

KERALA PARA MEDICAL COUNCIL

**SYLLABUS
ON
DIPLOMA IN
OPERATION THEATRE TECHNOLOGY
(DOTT)**



DIPLOMA IN OPERATION THEATRE TECHNOLOGY (DOTT)

I: Introduction

A variety of electrical and electronic equipment are in use in modern operation theatres for monitoring anesthesia & surgical procedures. The success of the procedures and safety of patients depend largely on the reliability, smooth and trouble free performance of these equipments and skilled anesthesia. There is increased need for qualified and trained hands in the field. This course is aimed at satisfying this need of the state.

II. Curriculum

1. General informations.

i) Name of the course :

Diploma in Operation Theatre Technology

ii) Objectives :

This course is designed to train candidates in assisting Anesthesiologist in the OT and CCU as well as in the operation and maintenance of theatre equipment and hospital pipeline system.

iii) Admission requirement - including authority and method of selection : Eligible candidates shall be selected by the Director of Medical Education based on merit assessed by computing marks scored by the candidate in the qualifying examination.

iv) Eligibility for admission :

a) Minimum Educational Qualification : Pass with minimum 50% mark in Pre degree / +2 with Physics, Chemistry and Biology, as optional subject. (40% for reserved candidates) Diploma in Electronics / Biomedical Engineering / Instrumentation from a recognised instruction preferable.

b) Nativity :

Indian citizen of Kerala origin are eligible for admission.

c) Age limit :

Candidate should be between the age of 17 to 25 yrs.

v) **Number of seats :**

Not to exceed 15 students in a batch

vi) **Reservation of seats :**

As per existing Govt. guidelines.

Course content

i) **Duration of the course and structure.**

The duration of the course shall be two years plus compulsory internship for six months.

The course shall be conducted under the Dept. of Anesthesiology

The course shall be completed in 4 semesters.

There shall be theory classes and practical training and resident duty during the course.

ii) **Subjects taught**

1. Base Anatomy and Physiology
2. Drugs used in Anesthesia / Basic pharmacology
3. Principles of Anesthesia and intra operative care of the patient
4. Equipments used in Anesthesia, its basic principles uses, trouble shooting and maintenance
5. Monitoring equipment
6. Principles and techniques of sterilisation
7. Transfusion and infusion
8. Medical gases and hospital pipeline systems including vacuum suction and oxygen concentrator

Evaluation procedure

Continuous evaluation through internal assessment examination and final examination at the end of the course consisting of theory and practical

3. Detailed syllabus

Theory – Topic

1. Sterilization, common methods of sterilization for individual items and aseptic techniques.
2. Daily routine preparation of anesthesia table and machine rack
3. Basic anatomy of heart
4. Anesthesia machine, design, function, physical principles safety measure and checking
5. Physiology of the heart
6. Gas cylinders, physical properties, parts & safety measures
7. Precaution in handling pipeline supply, manifold central medical and vacuum
8. Basic anatomy of Brain
9. Physiology of brain
10. Basic anatomy of lungs
11. Basic Physiology of Lungs
12. Premedication drugs, intera venous anesthetic and analgesics
13. Type of anastasia
14. Inhalational agents and vaporisers
15. Preparation for and canulation of intravenous lines, indications, techniques and complications
16. Intubation, positioning techniques, laryngo scope, endotracheal tubes, face masks, air ways, stillets etc..
17. Blood transfusion and component therapy'
18. Day to day maintenance, sterilization and preparation of ventilators.
19. Ventilators
20. Humidification and humidifiers

21. Setting of monitors in OT and day to day maintenance
22. Monitoring in COT, NOT, TOT
23. Epidural anesthesia, positioning techniques and complications
24. Cardiovascular drugs, inotropes, vasodilators, calcium channel blockers.
25. Blood gas analysis and interpretation
26. PFT methods and interpretation
27. Cardiac arrest and management
28. Pediatric anesthesia equipment and preparation
29. IV fluid therapy – detail of fluids
30. Drugs : Heparin, Protamine Calcium, Potassium, diuretics and bicarbonates
31. Bronchoscopy and Laryngoscopy
32. Patients of AIDS and hepatitis coming for surgery
33. Complications of positioning and methods of prevention
34. Preparation for CT, MRI and catheterisation
35. Modern anesthesia machine
36. Defibrillator
37. Pulse oxymeter and Capnograph
38. Neuro Muscular monitor
39. Cardio – pulmonary bypass
40. Electrical and fire hazards in theatre
41. Newer equipment and their use

Instructional Period

1. Theory classes shall be finished in the first two semesters.
2. Practical training

A. Operation theatre training – 15 months

1. Preparation of anesthesia machines, ventilators other equipment used in anesthesia and monitoring. electrocautery, operating microscopes, operation labels and lights.
 2. Preparation of drugs used intraoperatively and the setting up of intravenous / transfusions.
 3. Sterilization of the equipment used in anesthesia such as ventilator tulbigs, transducer, tracheal incubating equipment etc. (but excluding surgical instruments)
 4. Maintenance of the theatre equipment (excluding surgical instruments), gas and vaccum outlets, theatre lights and tables etc.
 5. Managerial aspects such as stock maintenance, preparation of intends, maintenance of the narcotic register etc.
 6. Hospital pipeline system and gas manifold including compressed air and vaccum.
- B. 8 months training in the biomedical engineering section in maintenance of the theatre equipment, hospital pipeline systems, gas manifold, vacuum outlets, theatre lights, tables and electrocautery.

C. CSSD – One month

Candidates shall be posted under the Nursing supervisor CSSD for training in all aspectgs of sterilization of the equipment (including surgical instruments) used in the operation theatre.

D. Resident Duty

Candidates shall have 24 hrs. resident duty in the hospital for training in emergency surgical procedures and gas pipeline emergencies.

4 What is expected of the student at the end of the course

A student shall acquire knowledge and skill to act as personnel for the maintenance of theatre equipments including the pipeline systems. They shall also be capable of assisting in the recovery room and intensive care room

5. Requirements for satisfying competition of the subject study : -

- a) Attendance : Minimum 80% attendance in theory and practical
- b) Maintenance of record – Records shall be maintained and submitted at the end of the course duly certified ley the HOD

- c) Progress evaluation :- Regular internal assessment at the end of each semester – and shall secure minimum 50% to become eligible to appear for the final examination.
- d) Certificate of satisfactory completion of the course by Head of the Dept.

6 Evaluation

1. Scheme of internal assessment

Regular internal assessment through written test and practical examination at the end of each semesters – conducted by the concerned departments dealing with the topics.

Marks obtained in internal assessment examination shall be computed for presentation at the final examination.

2. Final examination

a) Authority to conduct the examination :-

The Director of Medical Education

b) Frequency :-

Regular examination shall be conducted at the end of the course.

Supplementary examination shall be conducted six months after the regular examination

c) Scheme of Regular examination

At the end of the course regular examination shall be conducted in theory and practical.

d) Criteria for a pass in the subject :

Minimum of 50% in the theory including viva voce and internal assessment. Minimum of 50% in the practical including internal assessment Minimum of 50% for the subject in aggregate.

e) Awarding class and ranks :

Candidates scoring 66% and above shall be awarded first class.

Candidates scoring 75% and above shall be awarded distinction

Candidate who score highest marks in aggregate shall be awarded first rank at the end of the course.

3. Scheme of supplementary examination

Students who fail in the regular examination can appear for a supplementary examination, six months after the regular examinations.

The Scheme of examination will be same as that of the regular examination.

No additional instructional period is necessary to become eligible for supplementary examination.

4 Eligibility criteria for appearing for the final examination

- i) Shall have minimum 80% attendance in theory and practical
- ii) Shall submit completed and duly certified records
- iii) Shall have scored minimum 50% marks in the internal assessment examination
- iv) Shall submit a certificate of satisfactory completion of course from the Head of the Department.

5. Examiners :

- i) Qualification – Minimum MBBS with MD Anesthesiology with three years experience
- ii) Number of examiners for theory and practical - two

Secretary,
Kerala Para Medical Council,
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Trivandrum