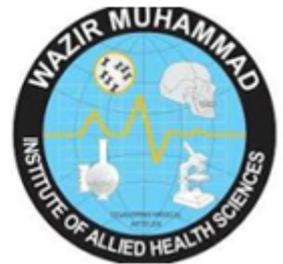




WAZIR MUHAMMAD INSTITUTE  
OF ALLIED HEALTH SCIENCES

**GANDHARA UNIVERSITY  
PESHAWAR**



# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

## EMERGENCY CARE TECHNOLOGY

| <b>1<sup>ST</sup> YEAR B.SC (Hons) Subjects</b> |                       | <b>Lectures/Demonstration</b> |
|---|-----------------------|-------------------------------|
| 1.  | Anatomy and Histology | 220                           |
| 2.  | Basic Physiology      | 220                           |
| 3.  | Basic Pharmacology    | 200                           |
| 4.  | Biochemistry          | 160                           |
| 5.  | General Pathology     | 200                           |
| 6.  | Islamiat              | 70                            |
| 7.  | Pak Studies           | 70                            |
| 8.  | Computer Education    | 39                            |
| Total   |                       | 1179                          |

| <b>2<sup>nd</sup> YEAR B.SC (Hons) Subjects</b> |              | <b>Lectures/Demonstration</b> |
|---|--------------|-------------------------------|
| 1.  | Medicine-I   | 228                           |
| 2.  | Medicine-II  | 228                           |
| 3.  | Medicine-III | 228                           |
| 4.  | Medicine-IV  | 152                           |
| Total   |              | 836                           |

| <b>3<sup>rd</sup> YEAR B.SC (Hons) Subjects</b> |                                  | <b>Lectures/Demonstration</b> |
|---|----------------------------------|-------------------------------|
| 1.  | Medical & Neurological Emergency | 228                           |
| 2.  | Obstetric Emergency              | 228                           |
| 3.  | Disaster Management              | 152                           |
| 4.  | Surgical & Trauma Management     | 228                           |
| Total   |                                  | 836                           |

| <b>4<sup>th</sup> YEAR B.SC (Hons) Subjects</b> |  | <b>Lectures/Demonstration</b> |
|---|--|-------------------------------|
| 1.  | Biostatistics & Research Methodology     | 152                           |
| 2.  | Transportation of Critically Ill Patient | 228                           |
| 3.  | Shock Management BLS & ACLS              | 152                           |
| 4.  | Infection Control                        | 228                           |
| 5.  | Neonatal & Pediatric Surgery             | 228                           |
| Total   |  | 988                           |

**CURRICULUM FOR B.SC(Hons)  
EMERGENCY CARE TECHNOLOGY**

**1<sup>st</sup> Year**

**(Curriculum for All Technologies)**

# **CURRICULUM FOR B.SC(Hons)**

## **EMERGENCY CARE TECHNOLOGY**

|                               |                              |              |            |
|-------------------------------|------------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Anatomy and Histology</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>220+80</b>                | <b>Marks</b> | <b>150</b> |

To introduce the students the significance of the subject of anatomy in medical science regarding its knowledge its applications and day-to-day developments in the subject

### **COURSE CONTENT:**

#### **I. General Anatomy**

Anatomical terms and positions

Description of tissue

#### **II. Systemic Anatomy**

Systemic Anatomy includes

- a. Muscular skeletal system
- b. Gastrointestinal system
- c. Respiratory system
- d. Cardiovascular system
- e. Lymphatic system
- f. Head and Neck
- g. Nervous System
- h. Urinary System
- i. Reproductive System
- j. Endocrine System
- k. Special Senses

### **RECOMMENDED BOOKS:**

Snell's clinical Anatomy (Text Book) by Snell 7th Edition 2000 published by Churchill Living Stone

Gray's anatomy (Reference book) by Roger Warwick Petter L. Williams 1973 published by Langman group limited.

# **CURRICULUM FOR B.SC(Hons)**

## **EMERGENCY CARE TECHNOLOGY**

|                               |                         |              |            |
|-------------------------------|-------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Basic Physiology</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>220+60</b>           | <b>Marks</b> | <b>150</b> |

### **COURSE OBJECTIVE:**

To introduce to the students the significance of the subject of Physiology in medical science with regards to its knowledge in making the other subjects of medical sciences understandable. Its applications and day to day developments in the subject of Physiology.

### **COURSE CONTENTS:**

1. Cell
2. Gastrointestinal system
3. Respiratory system
4. Cardiovascular system
5. Blood and immunity
6. Nerves system
7. Urinary system
8. Reproductive system
9. Endocrine system
10. Special senses

### **RECOMMENDED BOOKS:**

Guyton text book of Physiology (Text Book) by Guyton 1991 published by W.B Saunders company

Ganong review of Physiology (Reference Book) by Ganong 20<sup>th</sup> Edition 2000 published by Lang Medical book.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                             |              |            |
|-------------------------------|-----------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>General Pharmacology</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>200+50</b>               | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVE:**

To introduce to the students the knowledge of the subject of pharmacology with regards to its importance in understanding the other disciplines of medical science and regarding the application of the subject and to learn about the new developments in the field of pharmacology.

## **COURSE CONTENT:**

1. Introduction to Pharmacology
2. Pharmacokinetics
3. Pharmacodynamics
4. Adverse effects of drugs
5. Classification of drugs

## **RECOMMENDED BOOKS:**

Lippincot's pharmacology (text book) by Mycek 2<sup>nd</sup> edition 2000 published by Lippincot Raven

Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 8<sup>th</sup> Edition, Published by Appleton.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                          |              |            |
|-------------------------------|--------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>General Pathology</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>200+120</b>           | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVE:**

To introduce to the students the knowledge of the subject of Pathology regarding its needs in understanding the different domains of medical science and regarding the other applications of the subject and to come to know the recent advancements in the field of pathology.

## **COURSE CONTENT:**

1. Introduction to Pathology
2. Cell Injury
3. Inflammation
4. Repair
5. Hemodynamic Disorders
6. Disorders of Immunity
7. Neoplasia
8. Microbiology

## **RECOMMENDED BOOKS:**

Robbin's textbook of Pathology (Text Book) by Robbin Cotran Kumar 6<sup>th</sup> Edition 1998,  
Published by I.E. Saunders.

Pathology illustrated (Reference Book) by AD. T Govan 1991 published by Churchill Livingstone.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                     |              |            |
|-------------------------------|---------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Biochemistry</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>160+40</b>       | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVE:**

The induction of knowledge subject of biochemistry to student regarding its importance in understanding the other domains of medical science and regarding the applications of the subject and to know about the recent developments in the field of biochemistry.

## **COURSE CONTENTS:**

1. Introduction
2. Carbohydrate
3. Proteins
4. Lipids
5. Enzyme
6. Vitamins
7. Nutrition food and dietetics
8. Metabolism
9. Body fluids
10. Acid base balance
11. Minerals

## **RECOMMENDED BOOKS:**

Harper's textbook of Biochemistry (Text Book) by Bertram Katzung 1992 published by Appleton Lange.

Biochemistry for Paramedics by Dr. Khalid Mehmood 2005 published by UB agency Peshawar.

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                 |              |           |
|-------------------------------|-----------------|--------------|-----------|
| <b>Course Title:</b>          | <b>Islamiat</b> |              |           |
| <b>Lectures/Demonstration</b> | <b>70</b>       | <b>Marks</b> | <b>60</b> |

## **COURSE OBJECTIVE:**

- To educate students regarding basic concept of Islam
- To educate students regarding Islamic influence in the world
- To educate the students regarding Islamic Medical Ethics & Contribution of the Muslims in Medicine, Science & Technologies.

## **COURSE CONTENTS:**

### **Holy Quran and Sunnah**

#### **Holy Quran**

- \* Introduction
- \* Importance and characteristics
- \* Sura-e-Hujaraat with translation
- \* Sura-e-Al-Furqan: Verses 63-77 with translation and explanation

#### **Sunnah**

- \* Importance of Sunnah
- \* Twenty selected Hadith with translation  
(Mention in Islamiat Compulsory for degree classes,  
published by:  
Allama Iqbal Open University)

#### **Fundamental Doctrine of Islam**

- a. Islam with reference to Holy Quran & Hadith
- b. Tawheed (Oneness of Allah)
- c. Prophethood
- d. The day of Judgment (Akhirat)
- e. Salat & Nimaz (Abadaat)
- f. Saum (Fasting)
- g. Zakat
- h. Hajj
- i. Jihad

#### **Life of Holy Prophet**

study of the life of the holy Prophet & Seerat  
life of the Holy Prophet at Makkah from birth to Hijra (Migration to Madina)  
Method of Preaching & difficulties  
life of Holy Prophet at Madina  
amicable Accords (Mowkhat)  
treaty of Madina (Misaq-e-Mukarama)  
conquest of Makkah (Mukarama)  
hajjat-ul-wida

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

## **The Ethical View of Islam & Characteristics Islamic Cultural**

Character Building

The Concept of Ethics

The Moral Values: Truthfulness, tawakal, Taqwa, Fulfillment of Promises, Simplicity, the steam of Parents and Guardians, Behaviorism Y& Broadness.

Islamic Society:                      Kisb-e-Halal, Human Dignity, Social justice Adle-e-Shoora

## **Influence of the Islamic civilization**

4.4      Panacea of our problems

4.6      Our future, unity, political stability

## **Islamic Medical Ethics**

Contribution of the Muslims in Medicine, Science and Technology

**Note:** while keeping the Islamic values and basic Characteristics of Islamic Society the proper guideline may be provided in such a way that should be applicable in business and trade.

## **RECOMMENDED BOOKS:**

Islamiyat Compulsory, Islamabad, Allama Iqbal Open University, Islamabad

M.D. Zaffar, Islamic Education (Compulsory) Lahore Aziz Book Dept. Urdu Bazar.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                    |              |           |
|-------------------------------|--------------------|--------------|-----------|
| <b>Course Title:</b>          | <b>Pak Studies</b> |              |           |
| <b>Lectures/Demonstration</b> | <b>70</b>          | <b>Marks</b> | <b>40</b> |

## **COURSE OBJECTIVE:**

To introduce to the student the significant of Pak Study B.Sc level course.

## **COURSE CONTENTS:**

### **I Chapter One**

Ideology of Pakistan

### **Chapter Two**

Background of ideology of Pakistan

- a. Reformation movement
- b. Educational movement
- c. Political movement

### **III Chapter Three**

Movement of Pakistan (Since Allama Iqbal Address at Ala Bad 1930 till 14<sup>th</sup> August 1947)

### **IV Chapter Four**

Establishment of Pakistan (Political, Social financial Problems)

### **V Chapter Five**

Constitutional and Political Developments in Pakistan

### **VI Chapter Six**

Geographical condition of Pakistan

### **VII Chapter Seven**

Pakistan and Muslim World

## **RECOMMENDED BOOKS:**

Pakistan Studies Compulsory for Degree Courses by Dr. Noshaad Khan

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                           |              |            |
|-------------------------------|---------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Computer Education</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>39</b>                 | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVES:**

To introduce to the student the significant for computer definitions, history, types and component, hardware and software application

## **COURSE CONTENT:**

**Introduction** Definition  
of computer  
History of  
computer

Classification of computer

Components of computer

### **Hardware and Software**

Physical  
components of computer  
Logical  
component of computer  
System  
software

Application software

### **Storage devices**

Magnetic  
storage devices  
Optical  
storage devices  
Memories

### **Application software**

Microsoft word

Microsoft power point

Microsoft excel

Microsoft power point

Microsoft access

Networking

### **Definition of networking**

Types of networking

Internet

## **RECOMMENDED BOOKS:**

Fundamental of I.T concept by Nayyar Kanwal by CECOSE University Teacher's notes

**CURRICULUM FOR B.SC(Hons)  
EMERGENCY CARE TECHNOLOGY**

**2<sup>ND</sup> YEAR B.SC EMERGENCY CARE TECHNOLOGY**

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                   |              |            |
|-------------------------------|-------------------|--------------|------------|
| <b>Course Title:</b>          | <b>MEDICINE I</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228-114</b>    | <b>Marks</b> | <b>150</b> |

**Course Objective:** To equip paramedics with the skills and knowledge necessary for performing PETs, DOTS, and DOTS-Plus, focusing on life-saving emergency procedures and the use of various pulmonology equipment and procedures, including pleural biopsy, ventilators, and bronchoscopy.

## **Course Contents:**

1. **Sarcoidosis**
  - Pathophysiology
  - Diagnosis and treatment
  - Emergency management
2. **Interstitial Lung Diseases**
  - Overview of different types
  - Diagnostic techniques
  - Management strategies
3. **Bronchial Carcinoma**
  - Identification and staging
  - Treatment options
  - Emergency care considerations
4. **Pleural Effusion**
  - Causes and symptoms
  - Diagnostic procedures (e.g., thoracentesis)
  - Treatment and emergency management
5. **Pneumothorax**
  - Types and causes
  - Clinical presentation
  - Emergency interventions and management

## **RECOMMENDED BOOKS:**

Kumar & Clark clinical Medicine, Oxford hand book of clinical Medicine: short text of medical diagnoses and management by Muhammad Inam Danish.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                    |              |            |
|-------------------------------|--------------------|--------------|------------|
| <b>Course Title:</b>          | <b>MEDICINE-II</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+76</b>      | <b>Marks</b> | <b>150</b> |

**Course Objective:** To train paramedics in performing PETs, DOTS, and DOTS-Plus, focusing on life-saving emergency procedures and the use of various pulmonology procedures and equipment, such as pleural biopsy, ventilators, and bronchoscopy.

### **Course Contents:**

1. **Respiratory Failure**
2. **Chronic Obstructive Pulmonary Disease (COPD)**
3. **Chronic Bronchitis**
4. **Emphysema**
5. **Bronchial Asthma**
6. **Management of Status Asthmaticus**
7. **Bronchiectasis**
8. **Pneumonia**
9. **Lung Abscess**
10. **Tuberculosis**

### **RECOMMENDED BOOKS:**

Kumar & Clark clinical Medicine, Oxford hand book of clinical Medicine: short text of medical diagnoses and management by Muhammad Inam Danish.

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                     |              |            |
|-------------------------------|---------------------|--------------|------------|
| <b>Course Title:</b>          | <b>MEDICINE-III</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>      | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVES:**

To introduce to the student the significant of cardiology disorders and pulmonology disorder and preventive, curative care, patient receiving, taking history, assessment, investigation in OPD and maintain the patient and ward record in cardiology and pulmonology

## **COURSE CONTENTS:**

Circulatory system, Coronary heart disease

Circulatory system, hypertension, Rheumatic heart diseases, heart failure Upper Respiratory infections acute coryza, acute tonsillitis, laryngitis, bronchitis Lower Respiratory Tract Infections, Pneumonia's,

Pulmonary T.B, COPD, Asthma Diseases  
of cardiovascular system

Disturbance of rate and rhythm, myocarditis, pericarditis, endocarditis,

Chronic valvular disease, myocardial degeneration, the angina syndrome, congenital cardiac failure, hypertension and arteriosclerosis, essential hypertension, thromboangitis obliterans, vasomotor disorders, Reynold's disease, acroparasthesia, venous conditions, thromboangitis obliterans embolism, varicose veins, diseases of the blood, anemia.

Diseases of respiratory tract

Bronchitis, bronchiectasis, pleurisy, empyema, emphysema, pneumonia, lung abscess, tuberculosis of the lungs, asthma, hay fever

Patient attending, assessment, provisional diagnosis, treatment plan in investigations, output input chart, temperature chart, special investigation chart, provisional, differential diagnosis patient and ward record and preparation the patient for discharge

## **RECOMMENDED BOOK:**

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS Principal  
and practice of medicine by CRW Adwarsetal in 1995 by ELBS

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

|                               |                    |              |            |
|-------------------------------|--------------------|--------------|------------|
| <b>Course Title:</b>          | <b>MEDICINE-IV</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>152+152</b>     | <b>Marks</b> | <b>150</b> |

## **COURSE OBJECTIVES:**

To introduce to the student the significant of alimentary tract disorders and neurology disorder, preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in medical and neurology

## **COURSE CONTENTS:**

Diseases of the alimentary tract acute Gastro enteritis, Gastritis, Peptic Ulcer

Worm infestation. Pin worm, thread worm, Hook worm Tape worm Liver

Diseases (Viral Hepatitis 9ABC) liver Cirrhosis, Liver failure

Disease of the nervous System (headache, meningitis, Conveulsions, Coma, Strokes, Sub Arachnoids hemorrhage, movement disorder

Blood Disorder (Anemia and its types leukemia, Thromobocytopenia, Hemophilia

Diseases of the nervous system (neurology)

Upper motoneurone lesions lower motor neurone lesions extra-pyramidal system, cerebellum and sensory System: hemilegia, paraplegia, monoplegia, facial paralysis, acute infections, encephalitis and herpes Zoster. Vascular disorders of the brain, hemiplegia, rheumatic chorea, multiple-peripheral neuritis. Neuralgia, motor neurone disease; cerebral palsy and poliomyelitis, muscular dystrophies, thoracic inlet Syndrome, Acroparaesthesia, disseminated sclerosis, subacute combined degeneration of the cord, Freidrich's ataxia, parkinsonism

Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigation chart, provisional, differential diagnosis, patient and ward record and preparation the patient for discharge

## **RECOMMENDED BOOKS:**

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS Principal and practice of Medicine by CRW Adwardsetal in 1995 by ELBS

## **REFERRAL BOOK:**

Robbins pathology in 1998 by IE sounder

**CURRICULUM FOR B.SC(Hons)  
EMERGENCY CARE TECHNOLOGY**

**3<sup>rd</sup> YEAR B.SC EMERGENCY CARE TECHNOLOGY**

# CURRICULUM FOR B.SC(Hons)

## EMERGENCY CARE TECHNOLOGY

|                               |   |              |            |
|-------------------------------|---|--------------|------------|
| <b>Course Title:</b>          | <b>MEDICAL &amp; NEUROLOGICAL EMERGENCY</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>                              | <b>Marks</b> | <b>200</b> |

### Course Objectives:

1. To equip the student with professional knowledge, skill, techniques & ethical values to enable them to apply their acquired expertise in medical emergency.
2. Student will be able to provide patient-care in medical emergency, including the awareness of support services available and knowing when to activate them.
3. To deliver efficient and competent care to acutely ill patient in medical emergency.
4. Student will be able to recognize the neurologic emergency timely to prevent from secondary insult.
5. To confidently handle crisis situations safely and accurately perform all basic and advanced life support procedures.
6. Student will be able to recognize the cardiovascular emergency with the awareness of support services available and knowing when to activate them.
7. To deliver efficient and competent care to acute and chronically ill patient.
8. The aim of respiratory therapy is to equip the student with professional knowledge, skill, techniques & ethical values to enable them to apply their acquired expertise.
9. Student will be able to provide immediate effective respiratory support in medical, surgical & neurological emergencies.

### Course contents:

Respiratory Emergency, Asthma, COPD, Pneumonia, Apnea, Pneumothorax, Hemothorax. Tension Pneumothorax, Hydrothorax, Management of Type I & II Respiratory Failure, Management of Upper & Lower Respiratory Tract Infection, Tuberculosis Management by Aseptic Technique, Gastro Intestinal Emergency Acute Abdominal Pain, Gastroenteritis, Cholera, Typhoid Malaria, Acute Management of Liver Failure. Management of Diabetic Emergency, Uncontrolled Diabetic Mellitus Type I & II Diabetic ketoacidosis, Management of Anaphylactic Reaction & Anaphylactic Shock, Management of Acute Thyroid Crisis Hyperthyroidism & Hypothyroidism, Urologic Emergency, Acute Renal Failure. Acute Retention of Urine, Renal Colic, Cardiac Emergency, Acute Coronary Syndrome, Heart Failure, Myocardial Infarction Management of Seizure Management of Stroke & its Types. Ischemic and Hemorrhagic and non Hemorrhagic Stroke, Management of Hyper & Hypoglycemic Emergency, Heat Stroke, Hypothermia, Glasgow coma scale Assessment, Management of Ventricular Tachycardia, & Ventricular Fibrillation, Management of Pulse Less Electrical Activity Management of asystole Management of Stable & Unstable Tachycardia, Management of Acute Coronary Syndrome Management of Acute Myocardial infarction & Chronic Heart Failure Setting up and Trouble Shooting Oxygen Administration, Non Invasive Ventilation, NIV on Standard Ventilator, Bipap CPAP. Invasive Ventilation. Setting up Ventilator, Oxygenation Ventilation, Alarm, Trigger. Evaluate and Trouble Shoot the Patient- Ventilator System, Interpret Ventilator Graphic Waveform, Detect And Measure Auto-PEEP, Monitoring of PEEP Assisted by Mechanical Ventilation and are in Sudden Distress

### Practical:

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Recognizes a medical emergency assess the situation, obtain a basic history and physical examination manage emergency care, and, if needed, extricate the patient.</li> <li>2. Blood Pressure Recording</li> <li>3. Peripheral Venous Access</li> <li>4. Central Venous Access</li> <li>5. Cardiopulmonary Resuscitation</li> <li>6. ECG taking and monitoring</li> <li>7. Portable Suction</li> <li>8. Portable Vital Signs Monitor</li> <li>9. Patient transfer trolleys</li> <li>10. Usage of Intusion pumps</li> <li>11. Usage of Analyzers</li> <li>12. Usage of Defibrillators</li> <li>13. Usage of Patient monitors</li> <li>14. Usage of Blood Pressure Accessories</li> <li>15. Ambulance stretcher</li> <li>16. Preparation of Medicinerolley</li> <li>17. Primary Survey</li> <li>18. Measurement of Glasgow coma scale</li> <li>19. Assessment of brain death.</li> <li>20. Usage of glucometer</li> <li>21. Usage of pulse oximeter</li> <li>22. Cardiopulmonary Resuscitation</li> </ol> | <ol style="list-style-type: none"> <li>23. Endotracheal Intubation &amp; Laryngeal Mask Airway</li> <li>24. Lung ventilation and/or administering oxygen</li> <li>25. Use of End Tidal CO<sub>2</sub> Measuring Devices</li> <li>26. Monitoring Arterial Pulse Oximetry</li> <li>27. Urinary &amp; Gastric Catheterization</li> <li>28. Usage of Enteral feeding pumps</li> <li>29. Usage of Blood gas and electrolyte analyzer</li> <li>30. Resuscitation &amp; airway teaching learning simulators</li> <li>31. External cardiac resuscitation</li> <li>32. Use of Conventional Defibrillator and Monitors</li> <li>33. Use of Transcutaneous Pacing Devices</li> <li>34. Endotracheal Intubation &amp; Laryngeal Mask Airway</li> <li>35. Urinary &amp; Gastric Catheterization</li> <li>36. Resuscitation &amp; airway teaching learning simulators</li> <li>37. Airway devices- laryngoscopes, tube changers, percutaneous tracheostomy, bronchoscope sets.</li> <li>38. Resuscitation &amp; airway teaching learning simulators</li> <li>39. Airway devices-laryngoscopes, tube changers, percutaneous tracheostomy, bronchoscope sets.</li> <li>40. Usage of CPAP &amp; BIPAP devices</li> </ol> |
|---|---|

# **CURRICULUM FOR B.SC(Hons)**

## **EMERGENCY CARE TECHNOLOGY**

- 41. Endotracheal Intubation & Laryngeal Mask  
Airway
- 42. Tracheostomy Care

- 43. External cardiac resuscitation
- 44. Use of Conventional Defibrillator and Monitors
- 45. Use of Transcutaneous Pacing Devices

### **Recommended books:**

- EMERGENCY Medicine manual O John 2005
- 2. Rosins emergency medicine; concepts & clinical practice John A Marx.2005
- 3 Oxford cuck of emergency medicine.
- 4 Critical care care medicine At a Glance. Richard Leasch
- 5 Ons manua of intensive care by Andrew bersten.
- The ICU took of paul I marino,
- 7 Chunhill, s pocket book of intensive care by simon M. whitely
- 8 Quick antical care reference by Susan B Stillwell

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                            |              |            |
|-------------------------------|----------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>OBSTETRIC EMERGENCY</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>             | <b>Marks</b> | <b>200</b> |

## Course Objectives:

1. To gain experience in the analysis of data and management of hemodynamic and electrolyte instability, particularly shock, cardiac disease states, obstetrical emergencies and other medical and surgical crisis.
2. To Confidently handle crisis situations and safely and accurately perform all basic and advanced life support procedures

## Course contents:

Mother with dangerous fever during pregnancy and labor, Loss of fetal movement after 22 week of gestation, severe puerperal sepsis, Mother with pre-Eclampsia & Eclampsia, Mother with complication of labor. Fetal distress. Obstructed labor, Shouldered dystocia, prolapsed cord, uterine inversion, rupture uterus, mai position& presentation, lithotomy position, perimortem caesarian section, Failed intubation, Partogram, vento use delivery. forceps delivery, symphiosiotmy, caesarian section, Episiotomy, Manual removal of placenta, Repair of cervical telar.

Management of obstetrical emergency, medical emergency during pregnancy, mother with breathing difficulty, severe bronchial asthma, acute lower respiratory tract infection, heart failure, anaemia, sickle cell disease, management of diabetic ketoacidosis, anaphylaxis, pulmonary embolism, severe dehydration, Mother with severe gastroenteritis, mother with acute renal failure, mother in coma convulsion, HIV in pregnancy, emergency related to pregnancy, mother with severe abdominal pain, ectopic pregnancy, abortion, mother with severe abdominal pain and later pregnancy, mother with large ante partum hemorrhage, mother with large post partum hemorrhage.

## Practical:

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Cardiopulmonary Resuscitation</li> <li>2. ECG taking and monitoring</li> <li>3 Blood Pressure Recording</li> <li>4. Peripheral Venous Access</li> <li>5. Central Venous Access</li> <li>6. Intraosseous Access</li> <li>7. External cardiac resuscitation</li> <li>8. Use of Automated External Defibrillator</li> <li>9. Use of Conventional Defibrillator and Monitors<br/>External cardiac resuscitation</li> </ol> | <ol style="list-style-type: none"> <li>10. Use of Automated External Defibrillator</li> <li>11. Use of Conventional Defibrillator and Monitors</li> <li>12. Use of Transcutaneous Pacing Device</li> <li>13. Endotracheal Intubation &amp; Laryngeal Mask Airway</li> <li>14. Lung ventilation and/or administering oxygen</li> <li>15. Use of End Tidal CO<sub>2</sub> Measuring Devices</li> <li>16. Monitoring Arterial Pulse Oximetry</li> <li>17. Urinary &amp; Gastric Catheterization</li> </ol> |
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## Recommended books:

1. EMERGENCY Medicine manual O John 2005
2. Rosins emergency medicine; concepts & clinical practice John A Marx.2005
- 3 Oxford cuck of emergency medicine.
- 4 Critical care care medicine At a Glance. Richard Leasch
- 5 Ons manua of intensive care by Andrew bersten.
- The ICU took of paul I marino,
- 7 Chunhill, s pocket book of intensive care by simon M. whitely
- 8 Quick antical care reference by Susan B Stillwell

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                            |              |            |
|-------------------------------|----------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Disaster Management</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>152+114</b>             | <b>Marks</b> | <b>200</b> |

**Course objectives:**

1. To acquire knowledge and clinical competence in performing triage multiple tasks of emergency medicine, trauma, and disaster management.
2. To demonstrate knowledge of human structure, function, and disease process.
3. To introduce to the students the know-how of the subject of epidemiology in order to apply the knowledge of the subject regarding the community and community relate disease.
  1. Student will be able to analyze the burn surface area depth & assess the situation, obtain a basic history and do physical examination, manage burn care, and, if needed, extricate the patient.
4. To confidently handle crisis situations and safely and accurately perform all basic and advanced life support procedures.

**Course contents:**

Disaster management, types of disaster, preparation for disaster, transfers to definitive care, Log Rolling & transfer hours, Triage & levels of triage, Community Medicine, Immunization, Vaccination, Communicable & Non-Communicable disease, Mode of Infection & transmission, Disease Prevention. Introduction to epidemiology, Determinants: Primary and Secondary, Clinical epidemiology, Occupational epidemiology, Importance of epidemiology, Definitions of common terms related to epidemiology, Health indication. Burn management, Burn types, Management of bums and scald, Management of electric burn and shock, Diet & feed balance and its calculation administration & monitoring, Suicidal attempt in poisoning. Animal Bite management, Organophosphate poisoning, Wheat pill intake, Black stone intake poisoning, Gastric Lavage, Inhalational poisoning, Usage of Charcoals & Olive Oils, Inorganic poisoning.

**Practical:**

1. Preparation of rescue ambulance equipped with all emergency drugs and instrumentation.
2. Usage of Portable Suction
3. Usage of Portable Vital Signs Monitor
4. Usage of Transport Incubators
5. Advance Pediatric life support
6. Log rolling.
7. Application of rule of nine for estimation of total burn surface area.
8. Fluid input & output Recording & measurement.
9. ECG taking and monitoring
- 10 Blood Pressure Recording
- 11 Peripheral Venous Access
12. Central Venous Access
- 13 Intraosseous Access
- 14 External cardiac resuscitation
- 15 Monitoring Arterial Pulse Oximetry
- 16 Untary & Gastric Catheterization
- 17 Usage of internal & external feeding pumps

**Recommended books:**

- HYNDMAN, Donald and Hyndman, David (2010) Natural Hazards and Disasters. Brooks Cole, 3rd Revised Edition. Stamford, Connecticut, USA.
- KREBS, Robert E. (2003) the Basics of Earth Science Greenwood, Westport, Connecticut, USA
- STRAHLER, Alan H. and Strahler, Arthur (2004) Physical Geography: Science and Systems of the Human Environment John Wiley & Sone 3rd Edition. Hoboken New Jersey, USA.
- Public Health by liyas Ansar

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

Public Health by J Park

|                               |   |              |            |
|-------------------------------|---|--------------|------------|
| <b>Course Title:</b>          | <b>Surgical &amp; Trauma Management</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>                          | <b>Marks</b> | <b>200</b> |

**Course objectives:**

1. To save patient from secondary injury and enable student to deliver efficient care to acutely ill patient in surgical emergency.
2. To acquire common sense, attention to detail prioritizing skills and anticipation of potential problem in surgical emergency.
3. To give any patient requiring an injection or having a contagious disease or operative procedure the student will maintain asepsis in all cases.
4. To equip the student with professional knowledge, skill, techniques & ethical values to enable them to apply their acquired expertise in trauma situations.
5. To confidently handle crisis situations safely and accurately perform all basic and advanced life support procedures.
6. To deliver efficient care to acutely ill traumatically injured patient in trauma centers

**Course contents:**

Management of Acute Air Way Bleed. Management of Gastrointestinal Intestinal Upper & Lower Bleed. Management of Hemorrhagic & Non Hemorrhagic Shock, Hemorrhagic Control, Management of Pneumothorax, Hemothorax & Hydrothorax, Application of Chest Tube Insertion, Drainage of abnormal Pleural Fluid in Respiratory Emergency & Compromise, Indication and of Endotracheal intubation, Difficult Intubation & its Complication, Management of Laceration Abrasions & Bruises. Management of head & neck Injury in Emergency, Management of abdominal injury, Management of unstable spine & protection, Hepatic coma, Pancreatitis, Indication of tracheotomy Tube its Complication & care, Indications & application of central venous Line & its pressure measurement, Assessment of brain death. Indication of Peripheral Venous Access, Intra Osseous Access. Venous Cut Down in Dehydrated Patients & its Complications, Orthopedic Emergency and its Management, Administration of drugs, Suturing skills, Management of bomb blast injured patients, posturing & positions of patient in certain diseases. Basic concept about trauma, Pre Hospital Care, Trauma types. Initial assessment & management, Primary survey, Trauma score & Trauma flow sheet, Trauma management pre & in hospital phase, Injury prevention, Bio mechanics of injury, Triage, Mass causality & multiple causality. Chest trauma, Head trauma, Neck trauma Musculoskeletal trauma, Air way management with cervical injury, Disability and neurological examination, Circulation & hemorrhage control, Breathing & ventilation, Spine & Sprial cord trauma, Abdominal trauma. Management of obstetrical trauma, Injuries due to burns & cold. Near drowning Resuscitation History. Physical examination, Primary survey & resuscitation. Air way breathing ventilation & Circulation. Adjuncts to primary survey & resuscitation, ECG Monitoring. Urinary & gastric catheters, Monitoring Ventilation, Arterial blood gases interpretation, Pulse Oximeter, Blood pressure, Log rolling patient transfer Secondary survey. Adjuncts to secondary survey, RE-evaluation, Definitive care.

**Practical:**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1 Usage of Enteral feeding pumps</li> <li>2. Usage of Blood gas and electrolyte analyzer</li> <li>3 Resuscitation &amp; airway teaching learning simulators 1<br/>Airway devices-laryngoscopes, lube changers,<br/>percutaneous tracheostomy/ bronchoscope rats</li> <li>5. Hemodialysis machine</li> <li>6. Cfreadiopulmonary Resuscitation</li> <li>7 ECG taking and monitoring</li> <li>8. Blood Pressure Recording</li> <li>9. Usage of Enteral feeding pumps</li> <li>10. Usage of Blood gas and electrolyte analyzer</li> <li>11. Resuscitation &amp; airway teaching learning simulators</li> <li>13. Hemodialysis machine</li> <li>12. Ainvay devices-aryngoscones, ube changers,<br/>pernitaneus tracheostormy bronchescape sata</li> <li>13. Cardiopulmonary Resuscitation</li> <li>14. Taking and monitoring</li> <li>15. Blood Pressure Recording</li> <li>16. Recognize trauma emergency, assess the situation,<br/>obtain a basic history and physical examination,</li> </ol> | <ol style="list-style-type: none"> <li>manage emergency care, and, if needed, extricate the patient.</li> <li>17. Blood Pressure Recording</li> <li>18. Peripheral Venous Access</li> <li>19. Central Venous Access</li> <li>20. Cardiopulmonary Resuscitation</li> <li>21. ECG taking and monitoring</li> <li>22. Usage of Infusion pumps</li> <li>23. Usage of Defibrillator</li> <li>24. Usage Patient monitors</li> <li>25. Usage of Blood Pressure Accessories</li> <li>26. Portable Suction</li> <li>27. Portable Vital Signs Monitor</li> <li>28. Patient transfer trolleys</li> <li>29. Ambulance stretcher</li> <li>30. Preparation of Medicine trolley</li> <li>31. Preparation dressing trolley</li> <li>32. Trauma flow sheet</li> <li>33. Log rolling</li> </ol> |
|---|---|

# **CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY**

## **Recommended books:**

• HYNDMAN, Donald and Hyndman, David (2010) Natural Hazards and Disasters.

Brooks Cole, 3rd Revised Edition. Stamford, Connecticut, USA.

KREBS, Robert E. (2003) the Basics of Earth Science Greenwood, Westport, Connecticut, USA

STRAHLER, Alan H. and Strahler, Arthur (2004) Physical Geography: Science and Systems of the Human Environment John Wiley & Sons 3rd Edition. Hoboken New Jersey, USA.

Public Health by liyas Ansar

Public Health by J Park

**CURRICULUM FOR B.SC(Hons)  
EMERGENCY CARE TECHNOLOGY**

**4<sup>th</sup> YEAR B.SC EMERGENCY CARE TECHNOLOGY**

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |   |              |            |
|-------------------------------|---|--------------|------------|
| <b>Course Title:</b>          | <b>Biostatistics &amp; Research Methodology</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>152+152</b>                                  | <b>Marks</b> | <b>150</b> |

## **COURSE SUBJECTIVE:**

Introduction the students a significance of research methodology to the students foundation, concept of measurement, design clinical research and health systemresearch.

To introduce to the student the significance of bio-statistics their topic in univariate statistics means basic concept, describing and exploring data, normal distribution, sapling distribution and hypothesis testing, basic concept of probability and categorical data CH and application of statistics and social research.

## **COURSE CONTENTS:**

### **PART-1 FOUNDATION**

Introduction to research (in simple term and a scientific term), concept of research, why do need research, advantage of research, identification of research need and itsqualities, component of research, ethical and legal aspect of research and objective of research (definition, purpose, structure)

### **PART-2**

#### **(A) SELECTION OF TOPIC**

#### **The criteria points of prioritization of topic**

- |   |                              |                       |     |
|---|------------------------------|-----------------------|-----|
| 1. Relevance  | ii. Avoidance of duplication | iii. Physibility      | iv. |
| Political acceptability v.  | Applicability                | vi. Cost efficiencies |     |
| vii. Ethical consideration and scales for rating research topic mentioned |                              |                       |     |

above

### **WORK PLAN**

its contents, how to developed a work plan, what factor should be kept in mind while preparing research work plan

### **© BUDGET REQUIRED FOR RESEARCH WORK**

Why it is needed, wok should be taken in to consideration, literature searching, statistical help, material, type of manuscript, printing of manuscript for submissionand postage

### **PART-3**

#### **CONCEPTS OF MEASUREMENT**

Principals and reliability of measurement, errors and sources of measurement, types of measurement, measure of disease frequency and screening (introduction, validity and screening test)

### **DESIGNING CLINICAL RESEARCH**

Studies design (introduction, selection of design), research questionnaire, validity and reliability of research finding, confounding factors, strategies to deal with threatsto validity.

## **Biostatiscs**

# **CURRICULUM FOR B.SC(Hons)**

## **EMERGENCY CARE TECHNOLOGY**

Topics in univariate statistics

A. basic

1. Introduction

2. important terms

3. senses

4. method uses for taking census, information collection during census, method of estimating the population of any year

5. measurement scale

B. describing and exploring data

1. measures of central tendency and variability

2. health statistics (proportion, ratio, rate)

3. percentiles, quartiles and deciles

C. normal distribution

1. the standard normal distribution SND

2. using tables of SND

3. measures related to 'Z' scores

D. sampling distribution and hypothesis testing

E. basic concepts of probability

F. data collection (purpose and technique)

G. categorical data and numerical data

application of statistics in social research

percentages, measure of central tendencies

A. means, Median and Mode

Quartile, decile and percentile

**(C) HYPOTHESIS TESTING**

**(D) SAMPLING**

# **CURRICULUM FOR B.SC(Hons)**

## **EMERGENCY CARE TECHNOLOGY**

|                               |   |              |            |
|-------------------------------|---|--------------|------------|
| <b>Course Title:</b>          | <b>Transportation of Critical Ill Patient</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>                                | <b>Marks</b> | <b>150</b> |

### **Course Objectives:**

- To Direct and coordinate the transport of the patient by selecting the best available method(s) in conjunction with medical command authority/protocol.
- To Record in writing the details related to the patient's emergency care and the incident.
- To Communicate with the medical care facility receiving the patient about the patient's condition, status, and arrival time

### **Course contents:**

Transportation of critical ill patient enter and intra hospital, Transportation of critical ill patient for surgical procedure and for diagnostic evaluation with all emergency medicine.

### **Practical:**

- Resuscitation & airway teaching learning simulators
- Usage of Portable Suction
- Usage of Portable Vital Signs Monitor
- Usage of Patient transfer trolleys
- Ambulance stretcher
- Preparation of Medicine trolley
- Preparation Dressing trolley
- Usage of infusion pumps

### **RECOMENDED BOOKS:-**

1. EMERGENCY Medicine manual.O .John.2005
2. Rosens emergency medicine; concepts & clinical practice John.A Marx.2005
3. Oxford book of emergency medicine.
4. Critical care care medicine At a Glance. Richard Leasch.
5. Oh;s manual of intensive care by Andrew bersten.
6. The ICU book of paul l marino.
7. Churchill,s pocket book of intensive care by simon M. whitely.
8. Quick critical care refrence by Susan B Stillwell.

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |  |              |            |
|-------------------------------|--|--------------|------------|
| <b>Course Title:</b>          | <b>Shock Management BLS &amp; ACLS</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>152+152</b>                         | <b>Marks</b> | <b>150</b> |

**Course Content:**

To enable the student to perform accurate & effective Cardio Pulmonary Resuscitation to secure life in time without any permanent loss.

To gain experience in the analysis of data and management of hemodynamic and electrolyte instability, particularly in cardiac arrest and cardiac disease states

- Basic life support, Advance cardiac life support, Basic trauma life support, Advance trauma life support, New born life support, pediatric life support, Cardio pulmonary resuscitation.
- Definition and Pathophysiology of Shock
- Classification of Shock
- Hypovolemic Shock
- Cardiogenic Shock
- Distributive Shock
- Obstructive Shock
  
- Initial Assessment (ABCDE Approach)
  - Airway: Ensuring patency, signs of obstruction.
  - Breathing: Respiratory rate, oxygen saturation, use of accessory muscles.
  - Circulation: Heart rate, blood pressure, capillary refill, peripheral pulses.
  - Disability: Neurological status, Glasgow Coma Scale (GCS).
  - Exposure: Identifying external signs of trauma, infection, or other causes.
- Diagnostic Tools and Tests
- General Management
- Specific Management Based on Type of Shock
- Shock in Pediatric Patients
- Shock in Pregnancy
- Elderly Patients

Practical:

1. Use of Automated External Defibrillator
2. Use of Conventional Defibrillator and Monitors
3. Measurement of central venous pressure
4. Insertion of arterial line
5. ECG taking and monitoring
6. Endotracheal Intubation & Laryngeal Mask Airway
7. Lung ventilation and/or administering oxygen
8. CPR on the simulators

Recommended books:

**Recommended Reading and Resources**

- Textbooks on Emergency Medicine and Critical Care
- Clinical Guidelines from Professional Organizations (e.g., American College of Emergency Physicians, Surviving Sepsis Campaign)
- Peer-Reviewed Journal Articles
- Online Courses and Webinars on Shock Management
- Rosens emergency medicine; concepts & clinical practice John. A Marx.2005
  - Oxford book of emergency medicine.
  - Critical care care medicine At a Glance. Richard Leasch.

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                          |              |            |
|-------------------------------|--------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Infection Control</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>           | <b>Marks</b> | <b>150</b> |

## Course Objectives:

- To introduce the students with basic concepts in infection control.
- To introduce the students with infection control principles and practices.
- To introduce the students with importance of immunization and hand hygiene in infection control.
- To introduce the students with the role of clinical laboratory in infection control.

## Course contents:

Introduction to infection control, principle of infection control, source and transmission of infection, infection in the hospital environment, immunization prophylaxes, exposure prophylaxes, sterilization, disinfection and antisepsis, practical disinfection, epidemiology of infectious disease, antimicrobial agents, antibiotic and their uses (prophylactic, empirical, and therapeutic), antibiotic resistance and policy, principles of laboratory diagnosis of infectious diseases, biomedical waste management, biosafety levels, hand hygiene, standard precautions and PPE.

### Practical:

1. Demonstration of hand washing and hand rubbing technique.
2. Preparation of different disinfection and antiseptic solutions.
3. Demonstration of biomedical waste managements in hospitals.
4. Demonstration of cleaning and disinfection of working premises.
5. Demonstration of how to handle spills and aseptic handling.
6. Demonstration of standard precautions and PPE.

### Recommended Books:

- Fundamentals of Infection Prevention and Control: Theory and Practice. Weston, D., Wiley-Blackwell, 2013.
- Sherris Medical Microbiology: An Introduction to Infectious Diseases. Ryan, K. J., Ray, C. G., 4th ed. McGraw-Hill, 2003.
- District Laboratory Practice in Tropical Countries, Part1 & Part 2. Cheesbrough, M., 2nd ed. Cambridge University Press, 2006.
- Medical Microbiology and Infection at a Glance. Gillespie, S., H., Bamford, K., B., 4th ed. Wiley-Blackwell, 2012.

# CURRICULUM FOR B.SC(Hons) EMERGENCY CARE TECHNOLOGY

|                               |                                       |              |            |
|-------------------------------|---------------------------------------|--------------|------------|
| <b>Course Title:</b>          | <b>Neonatal and Pediatric Surgery</b> |              |            |
| <b>Lectures/Demonstration</b> | <b>228+114</b>                        | <b>Marks</b> | <b>150</b> |

## Course Objectives:

- To develop the knowledge, skills and attitudes necessary to be clinically proficient in the care of the acutely ill or injured child.
- To recognize a neonatal/pediatric emergency, assess the situation, obtain a basic history and physical examination, manage emergency care, and, if needed, extricate the patient.

## Course contents:

Structural approach towards a serious ill or injured child, Child with breathing difficulty, Asthma, Child with abnormal pulse rate and rhythms, Convulsing child, child in shock, Shock types and its management, Child with burns and Scald, Child with decrease conscious level, Child with abdominal Trauma, Acute chest trauma, Child with acute spinal cord injury, Child with head injury and its management, Near Drowning.

## Practical:

1. Usage of Blood gas and electrolyte analyzer
2. Resuscitation & airway teaching learning simulators
3. Usage of Portable Suction
4. Usage of Portable Vital Signs Monitor
5. Usage of Transport Incubators
6. Advance Pediatric life support
7. Neonatal life support
8. Log rolling.

## Recommended books:

- Nelson Text Book of Pediatrics 20<sup>th</sup> edition.
- Text Book of Pediatrics by Prof Dr Azam Khan.
- EMERGENCY Medicine manual.O .John.2005
- Rosens emergency medicine; concepts & clinical practice John.A Marx.2005
- Oxford book of emergency medicine.
- Oh;s manual of intensive care by Andrew bersten.
- The ICU book of paul I marino.