



BAQAI MEDICAL UNIVERSITY
DEPARTMENT OF ANESTHESIA



DEPARTMENT OF ANESTHESIA

STUDY GUIDE



BAQAI MEDICAL UNIVERSITY

BAQAI MEDICAL COLLEGE

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BAQAI MEDICAL UNIVERSITY
DEPARTMENT OF ANESTHESIA



CONTENTS

S. NO	CONTENT	PAGE. NO
1	Title of Program	01
2	Title of Course	01
3	Vision and Mission of the University and Program	02
4	Course introduction (What relevance this course has to overall program and why I sit placed at this point)	03-04
5	Faculty Introduction with contact details	05
6	Outcomes of the program	06-09
7	Learning Objectives	10-11
8	Teaching methodologies adopted <ul style="list-style-type: none">• Lectures and clinical posting	12
9	Facilitator or Lecturer or Tutor of the session	13
10	Lesson plan	14-15
11	Time table and Schedule (include Topics and Instructor)	16
12	Textbook, articles, references and other reading material	17
13	Assessment guidelines (Formative and Summative)	18



**BAQAI MEDICAL UNIVERSITY
DEPARTMENT OF ANESTHESIA**



1. TITLE OF PROGRAM

Forth Year- Final Year MBBS

2. TITLE OF COURSE

Anaesthesia



BAQAI MEDICAL UNIVERSITY DEPARTMENT OF ANESTHESIA



3. VISION & MISSION

Baqai Medical University Vision Statement:

Baqai Medical University is a community based and community oriented center of excellence striving to mold students to become competent and caring health professionals, groomed to be social leaders capable of improving health, education and socioeconomic well-being locally, nationally and globally.

Baqai Medical University Mission Statement:

The mission of Baqai Medical College is to be recognized as a center of excellence in education, research, patient care and community services by producing highly capable and knowledgeable professionals.

Baqai Medical College Vision Statement:

Our vision is to enhance the access and excellence in medical education and research, with the aim of capacity building of students and faculty through innovations, and science and technology competencies, to achieve rapid and sustainable health. The medical graduate thus produced will be informed and trained enough to serve the community better, and to be advisor to the national and international health organizations.

Baqai Medical College Mission Statement:

The mission of the Baqai medical college is to produce medical graduates, who are accomplished individuals and have skills for problem solving, clinical judgment, research & leadership for medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of Pakistan.

4. INTRODUCTION OF ANAESTHESIA

Anesthesia is a medical treatment that prevents patients from feeling pain during surgical procedures, medical procedures, or other interventions. It is administered by anesthesiologists, who are medical doctors specializing in the field of anesthesiology.

There are three main types of anesthesia:

1. Local anesthesia: numbs a specific area or region.
2. Regional anesthesia: numbs a larger area, such as a limb or the lower back.
3. General anesthesia: induces a state of unconsciousness and complete pain relief.

Anesthesia is used to:

- Relieve pain during procedures
- Reduce anxiety and stress
- Prevent unwanted movements during procedures
- Ensure patient comfort and safety

Anesthesiologists consider various factors when determining the appropriate type and dosage of anesthesia, including:

- Patient age and health status
- Type and duration of the procedure
- Patient preferences and medical history

Anesthesia has a long history, dating back to ancient civilizations, and has evolved significantly over time with advances in medical science and technology. Today, anesthesia is a safe and effective medical treatment that plays a crucial role in modern medicine.



OUTCOMES OF THE MBBS PROGRAM

By the end of five years MBBS program, The Baqai Medical Collegegraduate will be able to:

- Write and report focused history, perform physical examination, formulate a diagnosis and management plan for common health problems.
- Utilize knowledge of basic and clinical sciences for patient care.
- Apply evidence-based practices for protecting, maintaining and promoting the health of individuals, families and community.
- Identify problems, critically review literature, conduct research and disseminate knowledge
- Lead other team members as per situational needs for quality health service.
- Acquire professional behaviors that embody lifelong learning, altruism, empathy and cultural sensitivity in provision health care service.

POLICIES AND PROCEDURES

Code of Conduct and Maintenance of Discipline of Students Regulations Under section 25(e)
BMU Act.1996

All University students shall be under the full disciplinary control of the University. No students shall be allowed to participate in politics. The action against the act of indiscipline shall include fines, debarring from attending class and cancellation of admission, depending on the gravity of indiscipline.

The following shall constitute acts of indiscipline for which action may be taken against the student or students:

- a. Breach of any rule public morals, such as:
 - Use of indecent or filthy language;
 - Use of immodest dress;
 - Use of undesirable remarks or gestures; and
 - Disorderly behavior, such as shouting, abusing, quarrelling, fighting and insolence.



BAQAI MEDICAL UNIVERSITY
DEPARTMENT OF ANESTHESIA



- b. Defiance of authority
- c. Action, defamatory of and derogatory to Islam
- d. Immorality
- e. Being found under the effect of an intoxicant or misuse of drugs including marijuana, LSD dope and other opioids.
- f. False personation or giving false information or willful suppression of information, cheating or deceiving.
- g. Inciting or staging a walk-out, a strike or an unauthorized procession.
- h. Shouting of slogans derogatory to the prestige of the University or the reputation of its officers or teachers.
- i. Visiting without a pass places which are not to be visited without a pass.
- j. Visiting places declared out of bounds for students

Every student must carry his / her Identity Card which will be open to examination and will be demanded at the time of entrance to the various University Faculties and functions.

No. student will be admitted to the facilities of the library, transport or the canteen unless he /she is in possession of the Identity Card.

Anesthesia/FH/BMU: 40/2024

Date: 08-05-24

1. FACULTY INTRODUCTION

S. NO	NAME & EMAIL	DESIGNATION	CONTACT	PMDC REG. NO	EXPERIENCE
1	Dr. Ghulam Murtaza ghulammurtaza@baqai.edu.pk	HOD	0322-3631223	37696-S	16 years
2	Dr. Tariq Hussain Mughal dr.tariqmughal8159@gmail.com	Assistant Professor	0333-3166267	16643-S	20 years
3	Dr. M. Hamood Farouqi hamood.farooqui@gmail.com	Senior Registrar	0333-3517098	70325-S	1 ½ years
4	Dr. Aimen Zafar dr.aimenzafar@baqai.edu.pk	Senior Registrar	0332-3293395	70136-S	2 years



Dr. Ghulam Murtaza
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BAQAI MEDICAL UNIVERSITY

DEPARTMENT OF ANAESTHESIA



2. OUTCOMES OF THE ANAESTHESIA COURSE

The Baqai University graduate of the MBBS program will be able to:

1. Utilize knowledge of basic and clinical sciences for patient perioperative care.
2. Focused history, perform physical examination; formulate a management.
3. Identify problems, critically review literature, conduct research and disseminate knowledge.
4. Lead other team members as per situational needs for quality health service.
5. Apply evidence based practices for protecting, maintaining and promoting the health of individuals, families and community.

COMPETENCY:

By the end of course, the student should:

- Show responsible and compassionate behavior with the patient and family, considering the cultural, social and economic background, and in dealing with all levels of education and abilities.
- Use the required communication skills for taking appropriate clinical history and conducting clinical examination.
- Appreciate the role of perfect understanding of basic science (anatomy, physiology, pathology, etc.) And the pathophysiological process relevant to anesthesia practice, in diagnosis and management of common illness in patient and community.
- Have the knowledge and skills necessary to identify the health problems of a patient in emergency situations, common critical conditions.
- Learning in a problem based style.



BAQAI MEDICAL UNIVERSITY

DEPARTMENT OF ANAESTHESIA



a. KNOWLEDGE AND SKILLS TO BE ACQUIRED

By the end of this course the students should be able to:

- 1) Explain to the patient, honestly and in simple terms, the anesthetic concepts of disease and surgical interventions.
- 2) Take full medical history, with appropriate sequence and comprehensiveness in ot, write it in a clear presentable way for others to read and understand.
- 3) Asked to examine a patient; prepare the appropriate setup for physical examination, carry out the examination in appropriate manner, sequence and comprehensiveness of all systems, relevant to surgical problems, write his notes in a clear way for others.
- 4) Presented with any of the following real, verbal or written emergency problems; perform or suggest urgent lifesaving procedures, diagnose, manage or suggest steps of effective management of these conditions: multiple injured patients, shock, bleeding patient, coma, chest pain, cardiac arrest, convulsions, respiratory distress, and septicemia.

COGNITIVE SKILLS

1. Take a detailed history from a patient.
2. Perform a complete physical examination of a patient.
3. Present summary of the assigned case to a faculty member during preoperative assessment.

The final outcomes in anesthesia rotations include the following:

- To recognize and understand common conditions
- To recognize and understand emergency surgical presentations
- To be aware of what treatment possibilities are available, including non-operative
- To understand the principles of preoperative optimization
- To understand postoperative complications
- To understand the types and risks of anesthetic procedures
- To be able to explain in general terms to a patient the implications of a common surgical diagnosis
- To have sufficient basic understanding of surgery to help with future career choice.



BAQAI MEDICAL UNIVERSITY

DEPARTMENT OF ANAESTHESIA



COURSE DESIGN:

The training requirements are divided into 2 main categories which differ as regards methods of training and evaluation:

1. **THEORETICAL PART:** which include:

LECTURES: The formal lecture schedule is delivered by consultants within their own discipline and takes the form of didactic lectures.

TUTORIALS: Students are assigned to a 'rotating tutorial' group and receive tutorials throughout the different tutors within the area of anaesthesia. A fixed topic is usually discussed by the tutors and as such they function as an adjunct to the formal lecture schedule delivered. Students are attached to anaesthesia groups throughout the course and receive regular tutorials from the members of these groups in addition to the above mentioned tutorials, as detailed in the individual team timetables.



BAQAI MEDICAL UNIVERSITY

DEPARTMENT OF ANAESTHESIA



CLINICAL ATTACHMENTS

OPERATING THEATER: It is the stage in which practice integrated knowledge with skills, observing the process starting by calling pt. to shift him back to ward. Be on time for each case. You should arrive with the patient or even before. Cases typically start at 8:30, you are not expected to be on time to the first case as you have class, but you are expected to show up after you finish up your morning lecture. Try to meet the patient preoperatively in the pre-care; you need to be diligent about checking on the room and the patient in the holding area.

LECTURES FOR THE FINAL YEAR MBBS STUDENTS

Rotation days: 10 hours total 50

5 hours per day (2 hours for theoretical knowledge)(3 hours for clinical round in or)

1. Anesthetic equipment and monitors
2. Pharmacology of iv anesthetic drugs
3. Pharmacology of inhalational agents
4. general anesthesia management
5. regional anesthesia and pain
6. Acid base management
7. Fluid and electrolyte balance
8. Blood component therapy
9. Post anesthesia care
10. Anesthesia complications



7. LEARNING OBJECTIVES

By the end of this course the students should be able to:

ANESTHESIA EQUIPMENT AND MONITORS
<ul style="list-style-type: none">● Identify the equipment
<ul style="list-style-type: none">● Classify the monitors
<ul style="list-style-type: none">● Interpret the values of vitals on monitors
<ul style="list-style-type: none">● Explain problems and basic management
PHARMACOLOGY OF IV ANESTHETIC AGENT MECHANISM OF ACTION
<ul style="list-style-type: none">● Classify drugs
<ul style="list-style-type: none">● Knows mechanism of action
<ul style="list-style-type: none">● Define hemodynamic effect
<ul style="list-style-type: none">● Explain dose of common agents at least 3
PHARMACOLOGY OF INHALATIONAL AGENTS
<ul style="list-style-type: none">● Classify agents used
<ul style="list-style-type: none">● Knows hemodynamic effects
<ul style="list-style-type: none">● Define mac
GENERAL ANESTHESIA MANAGEMENT
<ul style="list-style-type: none">● Induction method
<ul style="list-style-type: none">● Define maintenance of anesthesia
<ul style="list-style-type: none">● Explain recovery
REGIONAL ANESTHESIA
<ul style="list-style-type: none">● Regional anesthesia
<ul style="list-style-type: none">● Knows spinal and epidural methods
<ul style="list-style-type: none">● Anatomy of spinal space
ACID BASE BALANCE

<ul style="list-style-type: none"> • Explain acidosis
<ul style="list-style-type: none"> • Knows alkalosis
<ul style="list-style-type: none"> • Classify causes
<ul style="list-style-type: none"> • Acid BASE BALANCE
<p>FLUID ELECTROLYTES</p>
<ul style="list-style-type: none"> • Explain hypernatremia and hyponatremia
<ul style="list-style-type: none"> • Knows hypokalemia and hyperkalemia
<ul style="list-style-type: none"> • Classify rehydration solutions at least one
<ul style="list-style-type: none"> • Fluid electrolytes
<p>BLOOD COMPONENT THERAPY</p>
<ul style="list-style-type: none"> • Define hemorrhage
<ul style="list-style-type: none"> • Explain anemia
<ul style="list-style-type: none"> • Knows thrombocytopenia
<p>POSTANESTHESIA CARE UNIT</p>
<ul style="list-style-type: none"> • AT the end of day 9 student should be able to
<ul style="list-style-type: none"> • Define Alderman recovery score
<ul style="list-style-type: none"> • Explain parameters of discharge
<ul style="list-style-type: none"> • Classify recovery room issues
<p>ANESTHESIA COMPLICATIONS</p>
<ul style="list-style-type: none"> • Define hypoxia
<ul style="list-style-type: none"> • Explain CO₂ disturbances
<ul style="list-style-type: none"> • Knows causes of cardiac arrest

8. TEACHING METHODOLOGIES ADOPTED

GENERAL LECTURE:

- PowerPoint Presentation
- Use of multimedia
- Text Book references (Moran Mikhail's, Aitken head) Anesthesia Department.
- Google / YouTube assistance.
- Tutorial

CLINICAL TEACHING:

- Preoperative Clinic
- History Taking
- Case based learning
- Practical

4. FACILITATOR OR LECTURER OR TUTOR OF THE SESSION

SR. NO.	SESSION	FACILITATOR
1.	<ul style="list-style-type: none">• Introduction to Anesthesia• Anesthesia Equipment• Anesthesia Ventilator• Basic Life Support• Airway Management	Dr. Ghulam Murtaza
2.	<ul style="list-style-type: none">• Regional Anesthesia• Preoperative Assessment• Peri operative fluid & Blood theory• Assessment	Dr. Hamood Farooqi
3.	<ul style="list-style-type: none">• Pharmacology of Anesthesia Drugs• Introduction to SICU/PACU• Pain Management	Dr. Tariq Hussain Mughal
4.	<ul style="list-style-type: none">5. Intraoperative monitoring6. Assessment	Dr. Aimen Zafar



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Anesthesia/FH/BMU: 42/2024

Date: 08-05-24

5. LESSON PLAN

Module Name or Number	Topic	Learning Objective	Learning Resource	Date & Time	Facilitator	Duration	Venue
1	Equipment and Monitoring	By the end of the lecture, the student must be able to: 1. Identify anesthesia equipment, indications and contraindications. 2. Interpret the baseline monitoring values. 3. Identify the fluctuations in values and basic pharmacological management.	Multimedia presentation		Dr. Aimen Zafar	1 Hour	Moin Baqai hall.
2	Anesthesia and General Anesthesia	By the end of the lecture, the students should be able to: 1. Define anesthesia and classify the different types of anesthesia. 2. Classify different types of general anesthesia: a. Inhalation anesthesia use and side effects of different type of volatile anesthesia. b. Intravenous anesthesia use and side effects of medication used in intravenous anesthesia. c. Balance anesthesia and Total intravenous anesthesia (TIVA)	Multimedia presentation		Dr. Murtuza Sheikh	1 Hour	Moin Baqai hall
3	Regional Anesthesia	By the end of the lecture, the student should be able to: 1. Define regional anesthesia. 2. Types of regional anesthesia with their	Multimedia Presentation		Dr. Hamood Farooqi	1 Hour	Moin Baqai Hall.



BAQAI MEDICAL UNIVERSITY

DEPARTMENT OF ANAESTHESIA



Module Name or Number	Topic	Learning Objective	Learning Resource	Date & Time	Facilitator	Duration	Venue
		indications, contraindications, complications and uses. 3. Type of regional anesthesia: a. Epidural b. Spinal c. Caudal d. Peripheral nerve blocks e. Intravenous regional anesthesia					
4	Pharmacology of anesthetic agents	By the end of the lecture, student should be able to: Name different types of intravenous and inhalational anesthetic agents along with their physical and chemical properties and their effects on CVS, CNS and systems of body.	Multimedia presentation		Dr. Tariq Mughal	1 Hour	Moin Baqai Hall.
5	Pain Management	By the end of the lecture, student should be able to: Define pain, classify different types of pain with examples, can elaborate pain pathway and have knowledge of investigation and intraoperative and postoperative pain management.	Multimedia Presentation		Dr. Tariq Mughal	1 hour	Moin Baqai Hall.

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Anesthesia/FH/BMU: 43/2024

Date: 08-05-24

6. TIME TABLE AND SCHEDULE
4th Year OT Rotation

Sr. No.	Faculty Name	OT Orientation 10:30am – 12:30pm	Lecture 12:30pm – 02:00pm
7.	Dr. Ghulam Murtaza	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Introduction to Anesthesia• General Anesthesia
8.	Dr. Hamood Farooqi	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Regional Anesthesia• Spinal• Epidural• Caudal• Interval Regional
9.	Dr. Tariq Hussain Mughal	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Pharmacology of general & regional• Anesthesia Drug
10.	Dr. Hamood Farooqi	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Preoperative Assessment• HTN, DM, Labor diseases
11.	Dr. Hamood Farooqi	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Peri operative fluid & Blood theory
12.	Dr. Aimen Zafar	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Intraoperative monitoring• ECG, SDO, BP, Temperature
13.	Dr. Ghulam Murtaza	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Anesthesia Equipment• Anesthesia Ventilator
14.	Dr. Tariq Hussain Mughal	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Introduction to SICU/PACU• Postoperative Pain Management
15.	Dr. Ghulam Murtaza	OT Orientation 10:30am – 12:30pm	<ul style="list-style-type: none">• Basic Life Support• Airway Management
16.	Dr. Hamood Farooqi Dr. Aimen Zafar	MCQs, SAQs 10:30am – 12:30pm	<ul style="list-style-type: none">• Quiz, Viva• Clinical Examination

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TEXTBOOKS, ARTICLES REFERENCES AND OTHER READING MATERIAL

16

- Morgan and Mikhail's book of
anesthesiology
- Aitken head book of
anesthesiology
- Anesthesia tutorial of the week



ASSESSMENT GUIDELINES **(FORMATIVE & SUMMATIVE)**

INTERNAL EVALUATION

A ward test is conducted at the end of ward rotation posting which includes:

▪ Attendance	50%
▪ Spotting	10%
▪ MCQ	10%
▪ Viva	20%
▪ SAQS	10%
▪ Total	<hr/> 100 %

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