

Syllabus and Curriculum
of
Diploma in Emergency and Trauma Care
Technician course

(To be implemented From 2015 - 16 session)

Uttar Pradesh State Medical Faculty, Lucknow.

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OBJECTIVES OF THE COURSE

To prepare a **Emergency and Trauma Care technician** who –

- Can handle all types of medical & surgical emergencies as assistant to the doctor.
- Can give first aid or primary treatment in emergency & trauma cases.
- Is well aware of concepts of “Golden hours”, “Stay & play”, “Scoop & run”.
- Can very well perform CPR.
- Can transport patients safely to hospital.
- Can safely use emergency drugs.

Outline of Curriculum
of
Diploma in Emergency and Trauma Care
Technician course

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : Syllabus covers -

1. General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).
2. Only basics of relevant Pathology, Pharmacology & Microbiology.

Second paper : Syllabus covers -

1. Detailed Osteology of human body.
2. Vital recording, first aid, bandaging & triage.
3. Hand hygiene & prevention of cross infection.
4. Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).

FIRST YEAR

PRACTICAL (Classes: 1 PM to 4 PM)

Practical classes will be after lunch; from 1 PM to 4 PM.

Students must present in the hospital for practicals.

During first year, they should be there only as “Observers” in practical classes.

Following subjects must be taught; though there will not be any exam from these-

1. Basic Computer skills.
2. Basic English.
2. **Soft skills like** - Interpersonal relationship skills & moral education.

Outline of Curriculum
of
Diploma in Emergency and Trauma Care
Technician course

SECOND YEAR

THEORY (classes:9 AM to 12 Noon)

First paper : Syllabus covers -

1. Only relevant surgical & medical conditions (relevant to ETCT technician).
2. Basic Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion, Ryle's tubing.

Second paper : Syllabus covers -

1. Various procedures done in emergency & critical units & drugs used.
2. Basics of CSSD & sterilization practices, biomedical waste management.
3. Basic biomedical engineering physics of equipment & instruments used in emergency & critical care.

SECOND YEAR

PRACTICAL (classes:9 AM to 12 Noon)

Practical exams syllabus should cover-

- Hands on training of C-A-B of trauma.
- Hands on training of safe transportation of various types of emergency patients.
- Hands on training of care of a comatose patients.
- Hands on training of Various types of first aid & bandaging.
- Hands on training of Nebulization, Catheterization, O₂ inhalation, Nasogastric intubation, Glucometer.
- Hands on training of Dressing & help in suturing.
- Hands on training of assisting Oro-pharyngeal intubation.
- Hands on training of assisting CVP line insertion.
- Hands on training of assisting Tracheostomy.
- Hands on training of dealing with various emergencies.
- Hands on training of documentation and consents etc.

ELIGIBILITY CRITERIA FOR ADMISSION & DURATION OF THE COURSE

COURSE DURATION:-

- It is 2 years, **full time** Diploma Course.

ELIGIBILITY:-

- Candidate must have passed 12th with
Physics, Chemistry, Biology

Or

Physics, Chemistry, Maths

with 35% marks in Intermediate exams.

(From UP board or any other recognised board).

- Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for the admission.

SCHEDULE OF EXAMINATION

FIRST YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	<p>1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).</p> <p>2.Only basics of relevant Pathology, Pharmacology & Microbiology.</p>	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	<p>1. Detailed Osteology of human body.</p> <p>2.Vital recording, first aid, bandaging & triage.</p> <p>3.Hand hygiene & prevention of cross infection.</p> <p>4.Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).</p>	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF EXAMINATION

SECOND YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	<p>1.Only relevant surgical & medical conditions (relevant to OT technician).</p> <p>2.Basic Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion, Ryle's tubing.</p>	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	<p>1.Various procedures done in emergency & critical units & drugs used.</p> <p>2.Basics of CSSD & sterilization practices, biomedical waste management.</p> <p>3.Basic biomedical engineering physics of equipment & instruments used in emergency &critical care.</p>	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF COURSE

(List of holidays, Total hours, Subject wise allotment of hours)

- **List of Holidays:-**

Sundays	- 52 days
Summer vacation	- 10 days
Winter vacation	- 10 days
Gazetted holidays	- 23 days
Preparatory holidays	- 10 days
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Total Holidays	- 105 days
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- **Total Hours :-**

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (after deduction of holidays)	- 260 days or - 1560 Hours

SCHEDULE OF COURSE

Subject wise allotment of hours

FIRST YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	250 Hrs
	2.Only basics of relevant Pathology, Pharmacology & Microbiology.	140 Hrs
<u>Second Paper Theory</u>	1. Detailed Osteology of human body.	40 Hrs
	2. Vital recording, first aid, bandaging & triage.	230 Hrs
	3.Hand hygiene & prevention of cross infection.	10 Hrs
	4.Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).	40 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs
<u>Theory: Other Subjects</u> (These subjects must be taught; though there will not be any exam from these)	1.Basic Computer skills.	30 Hrs
	2.Basic English.	30 Hrs
	3.Soft skills like - Interpersonal relationship skills & moral education	10 Hrs

SCHEDULE OF COURSE

Subject wise allotment of hours

SECOND YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1. Only relevant surgical & medical conditions (relevant to ETCT technician).	450Hrs
	2. Basic Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion, Ryle's tubing.	20 Hrs
<u>Second Paper Theory</u>	1. Various procedures done in emergency & critical units & drugs used.	230 Hrs
	2. Basics of CSSD & sterilization practices, biomedical waste management.	20 Hrs
	3. Basic biomedical engineering physics of equipment & instruments used in emergency & critical care.	60 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs

Details of Curriculum for First Year Diploma in Emergency and Trauma Care Technician

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	1. General Orientation about parts of human body. Various terms used in Anatomy. Total numbers of bones, their names & location. Basic idea about organization of body ,from cell to organ systems.	06 Hrs
	2. Structure of Animal cell, Cell organelles & their functions	06 Hrs
	3. Human tissue, types, structure & functions.	10 Hrs
	4. Osteology: Names, location, identification and basic details of all bones. (Details of skull bones is not required).	20 Hrs
	5. Joints: types, basic structure & examples.	06 Hrs
	6. Skin & appendages.	02 Hrs
	7. GIT: : Location, Gross structure, various parts & their functions. Details of process of food ingestion, digestion, absorption & defaecation. (Microscopic structure is not required.)	10 Hrs
	8. Respiratory tract: Location, Gross structure, various parts & their functions. Details of breathing mechanism, different respiratory volumes. (Microscopic structure is not required.)	30 Hrs
	9. Urinary tract: Gross structure, various parts & their functions. (Microscopic structure is not required.) Process of urine formation & voiding.	20 Hrs
	10. Male reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.)	10 Hrs
	11. Female reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.) Menstrual cycle.	10 Hrs

**Details of Curriculum for First Year
Diploma in Emergency and Trauma Care Technician**

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	12. Endocrine system: Hormones secreted by Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex, Adrenal medulla, Gonads & functions of different hormones. (Details of structure of these glands not required).	10 Hrs
	13. Gross structure of brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	10 Hrs
	14. Blood: Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system.	10 Hrs
	15. Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required).	20 Hrs
	16. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	20 Hrs
	17. Lymphatic system: Structure & Functions.	10 Hrs
	18. Inumune system: Components & various mechanisms of defense.	10 Hrs

Details of Curriculum for First Year Diploma in Emergency and Trauma Care Technician

PAPER 1st Theory	Topics	Hours.
2. Only basics of relevant Pathology, Pharmacology & Microbiology.	1. Basic steps of Acute & chronic inflammation and Healing of wound.	05 Hrs
	2. Basics of Necrosis & apoptosis.	02 Hrs
	3. Basics of Shock.	02 Hrs
	4. Basics of Disorders of blood coagulation system.	08 Hrs
	5. Basics of Disorders of Immune system of body.	05 Hrs
	6. Modes of disease transmission & prevention of infection.	05 Hrs
	7. Sterilization & methods of sterilization used in hospitals.	10 Hrs
	8. Basic idea about types of Bacteria, Virus, Fungi.	20 Hrs
	9. Routes of drug administration.	02 Hrs
	10. Adverse effects & side effects of drugs.	02 Hrs
	11. Basic idea of Analgesics : Opioid & NSAIDs.	02 Hrs
	12. Basic idea of Drugs use in Cough & expectoration.	01 Hrs
	13. Basic idea of Drugs used in B. asthma & COPD.	02 Hrs
	14. Basic idea of Drugs used in GIT.	03 Hrs
	15. Basic idea of Anti Microbials.	20 Hrs
	16. Basic idea of Anti H-1 Histaminics & Corticosteroids.	01 Hrs
	17. Drugs used in anaemia.	02 Hrs
	18. Anaesthetic agents(LA&GA).	10 Hrs
	19. Muscle relaxants.	05 Hrs
	20. Drugs used in emergency & critical care.	20 Hrs
	21. IV fluids.	10 Hrs

**Details of Curriculum for First Year
Diploma in Emergency and Trauma Care Technician**

PAPER 2nd Theory	Topics	Hours.
1.Detailed Osteology of human body.	1. Skull bones.	10 Hrs
	2. Vertebral Column.	03 Hrs
	3. Ribs.	02 Hrs
	4. Sternum & hyoid.	01 Hrs
	5. Scapula	02 Hrs
	6. Humerus.	02 Hrs
	7. Radius	02 Hrs
	8. Ulna	02Hrs
	9. Carpals, metacarpals & phalanges.	03Hrs
	10. Hip bone.	03Hrs
	11. Femur.	02Hrs
	12. Patella	01Hrs
	13. Tibia	02Hrs
	14. Fibula	02Hrs
	15. Tarsals, metatarsals & phalanges	03Hrs

Details of Curriculum for First Year Diploma in Emergency and Trauma Care Technician

PAPER 2nd Theory	Topics	Hours.
2. Vital recording, first aid, bandaging & triage.	1. Vitals recording :- Manual & with multipara monitors.	10 Hrs
	2. Concept of Golden hours and C-A-B.	05 Hrs
	3. Safe Transportation of patients of various types of trauma & emergencies.	35 Hrs
	4. How to record ECG.	15 Hrs
	5. Use of defibrillator.	5 Hrs
	6. First aid & Management of C/o Fractures.	25 Hrs
	7. First aid & Management of C/o Snake bite / insect bite.	05 Hrs
	8. First aid & Management of C/o Poisonings of different types.	15 Hrs
	9. First aid & Management of C/o bleeding (External).	10 Hrs
	10. First aid & Management of C/o bleeding (Internal).	05 Hrs
	11. First aid & Management of C/o Cardiac arrest/Angina / MI.	05 Hrs
	12. First aid & Management of C/o Stroke.	05 Hrs
	13. First aid & Management of C/o Epilepsy / Seizures.	05 Hrs
	14. First aid & Management of C/o Burn.	05 Hrs
	15. First aid & Management of C/o Electric Shock.	05 Hrs
	16. First aid & Management of C/o Asphyxia.	05 Hrs
	17. First aid & Management of C/o Heat stroke /frost bite.	05 Hrs
	18. First aid & Management of C/o Head injury.	05 Hrs
	19. Concept of TRIAGE.	10 Hrs
	20. Common types of bandaging.	50 Hrs

**Details of Curriculum for First Year
Diploma in Emergency and Trauma Care Technician**

PAPER 2nd Theory	Topics	Hours.
3.Hand hygiene & prevention of cross infection.	1. Hand hygiene & method of Hand washing.	05 Hrs
	2. Prevention of cross infection.	05 Hrs

PAPER 2nd Theory	Topics	Hours.
4.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	1. Code blue.	05 Hrs
	2. Details of basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	35 Hrs

Curriculum
for
Practical :- First Year
Diploma in Emergency and Trauma Care Technician

	Topics
Practical	Hands on training of:- 1. Vitals recording (Manual & with multipara monitors).
	2. Working as Nursing assistant.
	3. Safe transportation of various types of emergency patients.
	4. Nursing procedures like Nebulization Urinary Catheterization, Ryle's tube insertion.
	5. Observership for different types of first aid, bandaging & management.
	6. C-A-B in case of trauma and emergency.

Details of Curriculum for Second Year Diploma in Emergency and Trauma Care Technician

PAPER 1st Theory	Topics	Hours.
1.Only relevant surgical & medical conditions (relevant to ETCT technician).	1. History taking. General examination of the patient. Filling Case-sheet. Common clinical words. Glas Gow coma scale.	15 Hrs
	2. Hypertension:- Def, Causes, Pathology, Clinical features, Investigation & Management.	05 Hrs
	3. Hypotension :- Def, Causes, Pathology, Clinical features, Investigation & Management.	02 Hrs
	4. Diabetes mellitus :- Def, Causes, Pathology, Clinical features, Investigation & Management.	05 Hrs
	5. <u>Diseases of blood</u> :- Anaemia, Basics of coagulation Bleeding disorders & Haemophilia.	10 Hrs
	6. <u>Respiratory Tract</u> :- Pneumonia, Tuberculosis, B.asthma, COPD, Bronchiectasis, Collapse of lung, Pneumonitis, Pleural effusion, Pneumothorax, Empyema thoracis, Cancer lung.	30 Hrs
	7. <u>Diseases of GIT & Liver & GB</u> :-Reflux Oesophagitis, Peptic ulcers, Gastritis, Intestinal Obstruction, Hepatitis, Cirrhosis of liver, Cholecystitis, appendicitis, Hernia, Piles, Fissure, Fistula, Pancreatitis, Pancreatic Cancer.	40 Hrs
	8. <u>Diseases of Nervous system</u> :- Stroke, Meningo-encephalitis, Glasgow coma scale, Epilepsy, Facial n. paisy.	30 Hrs
	9. <u>Diseases of Urinary tract</u> :- Urolithiasis, Benign prostatic hyperplasia, Hydrocoele, Cancer prostate, urethral stricture, Hypo & epi-spadias.	30 Hrs
	10. <u>Endocrine system</u> :- Diabetes mellitus, hypo & Hyper thyroidism.	10 Hrs
	11. <u>Miscellaneous</u> :- Hypo & Hyper Natraemia, Hypo & Hyper Kalaemia, Hypo & Hyper Calcaemia.	10 Hrs
	12. <u>Infections diseases</u> :- TB, Typhoid, Malaria, Dengue fever, Leprosy, AIDS, Amoebiasis.	30 Hrs

Details of Curriculum for Second Year Diploma in Emergency and Trauma Care Technician

PAPER 1st Theory	Topics	Hours.
1.Only relevant surgical & medical conditions (relevant to ETCT technician).	13. Head injury & Intracranial bleed.	30 Hrs
	14. D's of G& O: Caesarian section, fibroid uterus, Cancer uterus, prolapse uterus, PID, Emergency delivery.	20 Hrs
	15. Basics about fracture & management.	50 Hrs
	16. PIVD,Potts spine.	10 Hrs
	17. Eye d's : Cataract, Glaucoma, chemical injuries.	15 Hrs
	18. ENT:. CSOM, ASOM, Laryngeal tumor, Nasal poyp, DNS.	15 Hrs
	19. Basic idea of Thoracic injury.	13 Hrs
	20. Basic idea of Blunt & penetration abdominal injuries.	20 Hrs
	21. Over all approach to & care of multi trauma patient.	20 Hrs
	22. Poisoning (Common ones)	30 Hrs
	23. Hanging and strangulation.	
	24. Documentation aspects in case of emergency patients.	10 Hrs

**Details of Curriculum for Second Year
Diploma in Emergency and Trauma Care Technician**

PAPER 1st Theory	Topics	Hours.
2. Basic Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization,, catheterisation, IV infusion, Ryle's tubing.	1. Temperature monitoring & Fever.	02 Hrs
	2. Pulse monitoring.	01 Hr
	3. BP monitoring.	01 Hr
	4. Respiration monitoring.	01 Hr
	5. Types of Injection routes.	01 Hr
	6. IM Injection.	01 Hr
	7. IV Injection.	01Hr
	8. SC Injection.	01 Hr
	9. Oxygen Therapy.	03 Hrs
	10. Nebulization	01 Hr
	11. IV Infusion (Also with infusion pump).	01 Hr
	12. Care of Unconscious patient.	02 Hrs
	13. Urinary Catheterization.	03 Hrs
	14. Nasogastric Intubation.	03 Hrs

Details of Curriculum for Second Year Diploma in Emergency and Trauma Care Technician

PAPER 2nd Theory	Topics	Hours.
1. Various procedures done in emergency & critical units & drugs used.	1. C-A-B in case of trauma/emergency.	40 Hrs
	2. Transport & shifting of patient.	30 Hrs
	3. Use of multipara-monitors, ECG machine, Glucometers.	20 Hrs
	4. Care of an unconscious patient	20 Hrs
	5. Thoracocentesis.	10 Hr
	6. Abdominal tapping.	10 Hrs
	7. CVP line insertion.	10 Hrs
	8. Oropharyngeal intubation.	10 Hrs
	9. Tracheostomy.	10 Hrs
	10. Oxygen therapy: Tools and technics.	15 Hrs
	11. Use of Bag & mask ventilltion.	05 Hrs
	12. Use of Bi-PAP, C-PAP.	10 Hrs
	13. Use of ventillators.	10 Hrs
	14. Use of Defibrillator.	03 Hrs
	15. Common instruments(sutures and needles) used in stitching.	05 Hrs
	16. Sponging of patient.	02 Hrs
	17. Use of air/water mattress.	05 Hrs
	18. Lumbar puncture.	05 Hrs
	19. Various types of record keeping/consents etc.	10 Hrs

**Details of Curriculum for Second Year
Diploma in Emergency and Trauma Care Technician**

PAPER 2nd Theory	Topics	Hours.
2.Basics of CSSD & sterilization practices, biomedical waste management.	1. Various methods of Sterilization.	10 Hrs
	2. Aseptic practices.	05 Hrs
	3. Basics of Bio-medical waste management.	05 Hrs

PAPER 2nd Theory	Topics	Hours.
3.Basic biomedical engineering physics of equipment & instruments used in emergency & critical care.	1. Multipara monitors.	05 Hrs
	2. Ventilators.	05 Hrs
	3. Bi-PAP, C-PAP	05 Hrs
	4. Infusion pump	05 Hrs
	5. Nebulizers.	03 Hrs
	6. Dialysis machine	07 Hrs
	7. Pulse Oxymeter	03 Hrs
	8. Cardiac monitor	02 Hrs
	9. Defibrillator	05 Hrs
	10. Glucometer	03 Hrs
	11. Oxygen concentrator	07 Hrs
	12. Medical Gas supply	10 Hrs

Curriculum
for
Practical :- Second Year
Diploma in Emergency and Trauma Care Technician

	Topics
Practical	1. Hands on training of C-A-B of trauma.
	2. Hands on training of safe transportation of various types of emergency patients.
	3. Hands on training of care of a comatose patients.
	4. Hands on training of Various types of first aid & bandaging.
	5. Hands on training of Nebulization, Catheterization, O ₂ inhalation, Nasogastric intubation, Glucometer.
	6. Hands on training of Dressing & help in suturing.
	7. Hands on training of assisting Oro-pharyngeal intubation.
	8. Hands on training of assisting CVP line insertion.
	9. Hands on training of assisting Tracheostomy.
	10. Hands on training of dealing with various emergencies.
	11. Hands on training of documentation and consents etc.