



PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED TO BE UNIVERSITY)

Loni, Tal. Rahata, Dist. Ahmednagar 413736
 NAAC Re-accredited with 'A' Grade

SYLLABUS

UG Programme- Anesthesiology

Phase III Part 2

(Competency Based Undergraduate Curriculum will be implemented from August 2027, i.e. MBBS batch admitted for first year in 2024)

Large Group Teaching:

S.N	TITLE OF TOPIC	NO	COMPETENCY DESCRIPTION	HOUR	INTEGRATION (Proposed)
1	Introduction to Anaesthesiology, Anaesthesiology as a specialty, Pre-operative assessment	AS 1.1 AS 1.2 AS 1.3 AS 1.4	Evolution of Anaesthesiology as a modern specialty Roles of Anaesthesiologist. Enumerate and describe the principle of ethics as it relates to Anaesthesiology. Describe the prospects of Anaesthesiology as a career.	1	
2	Premedication and General Anaesthesia medications	AS 4.1 AS 4.2	Pharmacology of drugs used for premedication, induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non depolarising muscle relaxants, anticholinesterases) Describe the anatomy of the airway and its implications for general Anaesthesia	1	Pharmacology (vertical)

3	Conduct of General anaesthesia and Monitoring	AS 4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia.	1	
		AS 4.4	Observe and describe the principles and the steps/ techniques in maintenance of vital organ functions in patients undergoing surgical procedures		
		AS 4.5	Observe and describe the principles and the steps/ techniques in monitoring patients during generalanaesthesia		
		AS 4.6	Observe and describe the principles and the steps/ techniques in involved in day care anesthesia		
		AS 4.7	Observe and describe the principles and the steps/ techniques in anaesthesia outside the operating room		
4	Peripheral nerve blocks	AS 5.3	Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks	1	
		AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia		

5	Regional anaesthesia	AS 5.1 AS 5.2 AS 5.5	Enumerate the indications for and describe the principles of regional anaesthesia(including spinal, epidural and combined). Describe the correlative anatomy of the brachial plexus, subarachnoid and epidural spaces. Observe and describe the principles and steps/ techniques involved in caudal epidural in adults and children	1	
6	Management of patient in Post operative recovery area	AS 6.1 AS 6.2 AS6.3	Describe the principles of monitoring and resuscitation in the recovery room Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room Describe the common complications encountered by patients in the recovery room, their recognition and principles of management	1	
7	Mechanical ventilation and ICU care	AS 7.4 AS 7.5	Observe and describe the basic setup process of a ventilator Observe and describe the principles of monitoring in an ICU	1	
8	Day care anesthesia	AS 4.6	Observe and describe the principles and the steps/ techniques involved in day care anesthesia	1	

Small Group Teaching:

S. N	TITLE OF TOPIC	NUMBER	COMPETENCY DESCRIPTION	HOUR	INTEGRATION (Proposed)
1	Pain physiology	AS 8.1 AS 8.2 PY10.3	Describe the anatomical correlates and physiologic principles of pain Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate Describe and discuss somatic sensations & sensory tracts	1	Physiology (vertical)
2	Pain pharmacology	AS 8.3	Describe the pharmacology and use of drugs in the management of pain. NSAIDs Opioid agonists	1	Pharmacology (vertical)
3	Pain management in palliative care and terminally ill patient	AS 8.4 AS8.5	Describe the principles of pain management in palliative care Describe the principles of pain management in the terminally ill.	1	
4	Fluid therapy	AS 9.3	Describe the principles of fluid therapy in the preoperative period	1	
5	Patient safety	AS10.1 AS10.2	Enumerate the hazards of incorrect patient positioning Enumerate the hazards encountered in the perioperative period and steps/techniques taken to	1	

		AS10.3	prevent them Define and describe common medical and medication errors in anesthesia.		
6	Basic Airway management	AS 11.3	Describe and demonstrate the techniques of opening the airway(head tilt, chin lift, jaw thrust) in a simulated environment.	1	
7	Basic Airway management	AS 11.4	Observe and demonstrate correct insertion of oropharyngeal and nasopharyngeal airways Enumerate the indications of advanced airway management.	1	
8	Advanced airway management	AS 11.5	Describe the steps and demonstrate in a simulated environment manual ventilation by BVM, Endotracheal intubation, and LMA insertion.	1	
9	Oxygen delivery devices, Oxygen therapy	AS 11.1	Describe oxygen delivery devices - nasal cannulas, simple face masks, Venturi masks non-rebreathing masks, BVM, and HFNC. Understand the indications in accordance with clinical scenarios. Demonstrate correct setup and usage of oxygen delivery devices ensuring patient safety and device efficiency.	1	Surgery (Horizontal)

10	Blood and blood products	AS 9.4	Enumerate blood products and describe the use of blood products in the preoperative period	1	Hematology (Vertical)
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Self-Directed Learning:

S.N	TITLE OF TOPIC	NUMBER	COMPETENCY DESCRIPTION	HOUR	INTEGRATION (Proposed)
1	Critical Care Unit	AS7.1	Visit, enumerate, describe the functions of an ICU	1	
2	Critical Care Unit	AS7.2	Enumerate and describe the criteria for admission and discharge of a patient to an ICU	1	
3	Preoperative evaluation	AS3.4	Choose and interpret appropriate testing for patient undergoing surgery	1	
4	Cardiopulmonary resuscitation	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates	1	
5	Cardiopulmonary resuscitation	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children.	1	
6	Non operating room anaesthesia	AS 4.7	Observe and describe the principles and the steps/ techniques involved in anesthesia outside the operating room	1	
7	Peripheral nerve blocks	AS 5.6	Observe and describe the principles and steps/ techniques involved in common blocks used in surgery (including brachial plexus)	1	
8	Patient safety	AS10.4	Describe the role of communication in patient safety	1	

Clinical posting of anesthesiology for MBBS students:

S.N	Clinical work and competency covered
1	AS 3.1 , Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative Anaesthetic evaluation. AS3.2 Principles of Preoperative assessment
2	AS3.3 Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery
3	AS3.4 Choose and interpret appropriate testing for patients undergoing Surgery
4	AS3.5 Determine the readiness for General Surgery in a patient
5	AS3.6 Choose and write a prescription for appropriate premedication
6	AS7.3 Observe and describe the management of an unconscious patient
7	AS9.1, Establish intravenous access in a simulated environment. AS9.2 Establish central venous access in a simulated environment
8	AS 11.2 Oxygen delivery devices, Oxygen therapy, - Describe the principles of oxygen therapy, importance of FiO ₂ , flowrate adjustment, monitoring and safety precautions during oxygen therapy.
9	AS 11.6 Ventilation technique and settings of mechanical ventilation
10	OR13.2 Participate as a member in team for Resuscitation of Polytrauma victim

Internal Assessment:

13 marks, mode of examination – multiple choice questions, no negative markings.

Attendance:

- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the University MBBS examination/(or NEXT whenever it is applicable)
- Students who have less than 75% attendance in theory and 80% attendance in practical cannot appear for University examination, however; they may appear for Supplementary examination provided they attend the remedial classes organized between University Sit and Supplementary exam. Students who have attendance 60% or above shall be eligible for such remedial classes.

Elective Posting:

MODULES	TOPICS	TRAINING PERIOD
MODULE- 1	1. BASICS OF MECHANICAL VENTILATION	3 Days
MODULE-2	1.INTRAVENOUS CANNULATION 2.INTRAMUSCULAR INJECTION 3.RYLES TUBE INSERTION 4.FOLEYS(URINARY) CATHETERIZATION	3 Days
MODULE- 3	1.BASIC LIFE SUPPORT 2. ADVANCED CARDIAC LIFE SUPPORT 3.INTUBATION TRAINING ON MANIKINS	3 Days
MODULE -4	1.TRAINING IN PRE OPERATIVE ASSESSMENT AND PREPARATION 2.INTRA OPERATIVE MONITORING 3.POST OPERATIVE MONITORING	3 Days

Module 1

HANDS ON BASIC SKILLS

1.INTRAVENOUS CANNULATION

- INTRODUCTION
- INDICATIONS,CONTRAINDICATION AND COMPLICATIONS
- EQUIPMENTS STUDY
- TECHNIQUE
- PROCEDURE
- HANDS ON

2.INTRAMUSCULAR INJECTION

- INTRODUCTION
- INDICATIONS, CONTRAINDICATION AND COMPLICATIONS
- EQUIPMENTS STUDY
- TECHNIQUE
- PROCEDURE
- HANDS ON

3.RYLES TUBE INSERTION

- INTRODUCTION
- INDICATIONS, CONTRAINDICATION AND COMPLICATIONS
- EQUIPMENTS STUDY
- TECHNIQUE
- PROCEDURE
- HANDS ON

4.FOLEYS(URINARY) CATHETERIZATION

- INTRODUCTION
- INDICATIONS, CONTRAINDICATION AND COMPLICATIONS
- EQUIPMENTS STUDY
- TECHNIQUE
- PROCEDURE
- HANDS ON

Module 2

BASICS OF VENTILATOR

1.INTRODUCTION

2.HISTORY

3.PULMONARY FUNCTION TEST

4.ARTERIAL BLOOD GAS ANALYSIS

5. INDICATIONS, CONTRAINDICATIONS, SIDE EFFECTS AND COMPLICATIONS OF MECHANICAL VENTILATION

6.EQUIPMENTS USED DURING MECHANICAL VENTILATION

- **ENDOTRACHEAL TUBE**
- **LARYNGEAL MASK AIRWAY**
- **T-PIECE**

7.INVASIVE AND NON-INVASIVE MECHANICAL VENTILATION

8.MODES OF VENTILATION

9. MONITORING DURING MECHANICAL VENTILATION

10. PHARMACOTHERAPY OF MECHANICAL VENTILATION

11.WEANING FROM MECHANICAL VENTILATION

MODULE 3

BASIC LIFE SUPPORT AND PART OF ADVANCED CARDIAC LIFE SUPPORT INCLUDING TRAINING OF INTUBATION OF MANIKINS

1.BASIC LIFE SUPPORT

- **INTRODUCTION**
- **STEPS**
- **HANDS ON**

2.ADVANCED CARDIAC LIFE SUPPORT

- **INTRODUCTION**
- **DRUGS STUDY IN ADVANCED CARDIAC LIFE SUPPORT**
- **STEPS**
- **HANDS ON**

3.INTUBATION

- **INTRODUCTION**
- **INDICATIONS, CONTRAINDICATIONS, SIDE EFFECTS AND COMPLICATIONS**
- **EQUIPMENT USED DURING INTUBATION[LARYNGEOSCOPE,AIRWAYS,BOUGIE,ENDOTRACHEAL TUBE,LARYNGEAL MASK AIR WAY,I-GEL,STYLET,MASK]**
- **AIRWAY ASSESSMENT**
- **TECHNIQUE OF INTUBATION**
- **DIFFICULT INTUBATION ALGORITHM**
- **HANDS ON**

MODULE 4

TRAINING IN PERIOPERATIVE MANAGEMENT

- 1. PREOPERATIVE ASSESSMENT**
- 2. PRE OPERATIVE PREPARATION**
- 3. INTRA OPERATIVE MONITORING**
- 4. POST OPERATIVE MONITORING**

1. PREOPERATIVE ASSESSMENT

- **PURPOSE OF PAC**
- **INTRODUCTION**
- **PRE ANAESTHETIC CHECK-UP[PAC]**
- **ASSESSMENT OF PATIENT**
 - i. DEMOGRAPHIC**
 - ii. SOCIO-ECONOMIC STATUS**
 - iii. CLINICAL EXAMINATION[IMPORTANCE OF THIS IN ANAESTHESIOLOGY]**

-GENERAL EXAMINATION

-SYSTEMIC EXAMINATION

- **AIRWAY ASSESSMENT**
- **INVESTIGATIONS**

2. PRE OPERATIVE PREPARATION

- **INTRODUCTION**
- **NIL BY MOUTH[NBM] STATUS**
- **DRUGS AND INTRAVENOUS ACCESS**
- **PRE-OPERATIVE**
 - I. WARD ROUNDS**
 - II. NBM STATUS**
 - III. ANTI ANXIETY AGENTS**
 - IV. CO MORBID ILLNESS OPTIMISATION**
 - V. PART PREPARATION OF THE PATIENT**
 - VI. CONSENT OF THE PATIENT**
- **PRE-OPERATIVE ROOM**
 - I. INTRAVENOUS CANNULATION**
 - II. CONSENT OF THE PATIENT**
 - III. EXPLAINING THE PATIENT ABOUT THE RISK OF ANAESTHESIA,ICU STAY ,CHANCES OF INTUBATION TRANSFUSION OF BLOOD AND BLOOD PRODUCTS**
 - IV. GENERAL ASSESSMENT OF PATIENT**
 - V. PAC REVIEW**
 - VI. COUNSELLING OF PATIENT AND PATIENT'S ATTENDANT**

3.INTRA-OPERATIVE MONITORING

- **MONITORING OF PATIENTS ;**
 - I. PULSE OXYMETER[FOR SPO2 MONITORING]**
 - II. BLOOD PRESSURE-INVASIVE/NON-INVASIVE**
 - III. ELECTRO CARDIOGRAM[ECG]**

IV. FLUID MONITORING

V. URINE OUTPUT

VI. ETCO₂[END TIDAL CARBON DIOXIDE]

VII. TOTAL BLOOD LOSS

- **CLINICAL CORRELATION**
- **MAINTENANCE OF ANAESTHESIA**
- **ADEQUATE REVERSAL OF PATIENT FROM ANAESTHETIC AGENTS AND MUSCLES RELAXANTS**

4.POST OPERATIVE MONITORING

- **PAIN ASSESSMENT**
- **PATIENT CLINICAL MONITORING**
- **POST ANAESTHESIA SCORING SYSTEM [MODIFIED ALDRETE SCORE]**



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