

# **SUBBALAKSHMI LAKSHMIPATHY COLLEGE OF SCIENCE**

An Autonomous Institution

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



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

**B.Sc Fire and Industrial Safety**

**BATCH: 2017 -2020**

**Department of Fire and Industrial Safety**

**Programme Code :FS1061**

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

**Programme Code : FS1061**

**ACADEMIC YEAR 2017-2018**

**(BATCH 2017 - 2020)**

---

## **Programme Outcomes (PO)**

### **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.

## **Programme Specific Outcomes (PSO)**

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

# **Course Outcomes (CO)**

## **SEMESTER - I**

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS103</b>	<b>Course Name</b>	<b>: Safety Management Systems</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 Outcomes:**

This course will enable the students to

- 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.

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS104</b>	<b>Course Name</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>: 3</b>

#### **Course Outcomes:**

This course will enable the students to

- 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.

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS105</b>	<b>Course Name</b>	<b>: Basics of Mechanics</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 Outcomes:**

This course will enable the students to

- Develop capacity to predict the effect of force and motion in the course of carrying out the design function of engineering

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS107</b>	<b>Course Name</b>	<b>: Basics of Industrial Processes</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 Outcomes:**

This course will enable the students to

- Explain about the basics of Industrial process.
- To understand the basic concepts of Boilers and Turbines.

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17VE107</b>	<b>Course Name</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>: 2</b>

#### **Course Outcomes:**

This course will enable the students to

- Values of Religion and Society
- Professional Values and role of social institutions in value formation
- Constitutional Values and fundamental rights
- Directive Principles of State Policy, Fundamental Duties; and Women Welfare

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17PE108</b>	<b>Course Name</b>	<b>: Physical Education</b>
<b>Internal Marks</b>	<b>: 100</b>	<b>External Marks</b>	<b>: -</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 1</b>

#### **Course Outcomes:**

This course will enable the students to

- 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.

# **Course Outcomes (CO)**

## **SEMESTER - II**



**1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: II</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS204</b>	<b>Course Name</b>	<b>: Fundamentals of Fire and Fire 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 Outcomes:**

This course will enable the students to

- Knows 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

**1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: II</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS203</b>	<b>Course Name</b>	<b>: Safety in Chemical Industries</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 Outcomes:**

This course will enable the students to

- 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.

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: II</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS205</b>	<b>Course Name</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>: 3</b>

#### **Course Outcomes:**

This course will enable the students to

- 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

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: II</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS206</b>	<b>Course Name</b>	<b>: Fire Prevention Protection, Detection and Suppression 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>: 3</b>

#### **Course Outcomes:**

This course will enable the students to

- 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 .

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS207</b>	<b>Course Name</b>	<b>: Aspect and Impact Assessment of Pollution Control</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 Outcomes:**

This course will enable the students to

- Understand the basic concepts of Pollution
- Determine the Assessment to control the pollution

### **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: I</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17ES207</b>	<b>Course Name</b>	<b>: Environmental Studies</b>
<b>Internal Marks</b>	<b>: 50</b>	<b>External Marks</b>	<b>: 50</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

#### **Course Outcomes:**

This course 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.

## **1B.Sc Fire and Industrial Safety**

<b>Semester</b>	<b>: II</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS208</b>	<b>Course Name</b>	<b>: Fire Fighting and Field Training</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:**

This course will enable the students to

- To understand about Fire Fighting Equipments.
- Experiment with all types of Fire.

# **Course Outcomes (CO)**

**SEMESTER – III**

## II B.Sc Fire and Industrial Safety

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS301</b>	<b>Course Name</b>	<b>: Fire Tender, hydrant and Sprinkler 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 Outcomes:

This course will enable the students to

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

## II B.Sc Fire and Industrial Safety

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS302</b>	<b>Course Name</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 Outcomes:

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS303</b>	<b>Course Name</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>: 4</b>

### **Course Outcomes:**

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS306</b>	<b>Course Name</b>	<b>: Safety in Textile 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>: 3</b>

### **Course Outcomes:**

This course will enable the students to

- Can able identify the various hazards in Textile Industries
- Develop the Safety Control measures in Textile Industries

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

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS304</b>	<b>Course Name</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>: 2</b>

#### **Course Outcomes:**

This course will enable the students to

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

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

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS305</b>	<b>Course Name</b>	<b>: NME (Basics of Industrial Safety)</b>
<b>Internal Marks</b>	<b>: 50</b>	<b>External Marks</b>	<b>: 50</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

#### **Course Outcomes:**

This course will enable the students to

- 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.



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

<b>Semester</b>	<b>: III</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS306</b>	<b>Course Name</b>	<b>: First Aid ,Off Shore and Sea Survival techniques</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:**

This course will enable the students to

- Experiment with study about Principles of Sea survival.
- Experiment with handling the rescue operation during emergency and precaution against fire.

# **Course Outcomes (CO)**

**SEMESTER – IV**

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS401</b>	<b>Course Name</b>	<b>: Safety Legislation 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>: 4</b>

#### **Course Outcomes:**

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS405</b>	<b>Course Name</b>	<b>: Food Hygiene and Sanitation(HACCP)</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 Outcomes:**

This course will enable the students to

- 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.

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS402</b>	<b>Course Name</b>	<b>: Occupational Health and 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 Outcomes:**

This course will enable the students to

- 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.

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS403</b>	<b>Course Name</b>	<b>: Transport 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 Outcomes:**

This course will enable the students to

- 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.

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS406</b>	<b>Course Name</b>	<b>: NME (Basics of Industrial Safety)</b>
<b>Internal Marks</b>	<b>: 50</b>	<b>External Marks</b>	<b>: 50</b>
<b>Part</b>	<b>: IV</b>	<b>Credits</b>	<b>: 2</b>

#### **Course Outcomes:**

This course will enable the students to

- Can estimate the establish the different requirement for fire fighting in different Industries
- The safe design of building and their structured fire protection.

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

<b>Semester</b>	<b>: IV</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS407</b>	<b>Course Name</b>	<b>: Basics of Computer Laboratory</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:**

This course will enable the students to

- To explain about life saving equipments used in industries.
- To identify about the various material handling equipments used in industries.

# **Course Outcomes (CO)**

**SEMESTER – V**

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS501</b>	<b>Course Name</b>	<b>: Hazards Identification and Risk Assessment</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 Outcomes:**

This course will enable the students to

- 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.

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS502</b>	<b>Course Name</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 Outcomes:**

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS503</b>	<b>Course Name</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 Outcomes:**

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS505</b>	<b>Course Name</b>	<b>: Search and rescue Techniques and 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 Outcomes:**

This course will enable the students to

- 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.



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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS506</b>	<b>Course Name</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>: 3</b>

#### **Course Outcomes:**

This course will enable the students to

- 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.

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS504</b>	<b>Course Name</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>: IV</b>	<b>Credits</b>	<b>: 3</b>

#### **Course Outcomes:**

This course will enable the students to

- 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

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

<b>Semester</b>	<b>: V</b>	<b>Batch</b>	<b>: 2017-2020</b>
<b>Course code</b>	<b>: 17FS507</b>	<b>Course Name</b>	<b>: Industrial Safety Laboratory</b>
<b>Internal Marks</b>	<b>: 25</b>	<b>External Marks</b>	<b>: 75</b>
<b>Part</b>	<b>: V</b>	<b>Credits</b>	<b>: 2</b>

#### **Course Outcomes:**

This course will enable the students to

- Experiment with the various types of Extinguisher and usage of Personal Protective Equipment.
- To show the road safety sign and Symbols and to train to use the self –contained Breathing Apparatus.

# **Course Outcomes (CO)**

**SEMESTER – VI**

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

<b>Semester</b>	<b>: VI</b>	<b>Batch</b>	<b>: 2017-2018</b>
<b>Course code</b>	<b>: 17FS601</b>	<b>Course Name</b>	<b>: Project</b>
<b>Internal Marks</b>	<b>: -</b>	<b>External Marks</b>	<b>: 100</b>
<b>Part</b>	<b>: V</b>	<b>Credits</b>	<b>: 10</b>

#### **Course Outcomes:**

This course will enable the students to

- Demonstrate a sound technical knowledge of their selected **project** topic.
- Undertake problem identification, formulation and solution.
- Design engineering solutions to complex problems utilising a systems approach.
- Conduct an engineering **project**.