire the ability to speak effectively in English in real life situations.
- To orient them about sending Electronic Mails.
- To prepare them to be comfortable with verbal ability.

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: II</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety in Chemical Industry</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 03</b>

#### **COURSE OBJECTIVES:**

- To understand the fundamentals of Quantitative risk analysis.
- To know the procedure for risk assessment.
- To gain knowledge on various tools on consequence analysis

#### **COURSE OUTCOMES:**

- Can carry out frequency estimation using event tree analysis.
- He can estimate the consequences of BLEVE and Fire Ball.
- Check the risk for the given fire or dispersion scenario.

<b>Semester</b>	<b>: II</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Fundamentals of Fire Technology</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

### **COURSE OBJECTIVES:**

- To provide an in depth knowledge about the science of fire
- To understand the causes and effects of fire.
- To know the various fire prevention systems and protective equipments
- To understand the science of explosion and its prevention techniques
- To understand the various fire prevention techniques to be followed in a building

### **COURSE OUTCOMES:**

- know s the various fire prevention systems and protective equipments
- understands the science of explosion and its prevention techniques
- understands the various fire prevention techniques to be followed in a building

<b>Semester</b>	<b>: II</b>	<b>No. of Hours</b>	<b>: 06</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Work Study and Ergonomics</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 05</b>

### **COURSE OBJECTIVES:**

- Studying the work procedure and understanding the relationships between the workers and working environments
- To study the applications of ergonomic principles and physiology of workers
- To know the concepts of personal protective equipment and its usages
- To create the knowledge in process and equipment design in safety aspects

### **COURSE OUTCOMES:**



- understands the work procedure and the relationships between the workers and working environments
- Knowledge about the applications of ergonomic principles and physiology of workers
- Knows the concepts of personal protective equipment and its usages

<b>I B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: II</b>	<b>No.of Hours</b>	<b>: 02</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Environmental Studies</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 02</b>

**Course Outcomes:**

This subject will enable the students to

- Understand the terms of ecological, economic, social, aesthetic and educational factors.
- Have opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: III</b>	<b>No. of Hours</b>	<b>: 2</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Campus Recruitment Training English I</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

**Course Outcomes:**

- To encourage the students to involve actively in participative learning of English and to enable them acquire communication skills.
- To enable the students prepare themselves as professionals.
- To help them gain confidence in facing the Competitive World.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: III</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Fire Tender and Active Fire protection System</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To provide a complete knowledge about the various Tenders and operations and the different fire fighting system used in Industry.
- To provide knowledge about Active & Passive fire fighting equipments.

**COURSE OUTCOMES:**

- Can be familiar with the different Tenders and their operations
- Can be capable of handling the Active and Passive fire fighting equipments.

<b>Semester</b>	<b>: III</b>	<b>No.of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Construction Safety</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To know causes of accidents related to construction activities and human factors associated with this accident.
- To understand the construction regulations and quality assurance in construction.
- To impart knowledge about hazards of construction and their prevention methods.

**COURSE OUTCOMES:**

- Identify the problems impeding safety in construction industries.
- Recognize the types and causes of accidents and design aids for safe construction.
- Recognize the hazards during construction of power plant, road works ,high rise buildings constructions

<b>Semester</b>	<b>: III</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Electrical Safety</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 3</b>

**COURSE OBJECTIVES:**

- To provide knowledge on basics of electrical fire and statutory requirements for electrical safety.
- To know the causes of accidents and various protection systems in Industries from electrical hazards.
- To understand the various hazardous zones and applicable fire proof electrical devices

**COURSE OUTCOMES:**

- Recognize different hazardous zones in Industries.
- Understand the operation of various protection systems from electrical hazards.
- Select the suitable electrical equipment in different hazardous zone

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: III</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Quality Concepts</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 5</b>

**COURSE OBJECTIVES:**

- To know about the different quality standards followed in Industries and their procedure.
- To know the basic quality concept and their techniques.

**COURSE OUTCOMES:**

- can be able to differentiate different quality standards and can conduct quality auditing by knowing the concept in depth.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: III</b>	<b>No. of Hours</b>	<b>: 2</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Basics of Industrial Safety(Non Major Elective-I)</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

**COURSE OBJECTIVES:**

- To make the students understand the various causes and the types of fire and their prevention techniques.
- To know about the different fire fighting and their Industrial standards.

**COURSE OUTCOMES:**

- Can be able to differentiate the different classes of fire.
- Can extinguish the fire by handling the different firefighting equipment.
- He knows about the different equipment used in Industry during firefighting.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: IV</b>	<b>No. of Hours</b>	<b>: 2</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Campus Recruitment Training English-II</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

**Course Outcomes:**

- To encourage the students to involve actively in participative learning of English and to enable them acquire communication skills.
- To enable the students prepare themselves as professionals.
- To help them gain confidence in facing the Competitive World.
- To inculcate Social Etiquette.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: IV</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety Legislations and Standards</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 5</b>

**COURSE OBJECTIVES:**

- To provide exposure to the students about safety and health provisions related to hazardous processes as laid out in Factories act 1948.
- To help students to learn about Environment act 1948 and rules framed under the act.
- To provide wide exposure to the students about various legislations applicable to an industrial unit.

**COURSE OUTCOMES:**

- Understand the important legislations related to Health, Safety and Environment.
- Implement the health and welfare provisions given in factories act.
- Comply with the statutory requirements for an Industry on registration, license and its renewal.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: IV</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Food Hygiene and Sanitation</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 3</b>

**COURSE OBJECTIVES:**

- To know about the different quality of food & safety standards used in different countries.
- To understand about the nature of different food and their cooking and serving techniques and methods.

**COURSE OUTCOMES:**

- Can become familiar with different standards followed in food safety all over the world.
- Can be able to inspect and check the quality and nature of food and their proper disposal methods.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: IV</b>	<b>No. of Hours</b>	<b>: 5</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Occupational Health and Hygiene</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To understand the basic knowledge on anatomy of human organs and its basic functions.
- To enable students to compare the hazards with the permissible levels.
- To enable the students know about types of hazards arising out of physical, chemical and biological agents.

**COURSE OUTCOMES:**

- Understand the functions and activities of occupational health services.
- Identify various types of hazards arising out of Physical, Chemical and Biological agents in a process.
- Recognize notifiable occupational diseases arising out of occupation and suggest methods for the prevention of such diseases.

<b>II B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: IV</b>	<b>No. of Hours</b>	<b>: 5</b>

<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>:</b>	<b>Transport Safety</b>
<b>Internal Marks</b>	<b>:</b>	<b>External Marks</b>	<b>:</b>	<b>75</b>
<b>Part</b>	<b>:</b>	<b>Credits</b>	<b>:</b>	<b>3</b>

**COURSE OBJECTIVES:**

- To provide the students about the various activities/steps to be followed in safe handling the hazardous goods transportation from one location to another location.
- To educate the reasons for the road accident and the roles and responsibilities of a safe Driver and the training needs of the driver.
- To inculcate the culture of safe driving and fuel conservation along with knowing of basic traffic symbols followed throughout the highways

**COURSE OUTCOMES:**

- Recognize various safety activities undertaken in transporting of hazardous goods
- Understand the various symbols which are specific to the road safety and able to reduce the accidents occurred in the roads.
- Apply for the safe transportation of hazardous goods, creating TREM card and safe loading and unloading procedure.

<b>II B.Sc Fire and Industrial Safety</b>				
<b>Semester</b>	<b>:</b>	<b>No. of Hours</b>	<b>:</b>	<b>5</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>:</b>	<b>Transport Safety</b>
<b>Internal Marks</b>	<b>:</b>	<b>External Marks</b>	<b>:</b>	<b>75</b>
<b>Part</b>	<b>:</b>	<b>Credits</b>	<b>:</b>	<b>3</b>

**COURSE OBJECTIVES:**

- To provide the students about the various activities/steps to be followed in safe handling the hazardous goods transportation from one location to another location.
- To educate the reasons for the road accident and the roles and responsibilities of a safe Driver and the training needs of the driver.
- To inculcate the culture of safe driving and fuel conservation along with knowing of basic traffic symbols followed throughout the highways

**COURSE OUTCOMES:**

- Recognize various safety activities undertaken in transporting of hazardous goods
- Understand the various symbols which are specific to the road safety and able to reduce the accidents occurred in the roads.

- Apply for the safe transportation of hazardous goods, creating TREM card and safe loading and unloading procedure.

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 5</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Hazard Identification and Risk Analysis</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

#### **COURSE OBJECTIVES:**

- To provide knowledge on Risk Assessment techniques like JSA, HAZOP, ETA, and the different accident Investigation procedures.
- To provide procedural knowledge on Reliability Engineering

#### **COURSE OUTCOMES:**

- Understand the importance of HAZOP in process industries
- Understand procedure for carrying out the different Risk Assessment techniques & the Accident Investigation procedures.
- Conduct HAZOP for the real time scenario

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety in Engineering Industry</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>



**COURSE OBJECTIVES:**

- To provide in depth knowledge in Principles of Environmental safety and its applications in various fields.
- To provide the knowledge of air and water pollution and their control.
- To expose the students to the basics in hazardous waste management.

**COURSE OUTCOMES:**

- Illustrate and familiarize the basic concepts and scope of engineering safety.
- Understand the standards of professional conduct that are published by professional safety organizations and certification bodies.
- Illustrate the importance of safety of employees while working with machineries

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety inspection and Audit</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To develop and make them to become a successful safety Auditor by imparting complete knowledge about the Inspection and Audit techniques and procedure.
- To provide knowledge about recent advancement in Auditing procedures and their standards.

**COURSE OUTCOMES:**

- Can become a Safety Auditor and can Inspect different Industries.
- Can give advice to Industries regarding implementation of ISO standards nad their guidelines to be followed.

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 6</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Safety in Mines</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 5</b>

### **COURSE OBJECTIVES:**

- To provide in depth knowledge on Safety in mines of various types.
- To study, know and understand about the types of mines and various risk involved in the mining operations.
- To get exposed to various types of accidents happened in mines and how to manage during accidents.

### **COURSE OUTCOMES:**

- Familiarize with the concept of safety aspects in the mining industries.
- Understand the various types of mining activities like open case mines, underground mines and tunneling.
- Implement the techniques like risk assessment, Disaster management and emergency preparedness with the proper knowledge on accident prevention.

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 4</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Disaster Management and APELL</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

### **COURSE OBJECTIVES:**

- To impart knowledge on disasters, emergency control and policy initiatives for disaster management
- To impart knowledge on the environmental damages and its protective measures
- To impart knowledge on designing emergency control systems in case of disaster

### **COURSE OUTCOMES:**

- Understand the things which are to be done during emergency condition
- Understand damages caused during disaster and its future impacts.
- Know the root causes for the disaster

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 4</b>

<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Campus Recruitment Training English -II</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

**Course Outcomes:**

- To encourage the students to involve actively in participative learning of English and to enable them acquire communication skills.
- To enable the students prepare themselves as professionals.
- To help them gain confidence in facing the Competitive World.
- To inculcate Social Etiquette.
- To be comfortable participating in GD's and facing Interviews.

<b>III B.Sc Fire and Industrial Safety</b>			
<b>Semester</b>	<b>: V</b>	<b>No. of Hours</b>	<b>: 5</b>
<b>Subject code</b>	<b>:</b>	<b>Subject</b>	<b>: Search and Rescue Techniques &amp;Paramedics</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: III</b>	<b>Credits</b>	<b>: 4</b>

**COURSE OBJECTIVES:**

- To make the students understand the various rescue procedures and techniques used during the time of emergency.
- To make them to have a clear idea about handling of different monitoring equipments and First-aid to be given for the affected victim.

**COURSE OUTCOMES:**

- Can be capable of handling emergency situations efficiently by using different rescue procedures and the type of First-aid that can be provided before medical treatment.
- He can also learn new technologies involved in rescuing a person affected by an accident that causes injury or death to the humans.