Dr. M.G.R. EDUCATIONAL AND RESEARCH INSTITUTE
Deemed to be University

Maduravoyal, Chennai – 600 095, Tamilnadu, India
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University with Graded Autonomy Status

SYLLABUS & CURRICULUM
for
M.D. ANAESTHESIOLOGY

2020 onwards

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M.D. ANESTHESIOLOGY

Goals

The goals of three year degree course in Anaesthesiology would be to train a MBBS doctor who after the satisfactory completion of which shall:

1. Practice independently the art and science of Anaesthesiology and Resuscitation effectively and ethically, backed by scientific knowledge and skill base.
2. Undertake responsibilities in critical care unit, trauma unit, and respiratory therapy unit of unconscious patients requiring ventilatory support.
3. Undertake acute and chronic pain management and basics of Interventional pain management.
4. Continue to evince keen interest in continuous professional development irrespective of whether he is in a teaching institution or in private anaesthetic practice.
5. Be a dedicated, motivated teacher who is always keen to train or to share his knowledge and skills with a colleague or junior or any learner.

Objectives

The following objectives are laid out to achieve the goals of the course. These objectives have to be achieved by the candidates by the time of completion of the course. The objectives may be considered under the following headings.

1. Knowledge (Cognitive domain)
2. Skills (Psychomotor domain)
3. Attitudes communication skills, human values and ethical practice.

At the end of the training the candidate must be able to:

Knowledge

- Demonstrate understanding of basic sciences relevant to Anaesthesia.
- Describe the Anaesthetic Management of common and uncommon surgical

ailments belonging to various branches of surgery, at all ages requiring operative interventions with a basic knowledge of the aetiology, pathophysiology and the surgical treatment of the conditions.

- Describe the underlying theoretical background of mechanism pain perception and pain management.
- Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- Demonstrate understanding of the theoretical base of polytrauma and the science of resuscitation.
- Recognize the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anaesthetizing them.
- Advise regarding the anaesthetic management of any surgical case and to carry out this management effectively.
- Update himself / herself by self-study and by attending courses, conferences and seminars relevant to anaesthesia.
- Know the basic methodology of teaching, develop competence in teaching medical/paramedical students and guide his team colleagues and students.
- Demonstrate understanding of medico-legal aspects of anaesthesia.
- Demonstrate basic knowledge of the administrative aspects operating rooms complex.
- Undertake audit, use information technology tools and carryout research, both basic and clinical, with the aim of publishing the work and presenting the same at various scientific fora.
- Learning the use of newer equipments used as adjuncts in critical care and anaesthesia like Ultrasound, peripheral nerve stimulator, TOF, acceleromyograph, ANI monitoring.
- Learning the basics of POCUS (Point of care Ultrasound) and ECHO for basic heart scan.

- Use of above equipments for critical care procedures like pleural tapping, insertion of ICD, Percutaneous tracheostomy.

Skills

- Perform 'Pre-Anaesthetic Evaluation' of patients undergoing surgery by taking, proper clinical history, examining the patient, ordering relevant investigations and interpreting them to have additional information about the surgical condition, and or the associated medical condition, which warrant the modification of the proposed anaesthetic management.
- Administer anaesthesia (general and or regional) to common surgical operations independently and to superspecialisations like cardiac surgery, neurosurgery etc. with the help of a senior anaesthesiologist.
- Demonstrate skills in providing basic life support, advanced cardiac life support, trauma life support and paediatric-neonatal life support, train medical and paramedical staff in BLS and ALS.
- Demonstrate following abilities in Emergency Anaesthesia, Trauma and Resuscitation:
  - ✓ Organize resources in case of mass casualty.
  - ✓ Perform triage.
  - ✓ Assess, transport and manage mass casualties / disaster management and camp anaesthesia.
  - ✓ Manage massive haemorrhage and massive blood transfusion.
  - ✓ Transport critically ill patient.
  - ✓ Perform anaesthetic management of geriatric patients with fracture neck of femur
  - ✓ Manage severe burns patients, rapidly progressing spinal compression, massive haemoptysis and lobectomy, peritonitis from various suspected causes, preparation and management of bowel obstruction, septicaemic shock, acute upper airway obstruction such as foreign

body, epiglottitis, infections, cardiac tamponade from examples post cardiac surgery, malignant pericardial effusion, peri-operative management of rupture aneurysm of abdominal aorta

- ✓ Basic Cardiac Life Support and Advanced Cardiac Life Support, Basic Trauma Life Support, Advanced Trauma Life Support, and Cerebral preservation.

- ❖ Undertake complete patient monitoring including preoperative, intra-operative and postoperative ventilatory care of the patients.
- ❖ Demonstrate following abilities in the Post Anaesthesia Care Unit (PACU)
  - ✓ Assess the patient's recovery and condition for a safe discharge or transfer.
  - ✓ Observe, recognize and treat the commonly occurring problems likely to arise in the Post-anaesthesia Care Unit (PACU) especially those in relation to cardio-respiratory systems:
    1. Airway integrity and compromise.
    2. Arrhythmia
    3. Hypertension
    4. Hypotension
    5. Pain prevention and pain relief
    6. Nausea and vomiting
    7. Decreased urine output
    8. Emergence delirium
    9. Delayed emergence from anaesthesia
    10. Shivering
    11. Post-obstructive pulmonary edema.
- ❖ Management of difficult Airway and use of Videolayngoscope and fiberoptic bronchoscope.
- ❖ Perform Ultrasound for airway evaluation
- ❖ Demonstrate ability to provide special sedation /anaesthesia requirements

outside operating Room, eg Radiology: for CT, MRI (especially in relation to dye allergy and embolization, Oncho radiotherapy, Electroconvulsive shock therapy (modified ECT. Non-invasive cardio-radiologic procedures including balloon angioplasty and cardiac catheterization, Non-invasive neuro-radiologic procedures, lithotripsy etc .

- Demonstration of following abilities in Intensive Care Unit
  - ✓ Understanding the spectrum of critical illnesses requiring admission to ICU.
  - ✓ Recognizing the critically ill patient who needs intensive care - Trauma, burns, all types of shock, Sepsis, SIRS and ARDS, Poisoning, infectious patient (HIV, Hepatitis) and patients with metabolic disturbances.
  - ✓ Monitoring progress of patients by physiological scoring systems
  - ✓ Practicing infection control practices and control of nosocomial infections. ϖ Inserting central venous lines, arterial lines using ultrasound and interpreting the data.
  - ✓ Managing cardiovascular instability, respiratory failure and postoperative pulmonary complications
  - ✓ Understanding of the operation of mechanical ventilators including different ventilatory modalities non-invasive ventilation, complications and modes of weaning.
  - ✓ Principles and application of Oxygen Therapy
  - ✓ Glycemic control in the critically ill patient
  - ✓ Practice of Hypothermia and prevention of cerebral injury after cardiac arrest
  - ✓ Delivering appropriate nutritional support - enteral and parenteral.
  - ✓ Proper use of sedative/hypnotic drugs in the ICU.
  - ✓ Practicing ethical and legal aspects of critical care
  - ✓ Good communication skills with patient and relatives.
  - ✓ Proper Sterilization of ICU equipment

- ❖ Demonstration of following abilities in Acute and Chronic Pain Management
- ❖ Assessment of patients with pain including: history taking, physical examination, and interpretation of investigations.
- ❖ Classify types of pain - acute chronic, traumatic, cancer pain, etc. with the knowledge of Pain pathways in detail.
- ❖ Practice the different modalities of physical therapy that may relieve both acute and chronic pain
- ❖ Practice the acute pain, cancer pain guidelines and WHO treatment ladder.
- ❖ Practice routes of administration and risk/benefits of drugs used for acute and chronic pain relief, patient controlled analgesia and treat the common pain syndromes.
- ❖ Demonstrate practice of pain management in patients with problem drug use, drug dependency and addiction and identify the parameters for referral to a pain medicine specialist.
- ❖ Demonstrate Organization of acute pain service and role of acute pain nurse for pain assessment in various groups of patients, Physiological changes secondary to Pain, practice different modalities of pain control. Pharmacology and side effects of opioid analgesia and non-opioid analgesia, principle of patient-controlled analgesia and assessment of its efficacy, Pharmacology and side effects of epidural/intra-thecal opioid. Neurological assessment of epidural blockade and management of failed block. Management of regional blockade – brachial plexus, para-vertebral and intra-pleural block. Management of epidural abscess. Substance abuse and acute pain control. Pain control in concurrent medical diseases – COAD, IHD, bleeding tendency, geriatric. Pain control in burns patients. Pain control in trauma patients included multiple rib fracture
- ❖ Demonstration of abilities to manage Chronic Pain
- ❖ Practice different modalities of chronic pain management - physical

therapy, psychotherapy, (including cognitive behavioural approaches), neuroablation, neuro-augmentation, spinal opioid, interventional neuro-blockade, non-opioid analgesia.

- ❖ Anatomy, indication, technique and complication of chemical sympathectomy (lumbar sympathectomy, stellate ganglion block, celiac plexus block).
- ❖ Practice principles of management of cancer pain, principle of management of non-cancer neuropathic pain - phantom limb pain, post-herpetic neuralgia, complex regional pain syndrome, trigeminal neuralgia. Principle of management of non-cancer nociceptive pain - myofascial pain, lower back pain, intractable angina, burns, chronic pancreatitis, PVD.
- ❖ Practice Epidural steroid injection (all levels) and long-term epidural catheterization.
- ❖ Observe and practice following blocks: Infra-orbital nerve, Intercostal nerve 10
- ❖ Recognize complications associated with each blocks and know appropriate treatment of each ϖ Know the indications for stimulation techniques such as transcutaneous electrical nerve stimulation (TENS), dorsal column stimulation, and deep brain stimulation.
- ❖ Mechanisms and side effects of other therapies used for treating pain.
- ❖ The principles of pain management in special patient groups including the elderly, children, disabled, intellectually handicapped and those unable to communicate.
- ❖ Awareness of the principles for insertion and management of implantable drug delivery pumps.
- ❖ Awareness of the basic principles of palliative care
- ❖ Demonstrate practice of Regional Anaesthesia
- ❖ Applying general principles of pharmacology of local anaesthetics and various adjuvants.

- ❖ Familiarizing with the relevant anatomy for regional techniques.
- ❖ Application of indications and contraindications to regional anesthetic technique including central neuraxial blocks, peripheral nerve blocks and sympathetic nerve blocks.
- ❖ Assessing adequacy of regional anaesthesia, and learn techniques of supplementation of inadequate blocks.
- ❖ Providing effective anxiolytics and sedation of patients by both pharmacologic and interpersonal technique.
- ❖ Performing the following regional anaesthesia techniques: o Brachial plexus, cervical plexus, stellate ganglion block, lumbar plexus, lumbar sympathetic, Sciatic nerve block, Femoral nerve block, 3 in 1 block, Wrist block, Popliteal Nerve block, Trigeminal nerve block, Retro bulbar blocks, Paravertebral blocks, Intercostal blocks, Caudal block – adult and pediatric, Ankle block, Epidural block/Catheter, Subarachnoid block, Bier's block, All peripheral nerves of the upper and lower limbs.
- ❖ Demonstrate practice of Thoracic Anaesthesia
- ❖ Pre-operative assessment of patients undergoing Thoracotomy (lung resection), thoracoscopy, video assisted thoracoscopy and mediastinoscopy
- ❖ Various approaches and their relevant equipments for lung isolation.
- ❖ Various double lumen tubes and their placement.
- ❖ Application of Principle of chest drain.
- ❖ Respiratory Physiology and management of one lung ventilation (OLV). Indications, contraindications and hazards of OLV.
- ❖ Application of the knowledge of Anatomy of lung and broncho-pulmonary segments.
- ❖ Anatomy and techniques for intercostals nerve block and thoracic epidural. Management of thoracic epidural anaesthesia and analgesia
- ❖ Anatomy, techniques and placement of paravertebral block/catheter.
- ❖ Post-operative care of patients after lung surgery.

- Peri-operative management of patients with myasthenia gravis.
- Peri-operative management of patients with mediastinal mass.
- Anaesthetic management of mediastinoscopy, major airway stenting.
- Lung volume reduction surgery and problems.
- Demonstrate practice of Cardiovascular Anaesthesia:
- Application of the knowledge of Anatomy and physiology of valvular disease, coronary arteries and their territories. Pulmonary circulation, coronary circulation, cerebral circulation, visceral circulation.
- Application of the knowledge of Distribution of blood volume to different organs and systems and their control. Microcirculation. Venous system, venous pressure, its influence on various functions.
- Regulation of blood pressure, hypotensive anaesthesia.
- Anatomy and physiology of all operable congenital heart disease like ASD, VSD, PDA, TOF, transposition of great vessels.
- Application of the knowledge of anatomy and physiology of vascular heart disease like co-arctation of aorta.
- Assessment of cardiac patient with ischaemic heart, valvular heart disease and other diseases listed above. Understanding of cardiac catheterization, echocardiography, stress testing, and radio-nucleide imaging.
- Application of Principle and complication of cardiopulmonary bypass
- Application of Principle of trans-esophageal echocardiography
- Application of Principle of circulatory support: inotropes, IABP, pacing
- Coagulation and management of coagulopathy.
- Off pump bypass
- Intra-operative management of aortic surgery and major peripheral vascular surgery, aneurysm grafts, recanalisation procedures.
- Understanding of the adult patient with congenital heart disease and their management during anaesthesia.

- Postoperative cardiac critical care, including cardiovascular problems, analgesia.
- Insertion of invasive monitoring for arterial monitoring, central venous pressure monitoring, pulmonary artery catheter insertion and interpretation.
- Robotic cardiac surgery.
- Demonstrate practice of Paediatric Anaesthesia
- Application of knowledge of Anatomical changes in paediatric patient and neonates.
- Application of knowledge of Physiology and pharmacology in paediatric patient.
- Guideline for pre-operative fasting in children and pre-medication.
- Anaesthetic equipment: laryngoscopes, airways, endotracheal tubes, LMAs, PLMA and breathing circuit for children.
- Anaesthesia management for premature and newborn.
- Emotional problems for parent and child and principles of premedication. Consent by parents and their presence during induction. To become skilled in communicating with children, parents and other relatives.
- Problems of transporting a sick pediatric patient from the ward to the operating room and back with regard to temperature maintenance, cardiovascular stability, ventilation and oxygenation.
- Estimate preoperatively blood volume, hourly fluid requirements, fluid deficit, third space loss, acceptable blood loss and apply principles of fluid and blood replacement in the perioperative period.
- Induce and maintain anaesthesia by inhalation, intravenous, intramuscular and rectal routes and monitor pediatric patients.
- Understand the benefits, risks and techniques of regional anaesthesia in children. Anatomy and techniques of caudal, dorsal penile and inguinal regional block, spinal and epidural block

- ❖ Learn to recognize and treat post anaesthesia complications like apnea, laryngospasm, acid-base and electrolyte disturbances, febrile and convulsing child and bleeding child.
- ❖ Common problems related to common congenital syndromes presenting for surgery. Anaesthetic management of a child with concurrent disease – Down's, Pierre Robin syndrome, von Willebrand's disease, Goldenhar's, Sturge-Weber, Tracher-Colin, Prune-Belly, and cyanotic and non-cyanotic congenital heart disease.
- ❖ Paediatric resuscitation: drugs, doses and defibrillation of children of all ages, from the very premature neonates to those children with complex coexisting disease.
- ❖ Management of patients requiring paediatric intensive care, ventilatory management, and support of circulation.
- ❖ Resuscitation of neonates and children of all ages.
- ❖ Paediatric pain management
- ❖ Assessment of a child with URTI, with a heart murmur.
- ❖ Management of fluid and electrolytes in children.
- ❖ Anaesthetic management of a malignant hyperthermia susceptible child.
- ❖ Anaesthetic management of FB bronchus, oesophagus, Wilm's tumour, congenital diaphragmatic hernia, tracheo-oesophagus fistula, thoracotomy.
- ❖ Anaesthesia for Fetal Surgery.
- ❖ Sedation techniques including the selection, management and monitoring of children for diagnostic and therapeutic procedures, with particular attention to working in areas outside the theatre suite.
- ❖ Demonstrate practice of Transplant anaesthesia
- ❖ Application of knowledge of basic pathophysiology of renal and liver failure. Principles of anesthetizing an immuno-compromised patient.
- ❖ Principles of anesthetizing patient with end stage renal/liver disease and patient with organ transplantation. Perioperative management.

- Demonstrate practice of Neuroanaesthesia
- Application of basic knowledge of cerebral circulation and intra cranial pressure and its implications
- Anaesthesia to patients with neurologic disease, head injury undergoing neurologic or non-neurologic surgery and for diagnostic procedures requiring anaesthesia.
- Anesthetic implications of the most common neurosurgical procedures, transnasal, trans-sphenoidal pituitary surgery. Posterior fossa surgery. Surgery for supratentorial pathology.
- Application of basic concepts behind electrophysiologic monitoring of the brain and spinal cord.
- Application of knowledge of general principles of positioning the patient for surgery and the advantages and disadvantages of each position.
- Effects of anaesthesia on the electroencephalogram (EEG) and evoked potentials.
- Differential diagnoses and treatment alternatives of intraoperative intracranial hypertension ("tight brain")
- Management of Head Trauma, and its anesthetic management and various protocols regarding their management and associated trauma.
- Intracranial surgery and spinal surgery, both routine and emergency.
- Monitoring: techniques for detection and management of air embolism.
- Lumbar puncture and CSF drainage.
- Non-surgical management of the head trauma patient, Systemic complications of severe brain injury.
- Management of subarachnoid haemorrhage and vasospasm.
- Diagnosis and management of patients with brainstem death; and dealing with patient's relatives

Attitudes and Communication Abilities

- Adopt ethical principles in all aspects of his anaesthetic practice. Professional honesty and integrity are to be fostered. Anaesthesia care is to be delivered to all in need, irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain the various options available in the anaesthetic management, critical care, pain management and to obtain a true informed consent from the patient.
- Provide leadership in the operating room environment and get best out of the team in a congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

Course Contents

It includes topics not only of Anaesthesiology but also those aspects of all the other branches of medicine relevant to Anaesthesia viz., Medicine and its allied subjects, Surgery and its allied branches, Pediatrics, applied Anatomy, Physiology, Pathology, Pharmacology, Microbiology etc. It is intended as a guide to the candidates and it is not comprehensive. As and when there is newer development, it becomes eligible for inclusion. Hence, the candidates should be familiar themselves with the current content of the scientific journals and reviews of major topics, in Anaesthesia.

1. History of Anaesthesiology with knowledge of important personalities who have contributed towards it.

2. Basic Sciences related to Anaesthesia including Anatomy, Physiology, Pharmacology, Biochemistry, Patho physiology, Immunology and Genetics
3. Medicine applied to Anaesthesiology.
4. Physics related to Anaesthesiology, Electronics, Computers and Lasers, in Anaesthesiology. Internet/Medline and its uses and applications.
5. Anaesthesiology.

i. i) Pre anaesthetic evaluation and preparation.

ii. ii) Principles and Practice of Anaesthesiology including pre, per and post operative care, of patients belonging to General Surgery and other subspecialities like Cardiothoracic Surgery, Neurosurgery, Orthopaedics, Plastic Surgery and Surgical Endocrinology, Surgical Oncology, Paediatric, Obstetrics and Gynaecology, ENT, Ophthalmology, Urology, Dental Surgery, Laprocopy Surgery etc.

iii. iii) Blood transfusion-Fluid and Electrolyte balance, - Acid Base Balance.

iv. iv) Fires and Explosion in operation theatre.

v. v) Operation Theatre sterilization procedures.

1. Pain Clinic organization and management. Pain pathway and management of pain.
2. Respiratory Therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in I.C.U.
3. Critical Care Anaesthesiology and Trauma Care unit management.

- Different methods of anaesthetic Techniques.
- Regional anaesthesia including spinal, epidural and caudal etc.
- Local Anaesthesia including nerve blocks.
- Anaesthesia in abnormal environments like high attitude anaesthesia etc.
- Complication in Anaesthesiology and their management both per and post operatively

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- Anaesthesia for day care surgery.
- Anaesthesia for diagnostic procedure like endoscopy C.T. Scan M.R.I. etc.

4. Informed consent/medicolegal issues: understanding the implications of acts of omission and commission in practice. Issues regarding consumer protection. Implications in medicolegal cases.
5. Communication skills with colleagues teachers, patient's, and patients relatives.
6. Principles of Anaesthesia audit understanding the audit process and outcome; methods adopted for the same.
7. Essentials of Research methodology:
   i) Basics of Biostatistics and its application.
   ii) Ability to undertake clinical and basic research.
   iii) Ability to publish results of one's work.
8. Principles of Evidence Based Medicine and its application in anaesthetic practice
9. Medical Ethics/social responsibilities of the anaesthesiologists.
10. Record keeping: Ability to keep records as scientifically as possible; knowledge of computers is beneficial.

TECHNICAL SKILLS TO BE ACQUIRED

The list with in the tables indicates the procedures that the student should by the end of the course, be able to perform independently (PI) by himself / herself, should have performed with assistance (PA) should have observed (O) or assisted (A) during the course. NA - Not Applicable

Skills may be considered under the following headings:

1. Basic Graduate Skills
2. Anaesthesia Procedures
3. Critical Care Procedures
4. Emergency Room Procedures
5. Pain Alleviation Procedures

a) Basic Graduate Skills

The student should have acquired the certain skills during his under graduation and internship.

Their skills have to be reinforced at the beginning of the training period. There include;

Procedure	Category	Year	No.
Insertion of I.V. lines	PI	I	100
Insertion of Nasogastric Tubes	PI	I	100
Recording of Vital Signs.	PI	I	100
b) Anaesthesia Procedures:			
Orotracheal intubation	PI	I/II/III	100
Nasotracheal Intubation	PI	I/II/III	50
LMA insertion	PI	I/II/III	50
Airway (Oral/Nasal) Insertion	PI	I/II/III	100
Subarachnoid Block	PI	I/II/III	100
Epidural block (including caudal)	PI	I/II/III	20
Nerve blocks (Land mark based and USG) Brachial Plexus Block PECS Block SAP Block Erector Spinae Block TAP Block Quadratus Lumborum Block Paravertebral block Obturator nerve block Lumbar Plexus Block Superficial Cervical Plexus Block Caudal Block PENG Block Fascia Iliaca Block IPACK block	PI	II/III	10
Major Anaesthesia Procedures	PA/PI	II/III	100 (Per year)
Minor Anaesthesia Procedures	PA/PI	II/III	200 (Per year)

c) Critical Care Procedures:			
Insertion of Arteriallines	PI	II/III	5
Insertion of Central Venous Lines	PI	II/III	5
Intercostal Drainage	O	II/III	NA
Percutaneous Tracheostomy	O	III	NA
Ventilatory Management of Patients	PI	II/III	NA
Sampling for & Interpretation of ABG	PI	II/III	NA
Correction of Electrolyte imbalance	PI	II/III	NA
Fiberoptic Bronchoscopy	PA	III	NA
d) Emergency Room Procedures:			
Cardiopulmonary Resuscitation (BLS & ACLS)	PI	I/II/III	NA
Management of Cardiac failure	PI	II/III	2
Management of Respiratory Failure	PI	II/III	2
Management of Shock	PI	II/III	2
Management of Airway Obstruction	PI	I/II/III	5
e) Pain Alleviation Procedures:			
Stellate ganglion block	PA	III	2
Coeliae ganglion block	PA	III	2
Trigeminal Nerve block	PA	III	2
Labour analgesia	PI	II/III	
Post Operative Pain Management	PI	II/III	100
Neurolysis, & Other nerveablation procedures	PA	III	2
Teaching and Learning Activities			

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinic/laboratory/nursing home while studying postgraduate course. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below.

1. **Lectures:** Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.

a) Didactic Lectures: Recommended for selected common topics for postgraduate

students of all specialties. Few topics are suggested as examples:

1) Bio-statistics.
2) Use of library
3) Research Methods
4) Medical code of Conduct and Medical Ethics.
5) National health and Disease Control Programs.
6) Communication Skills etc.
7) Initial introductory lectures about the subject.

These topics may preferably taken up in the first few weeks of the 1st year.

b) Integrated Lectures: These are recommended to be taken by multidisciplinary teams for selected topics, e.g. Jaundice, Diabetes Mellitus, Thyroid etc.

2. **Journal Club:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further, every candidate must make a presentation from the allotted journal(s) of selected articles at least four times a year and a total of 12 presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced at the beginning of every year.

3. **Subject seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further, every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4. **Student Symposium:** Recommended as an optional multi disciplinary programme. The evaluation may be similar to that described for subject seminar.

5. **Ward Rounds:** May be service rounds or teaching rounds.

a) **Service Rounds:** Postgraduate students should do ward rounds every day.

i) For pre anaesthetic evaluation of the patients posted for operation.

ii) And to do the post anaesthetic follow up of operated patients for alleviation of post-operative pain and for diagnosis and management if any of the post-operative sequelae.

b) **Teaching Rounds:** Every unit should have grand round for teaching clinical methods and preanaesthetic evaluation.

Entries of (a) and (b) should be made in the Logbook.

6. **Mortality & Morbidity Meetings:** Recommended once a month for all postgraduate students. Presentation be done by rotation and by the students who had conducted/assisted anaesthetic management.
7. **Inter Departmental Meetings:** Strongly recommended particularly with departments of surgery & medicine at least once a month. These meetings should be attended by postgraduate students and relevant entries must be made in the Logbook.
8. **Teaching skills:** Postgraduate students must teach Undergraduate students (e.g.Medical, Nursing) by taking demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty. Record of their participation should be kept in Logbook. Training of postgraduate students in Educational Technology is recommended.
9. **Continuing Medical Education Programmes (CME):** At least 2 state / national level CME programmes should be attended by each student in 3 years.
10. **Conferences:** Students should do one paper, one poster presentation in conference and one publication. Participation & presentation of scientific paper should be encouraged.

Dissertation

Every candidate pursuing MD degree course in Anaesthesiology is required to carry out work on a selected research project under the guidance of recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation.

1. The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem,

formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

2. Every candidate shall submit to University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

3. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No changes in the dissertation topic or guide shall be made without prior approval of the University.

4. The dissertation should be written under the following headings:

    i. Introduction
    ii. Aims or Objectives of study
    iii. Review of Literature
    iv. Material and Methods
    v. Results
    vi. Discussion
    vii. Conclusion
    viii. Summary
    ix. References
    x. Tables
    xi. Annexure

5. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other Checklists. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

6. Four copies of dissertation thus prepared shall be submitted to the University, six months before final examination on or before the dates notified by the University.
7. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.
8. **Guide:** The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work shall be as per Medical Council of India Minimum Qualifications for Teachers in Medical Institutions regulations, 1998. Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as Lecturer or Assistant Professor gained after obtaining postgraduate degree, shall be recognised as postgraduate teachers.
9. **A Co-guide** may be included provided the work requires substantial contribution from a sister department or from another medical institution recognised for teaching/training by the University / Medical Council of India. Co guide can also be in the same department with teaching experience to help students in procedures related to dissertation. The co-guide shall be a recognised postgraduate teacher.
10. **Change of guide:** In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.
11. For some more details regarding Guide etc., please see Chapter I and for books on research methodology, ethics, etc., see Chapter IV.

Rotation and Posting in other Departments

The listed knowledge and skills are to be learnt over a period of 3 years. The process is a continuous one. However the recommended period and

timing of training in basic sciences, allied departments and specialty departments are given below. The total duration of postings in allied and subspecialties will be 8 months and the remaining 2 years and 4 months in the mother department.

Basic Sciences: Rotation in these departments viz., Anatomy, Physiology, Pharmacology etc. are to done as concurrent studies during the 1st year of training. At least two hours may be spent in the first six months of the course. Basic Science relevant to Anaesthesia can be studied in the respective departments in the afternoons.

Anatomy: Special emphasis for the dissection of larynx, trachea, heart, various nerves & plexuses.

Physiology: Thorough revision of all the systems, in particular Cardio Vascular System and Respiratory System.

Pharmacology: of Drugs used in Anaesthesia and drugs used for management of systemic disease & Drug interactions.

Allied Speciality: Students should be posted ICU, ICCU, SICU (Trauma unit) and pain clinic during 2nd year of Training for 2 weeks in each, for total duration of 2 months.

Other Subspecialities of Anaesthesia

Posting to other sub-speciality departments will be during 2nd year and the duration of postings are as under**;**

Cardiothoracic Surgery	--	4 weeks
Neuro Surgery	--	4 weeks
Paediatric Surgery	--	4 weeks
Cancer Surgery	--	2 weeks
Oromaxillary Surgery	--	2 weeks
Plastic Surgery	--	2 weeks
Urology	--	2 weeks
Laproscopic and Endoscopic Surgery	--	2 weeks
Anaesthesia for investigative Procedure	--	2 weeks like CT Scan, Lithotripsy, Cardiac Cath Lab
		----------
		24 weeks

Year wise Structured Training Schedule

First Year

1. Basic Sciences related to Anaesthesiology: Theoretical knowledge, Frequent visits to Anatomy dissection halls & Museum, Physiology Laboratories etc., to revise the relevant subjects.
2. Theoretical knowledge of Anaesthesiology & Resuscitation: Special emphasis on clinical examination of patients, learning clinical methods, arriving at correct diagnosis.
3. Basic knowledge about

   Computers in Anaesthesia, Medline, Internet. Bio Statistics.

   Medical Audit.

   Medicolegal Aspects.

   Research Methodology.

   Evidence Based Medicine.

   Medical Ethics, & Social responsibilities of Anaesthesiologists.

1. Learning of communication skills.
2. Anaesthesia Skills
   - Pre Anaesthetic evaluation / under supervision.
   - Monitoring of patients through out perioperative period.
   - Assisting setting up of Anaesthesia Machine, Monitor & Ventilator.
   - Assisting the conduct of Anaesthesia for major surgeries; knowledge about the complications of Anaesthesia.
   - Assisting for short anaesthesia initially and later on doing independently under supervision
   - Conduct of Anaesthesia OPD.
   - CPR training and mastering of BLS & ACLS.
3. **Dissertation:** Choosing a topic of dissertation, submission of synopsis to the university, collection of literature, conduct of pilot studies.

Second Year

1. Theoretical knowledge of allied subjects, subspecialities of Anaesthesia. Assisting senior anaesthesiologists in specialised branches like paediatric surgery, cardiothoracic surgery, critical care trauma etc.
2. Anaesthetic Skills: At the end of 2nd year the student should be capable of;
   a) Anaesthetising patients without assistance but under supervision.
   b) Identifying the complication of anaesthesia and manage them independently but under supervision.
   c) Setting up of Anaesthesia Machine, monitor and ventilator independently.
3. Conference & Workshops: Attending one state level and one national level conference/CME and presentation of a scientific paper.
4. Dissertation: Carrying out of the dissertation study work, periodic reviews, interaction with guide. Organisation of the data writing up of the manuscript of dissertation at end of 2nd year.
5. The student should be actively involved in presentation of seminars, journal clubs, case presentation/discussions.

Third Year

1. The student should be well versed with basics, allied subjects and recent advances in the respective fields.
2. Anaesthesia Skills: At the end of the 3rd year the candidate should be able to make independent decisions as regards anaesthesia, pain management and post operative care of all kinds of patients.
3. Teaching Activities: Final year student should take lead in conducting seminars, journal clubs, case discussions, panel discussions with I & II year students. The third year students should also involve in teaching undergraduate students specially bedside clinics.

4. Dissertation: The completed dissertation must be submitted to the University, 6 months before the examination before the notified date.
5. The student must get expertise in the specialised procedures as noted in the course content table.

Scheme of Examination

A) Theory:

There shall be four question papers, each of three hours duration, carrying 100 marks. Each paper shall consist of 10 short essay questions carrying 10 marks each. Questions on recent advances may be asked in any or all the papers.

Paper I	= 100 Marks
Paper II	= 100 Marks
Paper III	= 100 Marks
Paper IV	= 100 Marks

Total	**400 Marks**

Distribution of topics for each paper will be as follows:

Paper I : Basic Science as applicable to Anaesthesia.

1. Anatomy.
2. Physiology.
3. Pharmacology.
4. Physics.
5. Biochemistry.
6. Patho Physiology.
7. History
8. Equipments.

Paper II : Clinical Practice of Anaesthesia.

1. Cardio Vascular System.
2. Respiratory System.
3. Obstetrics & Gyanecology

4. Orthopaedics.
5. Ophthalmology.
6. ENT

Paper III: Clinical Practice of Anaesthesia.

1. Paediatrics.
2. Renal & Hepatic system.
3. Endorcrines.
4. Haemopoitics.
5. Geriatrics
6. Out Patient Anesthesia & Dental Anaesthesia.
7. Nerve Blocks.
8. Neuro Surgery
9. Cardio thoracic vascular surgery

Paper IV Applied Medicine in Relation to Anaesthesia, recent advances, Intensive care medicine,

Theoretical Aspects of pain and pain relief including postoperative & Cancer Pain.

Note: The distribution of chapters/topics shown against the papers are suggestive only.

B) Clinical Examination: 200 marks

It should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidates should examine & present atleast one long case (carrying 100marks) and two short cases (each carrying 50 marks). The total marks for clinical examination shall be 200.

C) Viva-Voce: 100 marks

Viva-Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 100 and the distribution of marks shall be as under;

i. For examination of all components of syllabus **80 marks**

All examiners will conduct viva-voce conjointly on candidates comprehension, analytical approach expression and interpretation of data. It includes all components of course contents. In addition the candidate may also be given, instruments/equipments, X-ray images, ABG reports, ECG strips, Drugs Ultrasound/Echocardiography reports & specimen. It includes discussion on dissertation also.

ii. For teaching skills (Pedagogy) …….. 20 marks A topic to be given to each candidate in the beginning of clinical examination. He / She is asked to make presentation on the topic for 8 to 10 minutes.

Maximum marks for M.D. Anaesthesiology	**Theory**	**Practical & Viva**	**Grand Total**
	400	**300 (Practical – 200 & Viva – 100)**	**700**

MARKS QUALIFYING FOR A PASS

Obtaining a minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the four papers for degree examination. Obtaining of 50% marks in Practical examination shall be mandatory for passing the examination as a whole in the degree examination

Recommended Books and Journals Books

1. Practice of Anesthesiology - Wylie - Churchill - Davidson.
2. General Anesthesia - Gray, Nunn, Utting.
3. Anaesthesia - Two volume, Ronald D, Miller.
4. Anatomy for Anaesthesist - Harold Willis
5. Understanding Anesthetist Equipments - Dorsh & Dorsh.
6. Emergency Anaesthesia - Thronton
7. Principles of Obstetric - Anesthesia - J. S. Crawford.
8. Physics for Anesthetist - Muscnin & Mactintosh.

9. Neuro Surgical Anaesthesia - Hunter
10. Paediatric Anaesthesia - Gregory.
11. Cardiac Anaesthesiology - 2 volumes - Jonathan Benumfit.
12. Anaesthesia & Co. existing diseases - Stoclting.

Journals

1. Anaesthesiology and Analgesia Journal (States)
2. Anaesthesiology Journal
3. Anaesthesia Journal
4. Acta Anaesthesia Scandinavia
5. Canadian Journal of Anaesthesia
6. Indian Journal of Anaesthesia
7. British Journal of Anaesthesia
8. Expert Anaesthesia
9. Recent advances in Anaesthesiology
10. Year Book of Anaesthesia
11. Anaesthesia Clinics
12. Clinics in North America in Anaesthesiology
13. Anaesthesia Equipment - Ehrenwerth and James. B. Eiscnkraft
14. Text Book of Anaesthesia - A. R. Aitken Head & G. Smith
15. Anaesthesia for infants and children - Smith
16. Obstetrics Anaesthesia and Andgest - Bonica
17. Regional Anaesthesia - Mahentosh series
18. Epideral Analgesia - Broomage
19. Medical problems of Anaesthesia - Kaulman
20. Principles of Anaesthesiology - Collins
21. Anaesthesia for Orthopedic Surgery - Zauder & other
22. Neural Blockade - Cousins
23. Cardiac Anaesthesia - Kaplar

24. Thoracic Anaesthesia - Kaplan and Muschin
25. Regional Anaesthesia - Labot
26. Drugs Interactions & other basic Medical science and Anaesthesia speciality books available.

ADDITIONAL READING

1. Indian Council of Medical Research, "Ethical Guidelines for Biomedical Research on Human Subjects", I.C.M.R, New Delhi, 2000.
2. Code of Medical Ethics framed under section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
3. Francis C M, Medical Ethics, J P Publications, Bangalore, 1993.
4. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
5. Internal National Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991; 424-8
6. Kirkwood B R, Essentials of Medical Statistics , 1st Ed., Oxford: Blackwell Scientific Publications 1988.
7. Mahajan B K, Methods in Bio statistics for medical students, 5th Ed. New Delhi, Jaypee Brothers Medical Publishers, 1989.
8. Compendium of recommendations of various committees on Health and Development (1943- 1975). DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, min. of Health and Family Welfare, Govt. of India, Nirman Bhawan, New Delhi. P - 335.
9. National Health Policy, Min. of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983
10. Srinivasa D K etal, Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry.

CHAPTER - 2

Monitoring Progress of Studies

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects.

The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, (iv) Teaching skills and (v) Dissertation.

i) ***Personal Attitudes.*** The essential items are:

- ❖ Caring attitudes
- ❖ Initiative
- ❖ Organizational ability
- ❖ Potential to cope with stressful situations and undertake responsibility
- ❖ Trust worthiness and reliability
- ❖ To understand and communicate intelligibly with patients and others
- ❖ To behave in a manner which establishes professional relationships with patients and colleagues
- ❖ Ability to work in team
- ❖ A critical enquiring approach to the acquisition of knowledge
- ❖ The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) ***Acquisition of Knowledge*** : The methods used comprise of `Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which

presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I,)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II,)

Clinico-pathological conferences : This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

iii) Clinical skills

Day to Day work : Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III).

Clinical meetings : Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV).

Clinical and Procedural skills : The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3)

(iv) ***Teaching skills :*** Candidates should be encouraged to teach undergraduate medical studentsand paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V)

(v) ***Dissertation in the Department :*** Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the University for registration, again before finalisation for critical evaluation and another before final submission of the completed work (See Model Checklist VI & VII)

(vi) ***Work diary / Log Book*** - Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.

(vii) ***Periodic tests:*** The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

(viii) ***Records****:* Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3, Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counselled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

FORMAT OF MODEL CHECK LISTS

CHECK LIST –I

MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student: **Name of the Faculty/Observer:**
Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

CHECK LIST - II.

MODEL CHECK-LIST FOR EVALUATION OF SEMINARRESENTATIONS

Name of the Student: **Name of the Faculty/Observer:**

Date:

Sl. No.	Items for observation presentation during	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other consulted relevant publications					
2.	Whether cross references consulted have been					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

CHECK LIST - III

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD / OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student: **Name of the Unit Head:**
Date:

Sl. No.	Points to be considered:	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Bedside manners					
8.	Rapport with patients					
9.	Counseling patient's relatives for blood donation or Postmortem and Case follow up.					
10.	Overall quality of Ward work					
	Total Score					

CHECK LIST - IV
EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student: **Name of the Faculty:**
Date:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10	Investigations required Complete list					
	Relevant order					
	Interpretation of investigations					
11.	Ability to react to questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Grand Total					

CHECK LIST - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Sl. No.		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and/or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses AV aids appropriately		

CHECK LIST VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATION

Name: **Faculty/observer:** **Date:**

Sl. No.	Points to be considered divine	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide & other faculty					
4.	Quality of protocol					
5.	Preparation of proforma					

CHECKLIST-VII

CONTINUOUS EVALUATION OF DISSERTATION WORK

BY GUIDE / CO-GUIDE

Name of the Student: **Name of the Faculty/Observer:**

Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Periodic consultation with guide/co-guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
6.	Others					
	Total Score					

LOG BOOK

Table 1 : Academic activities attended

Name: **Admission Year:**

College:

Date	Type of Activity Specify Seminar, Journal Club, Presentation, UG teaching	Particulars

LOG BOOK

Table 2 : Academic presentations made by the student

Name: **Admission Year:**

College:

Date	Topic	Type of Presentation Specify Seminar, Journal

LOG BOOK

Table 3 : Diagnostic and Operative procedures performed

Name: Admission Year:

College:

Date	Name	ID No.	Procedure	Category O, A, PA, PI*

*** Key:**

O - Washed up and observed

A - Assisted a more senior Surgeon

PA - Performed procedure under the direct supervision of a senior surgeon

PI - performed independently

Name of the College: **Academic Year:**

Sl. No	Faculty Member & Others	Name of Student and Mean Score									
		A	B	C	D	E	F	G	H	I	J
1											
2											
3											
4											
5											
Total Score											

Note: Use separate sheet for each year.

Medical Ethics Sensitisation and Practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objective (ii) stated in Chapter II (pages 2.1 to 2.3), and develop human values it is urged that ***ethical sensitisation*** be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programmes.

Course Contents

1. Introduction to Medical Ethics

   What is Ethics

   What are values and norms

   Relationship between being ethical and human fulfillment

   How to form a value system in one's personal and professional life

   Heteronomous Ethics and Autonomous Ethics

   Freedom and personal Responsibility

2. Definition of Medical Ethics

   Difference between medical ethics and bio-ethics Major Principles of Medical Ethics 0

   Beneficence = fraternity

   Justice = equality

   Self determination (autonomy) = liberty

3. *Perspective of Medical Ethics*

The Hippocratic oath

The Declaration of Helsinki

The WHO Declaration of Geneva International code of Medical Ethics (1993) Medical Council of India Code of Ethics

4. Ethics of the Individual The patient as a person The Right to be respected Truth and Confidentiality The autonomy ofdecision

The concept of disease, health and healing The Right to health

Ethics of Behaviour modification The Physician – Patient relationship Organ donation

5. The Ethics of Human life

What is human life

Criteria for distinguishing the human and the non-human

Reasons for respecting human life The beginning of human life Conception, contraception Abortion

Prenatal sex-determination

In vitro fertilization (IVF), Artificial Insemination by Husband (AIH) Artificial Insemination by Donor (AID),

Surrogate motherhood, Semen Intrafallopian Transfer (SIFT),

Gamete Intrafallopian Transfer (GIFT), Zygote Intrafallopian Transfer (ZIFT), Genetic Engineering

6. The Family and Society in Medical Ethics

The Ethics of human sexuality Family Planning perspectives Prolongation of life

Advanced life directives – The Living Will Euthanasia

Cancer and Terminal Care

7. Profession Ethics

Code of conduct

Contract and confidentiality Charging of fees, Fee-splitting Prescription of drugs

Over-investigating the patient

Low – Cost drugs, vitamins and tonics Allocation of resources in health cares Malpractice and Negligence

8. Research Ethics

Animal and experimental research / humanness Human experimentation

Human volunteer research – Informed Consent Drug trials

9. Ethical workshop of cases Gathering all scientific factors Gathering all human factors Gathering all value factors

Identifying areas of value – conflict, Setting of priorities, Working out criteria towards decisions

Recommended Reading

Francis C.M., Medical Ethics, 1 Ed, 1993, Jaypee Brothers, New Delhi, p.189.