

SYLLABUS
for
DM Cardiothoracic Vascular Anaesthesiology & Critical Care
(DM CTVA & CC)
2025

Government of Nepal
Medical Education Commission
Sanothimi, Bhaktapur

DM Cardiothoracic Vascular Anaesthesiology & Critical Care (DM CTVA & CC)

Introduction:

Health professional education, which started in Nepal formally in Institute of Medicine (IOM), Tribhuvan University (TU) in 1972 has been progressing continuously to move pace to pace with changing global trends and development in health professional education, which led to the initiation of Masters/Postgraduate program in this institute. With the further development in the field of medical education, subspecialty DM/MCh programs were also started to address global trends and need of the patients and country.

One-year postgraduate Diploma in Anaesthesiology (DA) program was started in IOM in 1985 AD and 3 years post-graduate MD Anaesthesiology program was started in 1996 AD, for the first time in Nepal, for the similar reasons to address the developing trends in medical education, which were evident in all the fields of medicine. DA program was later phased out.

With the increase in non-communicable diseases, spectrum of cardiac, vascular and thoracic patients is also increasing day by day. The area of cardiothoracic vascular surgery and interventional cardiology have expanded and developed significantly as per the patients' need and the need of the country. Those services are expanding all over Nepal, in the government as well as in private medical institutes. Subspecialty training in DM Cardiology (2008 AD), MCh Cardiothoracic & Vascular surgery (2007 AD) were thus started to treat this group of patients. So, it was felt that subspecialty training in the field of Cardiothoracic Vascular Anaesthesiology and Critical Care (CTVA & CC) is evident and mandatory; as it will provide specialized service and updated better quality care to the patients in need. It will also widen horizon of research in this area and provide specialised evidence & academic based practices to the patients in need. DM program in Cardiothoracic Vascular Anaesthesiology and Critical Care (DM CTVA & CC) is the result of long process of development in the field of anaesthesiology.

Objective:

The objective of DM CTVA & CC program is to train anaesthesiologists in the specialised management of patients undergoing cardiac, thoracic, vascular surgeries and interventional cardiology procedures.

1. To develop proficiency in the preoperative, intraoperative and postoperative management of patients undergoing related surgeries and interventional cardiology procedures.
2. To expand area of academics, researches and publications of international standards in the related fields.
3. To help in the development of collaborative skills for team management involving anaesthesiologists, surgeons, cardiologists, perfusionists & other healthcare professionals.
4. To equip the trainees for post-operative cardiac, thoracic & vascular critical care management including handling of complex critical scenarios.

5. To train the trainees to follow ethical practice, communication skills and professionalism of highest standard.

Process used in the development of the syllabus of DM CTVA & CC program:

1. Request letter to officially initiate DM CTVA & CC program was sent to Medical Education Commission (MEC) from IOM, Dean office, along with the copy of curriculum approved by Academic Council of TU.
2. Meetings with experts were organized by MEC for finalization and initiation of DM CTVA & CC program.
3. Inspection team was sent by MEC in Manmohan Cardiothoracic Vascular & Transplant Center (MCVTC) to check feasibility of the training and the training center was approved.
4. Syllabus of DM CTVA & CC meeting recent standard of MEC was developed, by forming a team of experts in related fields.
5. The program was accepted by MEC and was planned to start the program from 2025 AD.

Doctorate of Medicine in Cardiothoracic Vascular Anaesthesiology and Critical Care
(DM CTVA & CC)

A. Eligibility

- a. MD Anaesthesiology or Equivalent
- b. Specialty Registration in Nepal Medical Council (or Medical Council of the respective country)

B. Examination Format

- a. Question type: Single best response type of multiple-choice questions
- b. Option: Four options (A, B, C, D)
- c. Number of questions: 200
- d. Full marks: 200 (With 0.25 marks deduction for each wrong response)
- e. Pass Marks: 50th Percentile
- f. Duration: 3 hours

C. Weightage

S. No.	Area	Content/Domain	No. of Questions
1.	Applied Basic Medical Science	1. Anatomy 2. Biochemistry 3. Microbiology 4. Pathology 5. Pharmacology and toxicology 6. Physiology 7.	20
2.	General Subjects	1. Preoperative assessment 2. Premedication 3. Perioperative documentation 4. Monitoring during anaesthesia 5. Airway management 6. Anaesthesia Workstation, Breathing System & Applied Physics 7. Spinal & Epidural anaesthesia 8. General anaesthesia 9. Anaesthesia for <ul style="list-style-type: none">- Emergency Surgeries- Orthopaedics and trauma- Otorhinolaryngology 10. Regional Anaesthesia 11. Fluid, electrolyte and acid base balance 12. Blood Transfusion	60

S. No.	Area	Content/Domain	No. of Questions
3.	Subspecialty subjects	<ol style="list-style-type: none"> 1. Anaesthesia for: <ul style="list-style-type: none"> - Cardiac, thoracic and vascular surgeries - Obstetrics and Gynaecology surgeries - Ophthalmology surgeries - Geriatric patients - Patients with endocrine pathologies - Paediatric and neonate patients - Neuro-surgeries - Genitourinary surgeries - Patients with Liver, Renal and Neuromuscular diseases 2. Pain management 3. Non-operating room anaesthesia (NORA) 4. ERAS (Early Recovery After Surgery) 5. Advanced Monitoring <ul style="list-style-type: none"> - Cardiac output Monitoring - Invasive arterial line monitoring, CVP monitoring, Pulmonary artery catheterization, Cerebral oximetry, BIS 6. Critical care Medicine <ul style="list-style-type: none"> - Sepsis, Shock, ARDS - Pneumonia - Oxygen therapy and Mechanical Ventilation - Nutrition - Transport of critically ill patient - Renal replacement therapies - ECMO 7. Cardiopulmonary Resuscitation 8. Transthoracic/ Transesophageal echocardiography 9. Patient blood management 10. Point of care coagulation testing (TEG, ROTEM) 11. Recent Advances in anaesthesia & critical care 	90
4.	Miscellaneous	<ol style="list-style-type: none"> 1. Research and Biostatistics 2. Medical Ethics and Good Medical Practice 3. Medical Education 4. Communication skills 5. Medicolegal issues 	30
	Total		200