

**MASTER OF MEDICINE
(ANAESTHESIOLOGY)**

ADMISSION REQUIREMENTS

General requirements

These will conform to the Postgraduate Policies and Regulations of the University.

Specific requirements

Malaysian applicant

- a) Possess a degree in M.B.B.S., M.B.Ch.B., M.D., or others of equivalent standard from a recognized university.
- b) Have clinical experience in anaesthesiology and critical care of at least 1 year (not inclusive of housemanship) certified by relevant authority.
- c) Registered with Malaysian Medical Council (MMC).
- d) Pass the common assessment (entry exam) and requirement by the UPU, MOH and JPA.

International applicant

- a) Possess a degree in M.B.B.S., M.B.Ch.B., M.D., or others of equivalent standard from a recognized university.
- b) Have clinical experience in anaesthesiology and critical care of at least 1 year (not inclusive of housemanship) certified by relevant authority.
- c) The applicant is required to undergo a three to six- months maximum probation period in a anaesthesiology posting prior to acceptance into the programme.
- d) Registered with Malaysian Medical Council (MMC) under Malaysian Medical Act 1971 (Act no 50).

Other requirements

- a) Favourable referees' reports.
- b) Successfully completed the Entrance Evaluation by the Postgraduate Committee of the Department of Anaesthesiology and Critical Care.
- c) Any other relevant entrance evaluations as required by the University.

CURRICULUM STRUCTURE

The Masters of Medicine (Anaesthesiology) programme is a clinical coursework with a component of research activity that will comprise not more than 30% of the whole programme.

SYNOPSIS OF PROGRAMME

The outline of the knowledge skills and attitude required for the MMed (Anaesthesiology) programme is enumerated below:-

Phase I (Junior Medical Officer in Anaesthesiology and Critical Care)

The general objective is to enable students to acquire knowledge of the basic medical sciences and principles of anaesthesiology and Critical Care. They have to apply the knowledge in the clinical problem-solving and decision-making process for the management of patients including performance of procedures under supervision. They are considered the post as junior medical officer.

The general objective is to enable students to acquire knowledge, skills and develop good attitude appropriate for the management of patients in the general Anaesthesiology and Critical Care practice.

The student will start the elective posting for three months after year one. They have to start preparing the proposal for the dissertation during this period.

In year 1 (Phase I), candidates are required to sit for Part I Professional examination. Maximum number of attempts allowed is four (4). Part I examination is conducted as conjoint examination with other universities offering similar courses in Anaesthesiology and Critical Care.

Year 1:

Learning process for the trainer will be on fundamentals in Anaesthesiology and Critical Care. The trainer will focus on physiology, applied physiology, pharmacology, statistic with research methodology and clinical measurement with basic clinical skill in anaesthesiology and critical care.

Phase II (Senior Medical Officer in Anaesthesiology and Critical Care)

Year 2 & 3:

The general objective is to enable the trainee to acquire knowledge, skills and develop attitude in the management of patients and the Anaesthesiology and Critical Care team in at the level of the senior medical officer during year 2 and 3.

Learning process for the trainer will be on introduction to research methodology and submission of research proposal. The trainer will focus on sub specialties area in anaesthesiology and critical care such as neuro anaesthesia, pain, intensive care, cardiothoracic and vascular anaesthesia, paediatric & neonatal ICU, paediatric anaesthesia and emergency medicine.

The general objective is to enable the trainee to function as the senior medical officer in the anaesthesiology and Critical Care team and to manage critically ill patients. The trainee will be able to perform as the right hand person to the consultant. They are considered the post as registrar during year 4. They also have to submit the dissertation six months before eligible for final professional examination.

Phase III (Registrar)

Phase III (Registrar)

Year 4:

Learning process for the trainer will be on advanced anaesthesiology and critical care. They also have to complete and submit the dissertation project, case reports with Islamic Input. The trainer will be treated as registrar in training.

Mode of Delivery:

- Lecture
- Research
- Case write-ups
- Hospital work
- Dissertation
- Anaesthesiology and Critical Care log book
- Clinical teaching
- Surgical teaching
- Islamic input
- Seminar / tutorial
- Journal review

- Specialized Anaesthesiology and Critical Care Teaching

MASTER OF MEDICINE (ANAESTHESIOLOGY)

OVERVIEW OF PROGRAMME

Schedule 1: Course Summary

	Phase I Basic Anaesthesia & Intensive Care		Phase II		Phase III
	Year 1	Year 2	Year 3	Year 4	
Basic Anaesthesiology & Critical Care Training	<p>Junior Medical Officer in Anaesthesiology & Critical Care (Attention to basic Anaesthesiology & Critical Care)</p> <p>The aim is to sit and pass Part 1 and acquire basic skill in anaesthesiology and critical care</p> <p>PRIMARY (PART 1) EXAMINATION (End of 12 months)</p>	<p>Appointed as Senior Medical Officer in Anaesthesiology & Critical Care (Attention to advanced Anaesthesiology & Critical Care)</p> <p>Sub specialty in</p> <p>a. Intensive care (6 months) b. Emergency medicine (1 month) c. Cardiothoracic & Vascular anaesthesia (IJN – 2 months) d. Pain (2 months) e. Neuroanaesthesia (2 months) f. Paediatric anaesthesia (2 months) g. Paediatric & Neonatal ICU (2 months) h. Obstetric anaesthesia (2 months)</p>		<p>Registrar</p> <p>a. Applied Anatomy (2 months) b. Anaesthetist Equipments (2 months) c. Clinical Anaesthesiology (1 month) d. Critical Care & Resuscitation (1 month) e. Respiratory & Cardiology (2 months)</p>	
		<p>Elective posting</p> <p>Elective posting for three (3) months after Year 1</p>			

Case write-up	<p>Writing - up of 1 case report in 4 years (Anaesthesiology & Critical Care with Islamic Input)</p>				
Dissertation	<p>Preparing research proposal for dissertation</p>	<p>Proposal presentation</p>	<p>Data collection a. Analysis and interpretation of data b. Summary</p> <p>NB: At end of 3rd year, write up of dissertation should have been read and edited by the supervisor</p>	<p>Data analysis and</p>	<p>Submission of Dissertation</p>
Course	<p>a. Part I Course b. GCP c. Research methodology workshop d. Basic Statistic Workshop e. Any releveant course to posting</p>		<p>a. BLS & ACLS Course b. Airway Workshop c. Simulator Course d. Medical Ethic Workshop e. Any relevant course relevant to posting</p>	<p>Part II Course</p>	<p>Part II Exam</p>
<p>Islamic Input in Personal Professional Development as Anaesthesia Specialist</p>					

CONTENT AND PROGRAMME STRUCTURE

The programme is divided into 4 years aimed at allowing progressive mastery of knowledge, skills and attitude, increasing responsibilities and independence.

PHASE I

Year 1

The general objective is to enable students to acquire knowledge of the basic medical sciences and principles of anaesthesiology. The trainee must apply the knowledge in the basic science, statistic, clinical measurement and clinical problem-solving and decision-making process in the management of patients including performance of procedures under supervision.

PHASE II

Year 2 & Year 3

The general objective is to enable students to acquire knowledge, skills and develop good attitude appropriate for the management of patients in the various anaesthesiology subspecialties which will be useful in their general anaesthesiology and critical care practice. Trainees will be rotated in the various operation rooms of various surgical subspecialties. Trainees also will be posted in cardiothoracic anaesthesia either in IJN or any hospital equipped with this fields, accident & Emergency field. During this period, the trainee should start the proposal of the dissertation.

PHASE III

Year 4

The general objective is to enable the trainee to function as the consultant in training in the anaesthesiology and critical care team and to manage critically ill patients. The trainee will be able to perform as the right hand person to the consultant. During this period, the trainee should start written the dissertation project, completed the log book and case report.

PHASE I: BASIC MEDICAL SCIENCES

Year 1

The trainees will be tested on knowledge of the basic medical science relevant to general principle in the anaesthesiology in order to understand and correlate with clinical conduct of anaesthesia. In part I the stress will be more towards the understanding of physiology, applied physiology and pharmacology and they are expected to familiarize themselves with the diagnosis and management of common medical and surgical conditions.

The trainees will be expected to have a sound knowledge and skills of the principles of conducting anaesthesia for general surgical, orthopaedic, gynaecological, obstetric, ENT, ophthalmology, neurosurgical, paediatric surgery and dental surgery. The course encompasses the aspects of applied pharmacology in relation to anaesthesiology. The trainees will be emphasis on the pathophysiology and treatment of fundamental clinical problems, such as organ failure, increased intracranial pressure and shock. The trainees are also requiring to be exposed in the clinical measurement and management of patients in the intensive care unit and accident & emergency unit. It also expounds discussion on research carried out in this field. There will research methodology course is also places due emphasis on statistics and clinical trials.

Upon completion of this course, students should be able to:

1. Able to decide and defend the knowledge of basic medical sciences and principles of anaesthesiology in the clinical reasoning process of diagnosis and management of anaesthesiology problems. (C6)
2. Able to initiate, evaluate and perform perioperative assessment and treat them effectively. (C6, P7, A5)
3. Able to verify, specify and choose appropriate drugs and monitor these drugs effects to the patient during anaesthesia and in ICU posting. (C6, A5, P7)
4. Able to choose, propose and initiate the anaesthetic practice during the operation using general anaesthesia or local anaesthesia. (A5, P7, C6)
5. Able to select, specify and use instruments in the operation theatre and ICU and interpreted the information gained. (A5, P7, C6)
6. Able to consider, initiate and perform using special instruments in the operation theatre and ICU and interpreted the information gained. (A5, P7, C6)
7. Able to judge, discriminate and manage the imbalance physiology during anaesthesia and critical ill patient in operation theatre and ICU. (C6, A5, P7)

8. Able to display leadership skill by initiate, recommend and perform the CPR for the patient. (A5, S4,C6, P7)
9. Able to display to use non-verbal skill during crisis management, understand the working environment and show responsibility throughout the process. (A5, CS 8, CT 7, TS 5)
10. Provide appropriate initial care based on basic anaesthesiology principles by:
 - a) Able to manage a general assessment and formulate initial management. (P7)
 - b) Able to design basic investigations and coordinate resuscitation procedures with competency. (P7)
 - c) Combine the information and propose it for further management of the patient in consultation with senior colleagues.(P7, A5)
11. Critically appraise and apply information from the latest literature and other published data in case write-ups and case presentation. (LL3)
12. Able to perform on call and in-charge the operation theatre and appropriately consult the case with specialist on call for difficult case. (KK 4)
13. Able to show good communication skill with patients from different background and show ethically practice. (CS 6, EM 3)
14. Combine the Islamic teachings in the management of patients. (P7)

Instructional Strategies:

1. Clinical posting in anaesthesiology and critical care
2. Basic Statistic workshop
3. Research Methodology Workshop
4. Basic CPR Course (Refresher)
5. Good Clinical Practice
6. Epidemiology Workshop
7. Lectures, seminar, practical workshop in Islamic topics
8. Preparatory Course for Part 1
9. Four (4) Case write-ups

The lecturer or supervisor will determine the cases for discussion.

The trainees are responsible to present and participate in these conferences.

List of Conference/Seminar topics are:

1. Introduction to anaesthesia
2. Introduction to critical care
3. Perioperative assessment, preparation and management of patient perioperatively
4. General anesthesia technique

5. Local anaesthetic technique
6. Monitoring patient during anaesthesia
7. Principle of pain management
8. Cardiopulmonary resuscitation
 - Basic life support
 - Advanced life support

Clinical Activities

1. Clinical training for 48 weeks
2. Supervision by the lecturers (2 hour x 1 week)
 - Induction, intubation and reversal of patient during anaesthesia
 - Monitoring of patient during anaesthesia
 - Patient assessment peri-operatively dan management of patient post anaesthesia
 - Performing procedure such as regional block, CVP insertion etc.
3. Clinical conference of the selected cases/ Journal Club/ Audit/ Critical Incidence (1 hour x 4 weeks).

The lecturers or supervisors are responsible for organizing the meeting. The candidates are required to present new articles from selected journal. The candidates are requested to give their opinion or critique during presentation.

The first part is a full time training at UIAM and HTAA for two years. In this part, candidate is to undergo training in the elective posting after phase I examination.

EXAMINATION

PHASE I EXAMINATION

- i. All Phase 1 Master candidate is to sit for **Part I [Masters of Medicine (Anaesthesiology) Part I]** six (6) months after the date of registration. A candidate who fails must re sit for the examination in the following six months until he passes. (Maximum number of attempts four (4+1 (appeal)). Candidate who fails this examination is not allowed to progress to Year 2 until he passes this Part I examination.
- ii. The examination consists of two (2) sets of multiple-choice questions (MCQ) in basic anatomy, physiology, applied physiology, biochemistry, microbiology, immunology, pharmacology, statistic, endocrinology and clinical measurement. Candidate who **fail either the MCQ and Essay/Short Notes and/or Viva Voce** is considered to fail **Part I Examination**.

PHASE II EXAMINATION

- i. Complies with the National Conjoint Board of Anaesthesiology Examination Rules and Regulation.
- ii. The examination comprises the written theory, clinical and viva voce will be according to the National Anaesthesiology Conjoint Board examination.
- iii. A candidate is allowed 4 attempts in the Part II examination within 2 years.

REQUIREMENTS FOR PASSING AN EXAMINATION

A candidate shall be deemed to have passed the Examinations prescribed upon obtaining the following:

1. Part I Examination

The trainees must have 50% or more of the aggregate combined marks for each of the components of the Part I Examination.

2. Part II Examination

The trainees must comply with the National Conjoint Board of Anaesthesiology Examination Rules and Regulation.

EVALUATION AND GRADING SYSTEM

A. EXAMINATIONS

There are two examinations:

Part 1: The examination is aimed at assessing the trainee's knowledge in physiology, pathology, pharmacology, clinical measurement, statistic, principles of anaesthesiology & Critical Care and application of the knowledge in problem solving and decision making.

It consists of multiple true-false questions, short notes/ essay and a viva voce.

The examination is conducted every 6 months.

A candidate is allowed a maximum of 4 attempts at the examination within a period of 2 years.

Part 11: The examination comprises the written theory, clinical and viva voce will be according to the National Anaesthesiology Conjoint Board examination.

A candidate is allowed 4 attempts in the Part II examination within seven (7) years.

B. EXAMINATION COMPONENTS AND ALLOCATION OF MARKS

1) Part I Examination

The components of the Part I Examination and the marks to be allocated for each component shall be as follow:

Part I Examination (End of Year 1)	100%
A. Theory	60%
i. MCQ	30%
ii. Essay / Short Notes	30%
B. Clinical	40%
i. Viva-voce	40%
TOTAL	100%

Trainees are required to pass component A (written) before being allowed to sit the component B (viva voce) examination. Trainees are deemed to have passed for Part 1 examination only after passing both components successfully.

2) **Part II Examination**

Complies with the National Conjoint Board of Anaesthesiology Examination Rules and Regulation.

C. REQUIREMENTS FOR PASSING AN EXAMINATION

A candidate shall be deemed to have passed the Examinations prescribed upon obtaining the following:

1. **Part I Examination**

The trainees must have 50% or more of the aggregate combined marks for each of the components of the Part I Examination.

2. **Part II Examination**

The trainees must comply with the National Conjoint Board of Anaesthesiology Examination Rules and Regulation.

D. RE-EXAMINATION

1. **Part I Re-Examination**

- a. A candidate who has failed the Part I Examination may be permitted a re-examination on three separate occasions at six monthly intervals.
- b. The Part I Re-Examination shall consist of the same components and shall be assessed and graded in the same manner as prescribed for the Part I Examination.
- c. A candidate who fails the re-examination on the third occasion shall be deemed to have failed the Part I Examination and shall not be permitted to repeat the programme of study except in special circumstances on the recommendation of the Kulliyah of Medicine and with approval by the Senate.

2. Part II Re-Examination

- a. A candidate who has failed the Part II Examination may be permitted a re-examination on three separate occasions at six monthly intervals.
- b. The Part II Re-Examination shall consist of the same components and shall be assessed and graded in the same manner as prescribed for the Part II Examination.
- c. A candidate who fails the re-examination on the third occasion shall be deemed to have failed the Part II Examination and shall not be permitted to repeat the programme of study except in special circumstances on the recommendation of the Kulliyyah of Medicine and with approval by the Senate.
- d. A candidate whose dissertation is deemed unsatisfactory by the Committee of Examiners may be referred for further work in his research report over a period of time to be determined by the Committee of Examiners except that such period of time as determined shall not exceed six months on any one occasion. At the end of the prescribed period the candidate shall be required to submit the research report for re-examination. A candidate who fails to submit the research report by the end of the prescribed period for re-examination shall be deemed to have failed the research report.
- e. A candidate shall be permitted to submit his research report for re-examination on not more than two occasions.
- f. A candidate who fails the research report after the second re-examination shall be deemed to have failed the dissertation and shall not be permitted to repeat the programme of study except in special circumstances on the recommendation of the Kulliyyah of Medicine and with approval of the Senate.
- g. A candidate who has passed the Re-Examination for the Examinations mentioned in paragraphs D (1) and (2) shall be deemed to have passed the prescribed Examinations.

ACADEMIC STAFF

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