



Chirayu
University

EXAM SCHEME AND SYLLABUS

(Applicable for the batches admitted from the Academic Session
2023-24 onwards)

Diploma in Anaesthesia Technician (DAT, 2 Year Diploma Programme)

FACULTY OF PARAMEDICAL SCIENCE & ALLIED HEALTH SCIENCE

Chirayu University
Bhopal, MP 462030, India

AIMS: The aim of Diploma in Anaesthesia Technician program is designed to provide students with the necessary knowledge and skills to become competent professionals in the field of catheterization laboratory technology.

OBJECTIVES:

- A good working knowledge of the pharmacokinetics and pharmacodynamics of the anaesthetics drugs and adjuncts.
- Basic knowledge of relevant Anatomy, Physiology, Biochemistry, Pharmacology and Physics.
- Impart the knowledge and various anaesthetic procedure in relation to surgery and monitoring.
- Technical Competence: Develop technical skill and have knowledge about the various technical aspects of anaesthesia including anaesthetic medication, anaesthetic procedure, sterilization procedure, patient and operation theatre safety, monitoring and equipment usage by the anaesthesiologist..
- Patient care: Train students to provide quality care to patients undergoing catheterization procedures. This includes understanding patient needs, ensuring their comfort, and addressing any concerns they may have.
- Medical Knowledge: Provide a strong foundation in medical sciences related to cardiovascular health, anatomy, physiology, and pathology. This knowledge is essential for understanding the context and implications of anaesthesia procedures.
- Safety and Infection Control: Emphasize the importance of safety protocols and infection control measures within the catheterization laboratory setting to protect both patients and healthcare professionals.
- Clinical Experience: Offer practical, hands-on training through clinical rotations or internships in catheterization laboratories. This allows students to apply their theoretical knowledge in real-world situations under supervision.
- Team Collaboration: Foster teamwork and effective communication skills, as anaesthesia technicians often work closely with other healthcare professionals such as cardiologists, nurses, and radiologic technologists during procedures.
- Ethics and Professionalism: Instill ethical principles and professional conduct in dealing with patients, colleagues, and the healthcare community. This includes maintaining patient confidentiality, respecting diversity, and upholding the highest standards of integrity.
- Problem-Solving Skills: Develop critical thinking and problem-solving abilities to handle unexpected situations that may arise during catheterization procedures or in the anaesthesiology environment.
- Continuing Education: Encourage a commitment to lifelong learning and staying updated on advancements in anaesthesia technology, procedures, and healthcare practices.
- Certification and Accreditation: Prepare students for certification and ensure that the program meets the necessary accreditation standards set by the council.

COURSE STRUCTURE:

Diploma in Anaesthesia Technician (DAT) is 2 Year Diploma Programme.

DURATION OF THE PROGRAM:

1. DAT I YEAR
2. DAT II YEAR

TEACHING DAYS: Each academic year shall consist of 160 teaching days.

SYLLABUS AND SCHEME OF EXAMINATION:

Syllabus and Scheme of examination will be the same for both first and second year.

SCHEME OF EXAMINATION: Diploma in Anaesthesia Technician

FIRST YEAR EXAMINATION

S. No.	Paper	Subject	Max. Marks	Min. Passing Marks
1	Paper - I	Human Anatomy & Physiology	100	50
2	Paper - II	Basic understanding OT and anaesthesia	100	50
3	Paper - III	Record keeping, Infection Control and Waste management	100	50
4	Paper - IV	Patient Safety and Management during Anaesthesia	100	50

(There shall be Institutional /College level theory examination as per university notification, marks to be send to University for internal assessment purposes of university examination)

SCHEME OF EXAMINATION FOR 2nd Year (UNIVERSITY EXAMINATION) :

There shall be University examination at the end of 2nd year curriculum for all Diploma courses.

S. No.	Paper	Subject	Theory	Internal Assessment	Practical	Total
1	Paper - I	Human Anatomy & Physiology	100	100	100	300
2	Paper - II	Basic understanding OT and anesthesia	100	100	100	300
3	Paper - III	Record keeping, Infection Control and Waste management	100	100	100	300
4	Paper - IV	Patient Safety and Management during Anaesthesia	100	100	100	300
TOTAL			400	400	400	1200

PAPER-I: HUMAN ANATOMY & PHYSIOLOGY

Paper	Subject	Max. Marks	Min. Passing Marks
Paper - I	Human Anatomy & Physiology	100	50

The examination shall be of 100 marks with **Section – A: Anatomy** and **Section – B : Physiology** .

The theory examination marks for Anatomy shall be 50 and for Physiology 50 marks respectively. There shall be two paper setters / evaluators, one from Anatomy and one from Physiology . Section- A, which will be set by Anatomy examiner (50 marks) and Section-B, by Physiology (50 marks) examiner. Recognized teachers in Anatomy and Physiology with five years of experience shall be on the panel of examiners; 50% shall be the minimum passing marks.

The pattern of theory examination for each section (A and B) will be as under for **50 Max. Marks**.

No. and Type of Questions	Marks for each Question	Total Marks
10 Very short answer Questions <i>Answer to be given in 50-60 words</i>	02	20
05 Short answer Questions <i>Answer to be given in 250-300 words</i>	10	50
02 Essay type Questions <i>Answer to be given in 450-500 words</i>	15	30
Total Marks		100

PAPER-I: APPLIED ANATOMY & PHYSIOLOGY

General Anatomy (40 Hrs.)

General Physiology (40 Hrs.)

SYLLABUS CONTENT:

A) Applied Anatomy & Physiology:

- Study of the structure of a cell.

Normal anatomical structure, Histology & Functions (Physiology) of the following systems.

- The circulatory system (Heart & Blood Vessels)

The Respiratory system

The Digestive system

Liver & Pancreas

Lymphatic system

Urinary system

Reproductive system – Male & Female

Endocrine system

Central nervous system (Brain & Spinal cord)

PRACTICAL:(80hrs.)

Anatomy & Physiology

M.M. 100 Marks

ANATOMY: -

- (1) Demonstration of parts of body and land marks on the surface.
- (2) The skeletal system, Head & Neck.

Thorax And Abdomen: -

- Demonstration of various organs within thorax & abdomen.
- Respiratory systems, pleurae, heart, liver, gall bladder, peritoneum stomach & intestine.
- Spleen, pancreas & parts of urinary system

- GENERAL NERVOUS SYSTEM: -

- Spinal level and site of lumbar puncture.
- Surface anatomy of important organs & blood vessels.
- Identification of models like those of Brain, Heart, embryology, Kidney.

- PHYSIOLOGY: -

- The microscope, its usage, cleaning & maintenance.
- Identification of blood cells under Microscope. RBC, various types of WBC, platelets, Reticulocytes.
- Preparation of anti coagulants.
- Collection of blood samples to obtain plasma & serum samples.
- Ruling area of Nebular chamber.
- Usage of RBC & WBC pipettes & westergren Pipette & Wintrobe tube.
- Estimation of Hb, preparation of blood smears, staining.
- Demonstration of blood pressure recording and pulse.
- Determination of bleeding, clotting & prothrombin Time.

Note:-

- All theory topics scheduled followed by practical's.
- Minimum 100 Hrs. of posting should be in Biochemistry
- Minimum 100 Hrs. of posting should be in pathology in 1st years to get accustomed with pathology Dept.

PAPER-II : BASIC UNDERSTANDING OT AND ANAESTHESIA

Paper	Subject	Max. Marks	Min. Passing Marks
Paper - II	Basic understanding OT and anaesthesia	100	50

The examination shall be of 100 marks and question paper will be set by Asst. Professor, Anaesthesia, who shall be on the panel of examiners, 50% shall be the minimum passing marks..

The pattern of University theory examination will be as under for **100 Max. Marks in question paper** and distribution of marks for questions will be as under

No. and Type of Questions	Marks for each Question	Total Marks
10 very short answer Questions <i>Answer to be given in 50-60 words</i>	02	20
5 short answer Questions <i>Answer to be given in 250-300 words</i>	10	50
2 essay type Questions <i>Answer to be given in 450-500 words</i>	15	30
Total Marks		100

PAPER II: BASIC UNDERSTANDING OT AND ANAESTHESIA

Teaching hours: 60 hrs

SYLLABUS CONTENT:

1. Orientation of Operation Theatre and ICU complex Setup and Function of different areas/Zones of separation.
2. Introduction to Anaesthesia General, Regional and Local Anaesthesia.
3. Understanding and Operating Anaesthesia machine/ Work Station. Equipments and Gadgets used for General Anaesthesia, Regional Anaesthesia and Local Anaesthesia.
4. Details of drugs and agents used in anaesthesia and ICU.
5. Understanding and Operating all monitoring equipments used in Operation Theater and ICU
6. Basic human anatomy and physiology relevant to Anaesthesiology.
7. Basic principal of drug therapy and Anaesthetic Pharmacology
8. IV fluids (Crystalloids & Colloids), Blood and component transfusion.
9. Oxygen therapy
10. Basic and Advanced Cardiac Life Support

Practical:- 2ND year as related to theory syllabus

PAPER-III: PATHOLOGY –I : RECORD KEEPING, INFECTION CONTROL AND WASTE MANAGEMENT

Paper	Subject	Max. Marks	Min. Passing Marks
Paper - III	Record keeping, Infection Control and Waste management	100	50

The examination shall be of 100 marks and question paper will be set by qualified examiner Asst. Professor, Anaesthesia, who shall be on the panel of examiners of internal or external , 50% shall be the minimum passing marks

The pattern of University theory examination will be as under for **100 Max. Marks in question paper** and distribution of marks for questions will be as under

No. and Type of Questions	Marks for each Question	Total Marks
10 very short answer Questions <i>Answer to be given in 50-60 words</i>	02	20
5 short answer Questions <i>Answer to be given in 250-300 words</i>	10	50
2 essay type Questions <i>Answer to be given in 450-500 words</i>	15	30
Total marks	100	

PAPER III : RECORD KEEPING, INFECTION CONTROL AND WASTE MANAGEMENT

Teaching hours: 60 hrs

SYLLABUS CONTENT:

1. Record keeping in Operation Theatre, Anaesthesia and ICU
2. Inventory and Stock Management of Operation Theatre & ICU
3. Equipment Cleaning, Disinfection and Sterilization. Maintenance of Service records Calibration records and knowledge of AMC and CMC.
4. Sterilization and fumigation of OT & ICU
5. Biomedical Waste disposal and management system in OT & ICU

Practical:- 2ND year as related to theory syllabus

PAPER-IV Patient Safety and Management during Anaesthesia

Paper	Subject	Max. Marks	Min. Passing Marks
Paper - IV	Patient Safety and Management during Anaesthesia	100	50

The examination shall be of 100 marks and question paper will be set by qualified examiner Asst. Professor, Anaesthesia, who shall be on the panel of examiners of internal or external, 50% shall be the minimum passing marks.

The pattern of University theory examination will be as under for **100 Max. Marks in each question paper** and distribution of marks for questions will be as under

No. and Type of Questions	Marks for each Question	Total Marks
10 very short answer Questions <i>Answer to be given in 50-60 words</i>	02	20
5 short answer Questions <i>Answer to be given in 250-300 words</i>	10	50
2 essay type Questions <i>Answer to be given in 450-500 words</i>	15	30
Total Marks		100

Paper IV: Patient Safety and Management during Anaesthesia

Teaching hours:60 hrs.

SYLLABUS CONTENT:

1. Understanding functioning of Manifold Unit, Anaesthesia gas supply and vacuum system. Knowledge of different Gas Cylinders.
2. Pre-anaesthetic preparation for General, Regional and Local anaesthesia.
3. Positioning during Anaesthesia and Surgery
4. Pre-operative assistance during General, Regional & Local Anaesthesia.
5. Patient transport in hospital & outside the hospital.

Practical:- 2ND year as related to theory syllabus

Book References:

Anatomy & Physiology

- I. Text book of Anatomy – B.D. Chaurasia
- II. Text book of Anatomy – Vishram singh 2nd Edit
- III. Essential of medical physiology- K Sembulingam
- IV. Text book of physiology – A.K. Jain
- V. Text book of Physiology – G.K. Pal

Anaesthesia Technician

- I. Handbook of Anaesthesia for diploma and degree in anaesthesia – sameena Mehraj
- II. Short textbook of Anaesthesia.