



# GUJARAT TECHNOLOGICAL UNIVERSITY

**Program Name: Diploma Engineering**

**Level: Diploma**

**Branch: Fire Technology and Safety**

**Subject Code : DI01070021**

**Subject Name : First Aid & Home Nursing**

|                                |                 |
|--------------------------------|-----------------|
| <b>w. e. f. Academic Year:</b> | 2026-27         |
| <b>Semester:</b>               | 1 <sup>st</sup> |
| <b>Category of the Course:</b> | ESC             |

|                      |                                                                                                                                                                                                                                                                                                                                               |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prerequisite:</b> | Students should have basic knowledge of:<br>1. Basic knowledge of health, hygiene and safety practices.<br>2. Understanding of human body functions and emergency situations.<br>3. Awareness regarding personal care and community health.                                                                                                   |
| <b>Rationale:</b>    | The subject “First Aid & Home Nursing” is designed to provide students with essential knowledge and practical skills required to handle medical emergencies and provide basic nursing care. The course aims to develop awareness regarding health, hygiene, safety and emergency response in day-to-day life as well as workplace situations. |

## Course Outcome:

After successful completion of this course, students will be able to:

| No. | No. Course Outcomes                                                                                                                      | RBT Level |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1   | Explain the basic principles, objectives and importance of first aid and emergency care.                                                 | U         |
| 2   | Demonstrate appropriate first aid procedures for common injuries, bleeding, burns, fractures, shock and other emergencies.               | A         |
| 3   | Perform basic life-support procedures, including CPR, artificial respiration and management of choking emergencies.                      | A         |
| 4   | Identify the contents and proper use of a first aid kit and select appropriate first aid materials for different emergency situations.   | R         |
| 5   | Apply basic home nursing practices, including patient care, hygiene, bed making, vital-sign monitoring, health records and dietary care. | A         |
| 6   | Demonstrate appropriate response to medical emergencies, poisoning, animal bites, heat-related emergencies and disaster situations.      | A         |

*\*Revised Bloom's Taxonomy (RBT)*



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## Teaching and Examination Scheme:

| Teaching Scheme<br>(in Hours) |   |    | Total Credits<br>L+T+ (PR/2) | Assessment Pattern and Marks |       |                      |         | Total<br>Marks |
|-------------------------------|---|----|------------------------------|------------------------------|-------|----------------------|---------|----------------|
| L                             | T | PR | C                            | Theory                       |       | Tutorial / Practical |         |                |
|                               |   |    |                              | ESE (E)                      | PA(M) | PA(I)                | ESE (V) |                |
| 2                             | 0 | 2  | 3                            | 70                           | 30    | 20                   | 30      | 150            |

## Course Content:

| Unit No. | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours | % of Weightage |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| 1.       | <b>FUNDAMENTALS OF FIRST AID AND BASIC LIFE SUPPORT</b><br><b>1.1 Introduction to First Aid</b> <ul style="list-style-type: none"> <li>Definition and objectives of first aid</li> <li>Importance and scope of first aid</li> <li>Principles of first aid</li> <li>Responsibilities and limitations of a first aider</li> <li>Assessment of an emergency situation</li> <li>Personal safety and use of PPE</li> <li>Emergency communication and calling for professional help</li> </ul> <b>1.2 Basic Life Support</b> <ul style="list-style-type: none"> <li>Assessment of an unconscious casualty</li> <li>Checking responsiveness and breathing</li> <li>Recovery position</li> <li>Basic principles of CPR</li> <li>Adult CPR</li> <li>Introduction to child and infant CPR</li> <li>Use of CPR face shield and barrier devices</li> <li>Management of choking</li> </ul> <b>1.3 Artificial Respiration</b> <ul style="list-style-type: none"> <li>Basic principles of artificial respiration</li> <li>Mouth-to-mouth respiration</li> </ul> | 9            | 20             |
| 2.       | <b>MANAGEMENT OF INJURIES AND ACCIDENTS</b><br><b>2.1 Wounds and Bleeding</b> <ul style="list-style-type: none"> <li>Types of wounds: <ul style="list-style-type: none"> <li>Incised wounds</li> <li>Lacerated wounds</li> <li>Punctured wounds</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 9            | 20             |



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|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
|    | <ul style="list-style-type: none"> <li>○ Contused wounds</li> <li>• Types of bleeding</li> <li>• Direct pressure and control of bleeding</li> <li>• Application of bandages and dressings</li> <li>• Prevention of infection</li> <li>• Recognition of severe bleeding and emergency referral</li> </ul> <p><b>2.2 Fractures, Sprains and Dislocations</b></p> <ul style="list-style-type: none"> <li>• Definition and causes</li> <li>• Signs and symptoms</li> <li>• Types of fractures: <ul style="list-style-type: none"> <li>○ Simple fracture</li> <li>○ Complicated fracture</li> <li>○ Compound fracture</li> <li>○ Impact fracture</li> <li>○ Greenstick fracture</li> </ul> </li> <li>• First aid for fractures</li> <li>• Use of splints and slings</li> <li>• First aid for sprains and dislocations</li> <li>• Do's and don'ts during transportation of injured persons</li> </ul> <p><b>2.3 Burns and Scalds</b></p> <ul style="list-style-type: none"> <li>• Types and causes of burns</li> <li>• Thermal burns</li> <li>• Electrical burns</li> <li>• Chemical burns</li> <li>• Sunburns</li> <li>• Scalds</li> <li>• First aid treatment for burns</li> <li>• Special precautions for electrical burns</li> <li>• Prevention of infection and complications</li> </ul> <p><b>2.4 Head, Chest and Eye Injuries</b></p> <ul style="list-style-type: none"> <li>• Recognition of serious injuries</li> <li>• Basic first aid measures</li> <li>• Precautions during transportation</li> <li>• When to seek immediate medical assistance</li> </ul> |   |    |
| 3. | <p><b>MEDICAL EMERGENCIES AND POISONING</b></p> <p><b>3.1 Shock and Fainting</b></p> <ul style="list-style-type: none"> <li>• Definition and causes of shock</li> <li>• Signs and symptoms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9 | 20 |



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|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
|    | <ul style="list-style-type: none"> <li>First aid management of shock</li> <li>Fainting and its management</li> </ul> <p><b>3.2 Heart-Related Emergencies</b></p> <ul style="list-style-type: none"> <li>Recognition of cardiac emergencies</li> <li>Signs of cardiac arrest</li> <li>Basic emergency response</li> <li>CPR and emergency medical assistance</li> </ul> <p><b>3.3 Poisoning</b></p> <ul style="list-style-type: none"> <li>Definition and general causes</li> <li>Types of poisoning: <ul style="list-style-type: none"> <li>Gas poisoning</li> <li>Swallowed poison</li> <li>Metallic poisoning</li> <li>Injected poison</li> <li>Food poisoning</li> </ul> </li> <li>First aid principles for poisoning</li> <li>Importance of identifying the substance</li> <li>Do's and don'ts in poisoning cases</li> <li>Importance of immediate medical assistance</li> </ul> <p><b>3.4 Bites and Stings</b></p> <ul style="list-style-type: none"> <li>Snake bites</li> <li>Insect bites and stings</li> <li>General first aid measures</li> <li>Identification of serious symptoms</li> <li>Emergency referral</li> </ul> <p><b>3.5 Other Medical Emergencies</b></p> <ul style="list-style-type: none"> <li>Heat exhaustion</li> <li>Heat stroke</li> <li>Fever</li> <li>Epileptic seizures</li> <li>Basic first aid and safety precautions</li> </ul> |   |    |
| 4. | <p><b>HOME NURSING AND BASIC PATIENT CARE</b></p> <p><b>4.1 Introduction to Home Nursing</b></p> <ul style="list-style-type: none"> <li>Meaning and importance of home nursing</li> <li>Qualities of a good caregiver/nurse</li> <li>Duties and responsibilities of a caregiver</li> <li>Patient dignity, privacy and communication</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9 | 20 |



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|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
|    | <ul style="list-style-type: none"> <li>Psychological needs of different patients</li> </ul> <p><b>4.2 Personal Hygiene and Patient Care</b></p> <ul style="list-style-type: none"> <li>Personal hygiene of the patient</li> <li>Bed bathing and sponging</li> <li>Oral care</li> <li>Hair and skin care</li> <li>Prevention of pressure sores</li> <li>Safe handling and movement of patients</li> </ul> <p><b>4.3 Bed Making</b></p> <ul style="list-style-type: none"> <li>Principles of bed making</li> <li>Types of beds</li> <li>Preparation of a clean and comfortable patient bed</li> <li>Safety and hygiene precautions</li> </ul> <p><b>4.4 Monitoring and Health Records</b></p> <ul style="list-style-type: none"> <li>Importance of maintaining health records</li> <li>Recording:             <ul style="list-style-type: none"> <li>Temperature</li> <li>Pulse</li> <li>Respiration</li> <li>Blood pressure</li> </ul> </li> <li>Observation of changes in the patient's condition</li> <li>Reporting and communication</li> </ul> <p><b>4.5 Nutrition and Diet for the Sick</b></p> <ul style="list-style-type: none"> <li>Balanced diet</li> <li>Importance of nutrition during illness</li> <li>Basic principles of planning a diet for a sick person</li> <li>Hydration and oral rehydration</li> <li>Special dietary considerations</li> </ul> |   |    |
| 5. | <p><b>FIRST AID KIT, EMERGENCY PREPAREDNESS AND COMMUNITY SAFETY</b></p> <p><b>5.1 First Aid Box</b></p> <ul style="list-style-type: none"> <li>Purpose and importance</li> <li>Standard contents of a first aid box</li> <li>Arrangement and identification of materials</li> <li>Maintenance and periodic inspection</li> </ul> <p><b>5.2 First Aid Equipment and Materials</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 9 | 20 |



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|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|
|  | <ul style="list-style-type: none"> <li>• Sterile cotton and gauze</li> <li>• Dressing materials</li> <li>• Adhesive bandages</li> <li>• Roller bandages</li> <li>• Triangular bandages</li> <li>• Adhesive tape</li> <li>• Scissors and forceps</li> <li>• Safety pins</li> <li>• Disposable gloves</li> <li>• Thermometer</li> <li>• CPR face shield/mask</li> <li>• Antiseptic wipes</li> <li>• Instant cold pack</li> <li>• Torch/flashlight</li> </ul> <p><b>5.3 Common First Aid Medicines</b></p> <ul style="list-style-type: none"> <li>• Antiseptic solutions</li> <li>• Antiseptic creams and ointments</li> <li>• Oral Rehydration Salts (ORS)</li> <li>• Calamine lotion</li> <li>• Burn gel or burn ointment</li> <li>• Eye wash solution</li> <li>• Other basic items as recommended by qualified medical professionals</li> </ul> <p><b>5.4 Emergency Preparedness</b></p> <ul style="list-style-type: none"> <li>• Emergency action plans</li> <li>• Emergency contact systems</li> <li>• Evacuation and assembly procedures</li> <li>• Emergency communication</li> <li>• Basic disaster preparedness</li> </ul> <p><b>5.5 Fire and Community Safety Awareness</b></p> <ul style="list-style-type: none"> <li>• Basic fire safety awareness</li> <li>• Role of first aid during fire emergencies</li> <li>• Community health and emergency response</li> <li>• Mock drills and emergency simulations</li> </ul> |           |            |
|  | <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>45</b> | <b>100</b> |



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**Suggested Specification Table with Marks (Theory):**

| Distribution of Theory Marks (in %) |         |         |         |         |         |
|-------------------------------------|---------|---------|---------|---------|---------|
| R Level                             | U Level | A Level | N Level | E Level | C Level |
| 20                                  | 20      | 30      | 20      | 10      | -       |

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

## **References/Suggested Learning Resources:**

### **(a) Books:**

Indian Red Cross Society – First Aid Manual

- Basic First Aid Training Handbook for Emergencies

St. John Ambulance Association – First Aid Guide

- Comprehensive Guide to Emergency Care and CPR

WHO (World Health Organization) – Basic Emergency Care Guidelines

- Standard protocols for first aid and emergency response

National Disaster Management Authority (NDMA) – Guidelines

- Disaster preparedness and emergency response procedures

GTU Recommended Safety and First Aid Notes

- Course material provided by Gujarat Technological University

Paramedic and Nursing Fundamentals Books

- Basic Nursing Care and Home Nursing Procedures

Fire and Safety Engineering Textbooks

- Emergency handling and workplace safety practices

Online Learning Resources

- Educational videos and modules on CPR, first aid and home care (YouTube, Coursera, etc.)

Standard First Aid Manuals (Latest Editions)

- Government approved safety and medical emergency handbooks

Occupational Health and Safety Guidelines (ILO)

- International standards for workplace safety and emergency care

### **(b) Open-Source Learning Resources:**

1. World Health Organization (WHO) – Basic Emergency Care and First Aid Resources.
2. British Red Cross – Learn First Aid Online.
3. American Red Cross – First Aid and CPR Learning Resources.
4. Indian Red Cross Society – First Aid and St. John Ambulance Resources.
5. National Disaster Management Authority (NDMA), Government of India – Disaster Management and Emergency Preparedness Resources.
6. International Labour Organization (ILO) – Occupational Safety and Health Resources.



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7. MedlinePlus – First Aid and Emergency Health Information.
8. Educational videos and demonstrations on CPR, BLS, bandaging, wound care, burns, fractures, poisoning and emergency response from recognized health and safety organizations.

## LIST OF LABORATORY / LEARNING RESOURCES REQUIRED

- Adult CPR training mannequin
- Child/infant CPR training mannequin, if available
- First aid kits
- Cotton, gauze and dressing materials
- Adhesive and roller bandages
- Triangular bandages
- Splints and slings
- Blood pressure monitor
- Clinical/digital thermometers
- Stethoscope
- Training models for wound dressing
- Stretchers
- Personal Protective Equipment (PPE)
- Fire extinguishers for safety demonstrations
- Emergency simulation and mock-drill equipment
- Audio-visual teaching aids
- CPR feedback device, if available
- Safety charts and posters
- Basic nursing bed setup
- Communication equipment for emergency drills
- Storage cabinet for first aid materials
- Whiteboard/Smart Board

## SUGGESTED COURSE PRACTICAL LIST:

1. Demonstration and practice of first aid kit preparation.
2. Identification and proper use of first aid equipment.
3. Demonstration of CPR using a training mannequin.
4. Practice of recovery position.
5. Demonstration of choking management.
6. Practice of wound dressing and bandaging.
7. Application of roller and triangular bandages.
8. Demonstration of splinting and sling application.



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9. First aid management of burns and scalds.
10. Measurement of temperature, pulse and blood pressure.
11. Basic patient bed-making activity.
12. Demonstration of patient hygiene and sponging.
13. Preparation of a basic health record.
14. Mock drill for accident and emergency response.
15. Emergency evacuation and disaster-response drill.
16. Role play for accident and medical emergency situations.
17. First aid response to simulated poisoning and bite cases.
18. Fire emergency first aid simulation.

## **Suggested Project List:**

Students may undertake the following projects or group activities:

1. Preparation and demonstration of a standard first aid kit.
2. Preparation of an emergency response plan for a college campus.
3. Conducting a first aid awareness programme.
4. Preparation of a first aid and emergency safety poster.
5. Demonstration of CPR and basic life support.
6. Preparation of a community emergency contact directory.
7. Conducting a mock accident and rescue drill.
8. Survey of first aid facilities available in an industrial workplace.
9. Preparation of a basic home nursing care plan.
10. Demonstration of emergency evacuation and first aid response.

## **Suggested Activities for Students: If any**

- Practical exercises on bandaging and wound dressing
- First aid kit preparation and usage demonstration
- Mock drill for emergency evacuation and disaster response
- Role play of accident and emergency handling situations
- Measurement of vital signs (pulse, temperature, blood pressure)

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