MASTER OF SCIENCE (CLINICAL ANATOMY) PROGRAMME

PROGRAMME GOAL

Produce master of science graduates in human anatomy that are knowledgeable, highly skilled, professional, ethical and able to contribute to national development

PROGRAMME OBJECTIVES

The objectives of the Master of Science (Clinical Anatomy) programme are to produce graduates who can:

- Apply human anatomy knowledge and practical skills in clinical practice
- Communicate effectively with students and academic members in delivering knowledge and solving issues related to the human anatomy field in a professional and ethical manner
- Demonstrate management and leadership skills as well as lifelong learning for career development

ADMISSION REQUIREMENTS

General Admission Requirements

To enter the Master of Science (Clinical Anatomy) programme, the candidate must have one of the following qualifications:

- Bachelor of Medicine and Bachelor of Surgery (MBBS) or Doctor of Medicine (MD) or Bachelor of Dentistry or Bachelor of Veterinary Science from a local university or from a university approved by the University Senate
- A Bachelor's Degree containing human anatomy subjects such as Health Sciences, Biomedical, Pharmaceutical or its equivalent from local universities or from universities approved by the University Senate provided the following additional requirements are fulfilled:

3. Obtained CGPA of more than 3.00 or CGPA of 2.75 to 3.00 with at least 3 years' experience in relevant fields
4. At least grade B in human anatomy subjects

English Requirement

An international applicant must meet the following additional requirement: pass the TOEFL (paper-based test) with a score of 550 or pass IELTS with a score of 6.0

International applicants who had graduated from an Institution of Higher Learning in which the medium of instruction at Bachelor level is English; are excluded from the above additional terms.

REGISTRATION AND FEES

Successful candidates will register with the University and pay the fees charged. Entry registration will be conducted at the start of the course and renewed every semester.

PRE-REQUISITE COURSES/BAHASA MALAYSIA

Bahasa Malaysia 1 (LKM 100) course is compulsory for all foreign students and must be taken and passed prior to graduation.

CURRICULUM STRUCTURE

Master of Science (Clinical Anatomy) programme is a full-time mixed mode programme. The minimum duration of study is 2 years (4 semesters) and the maximum duration is 3 years (6 semesters). Each year consists of 2 semesters. The duration of each semester is approximately 6 months. Students are required to obtain 40 units in total, which includes 20 units from 7 core courses in the first year and an additional 20 units from a research project in the second year (Table 1).

Candidates are encouraged to participate in the Medical Doctor Programme, PPSP USM teaching activities. This involvement is considered as part of the training in the MSc (Clinical Anatomy) Programme.

TEACHING AND LEARNING METHODS

First Year of Study

Teaching in first year of study is in the form of lectures, presentations, practicals, assignments and student-directed learning. Class attendances are compulsory and are recorded. Any student who is regularly absent without medical certificates will be reported to the Programme Coordinator.

Second Year of Study – Research and Dissertation (GAT 511)

Candidates are required to submit a research project title and present a research proposal during Anatomy Education Course (GAM 504) in the second semester of first year. The research project should commence as soon as the first semester of second year begins. The time frame for students to complete the research project and dissertation writing is approximately 2 semesters.

A supervisor will be appointed at the beginning of second semester of first year to supervise and advise on the project's work. Ethics approval must be obtained at the beginning of the second year under the guidance of the supervisor. Students are required to complete a progress report form (PPSP/PG/Anat/CP1/L2) every 3 months and submit them to their respective supervisor. More information can be obtained from the ***'Guide for the Preparation of Dissertation for Master of Science (Clinical Anatomy)*** (**PPSP/PG/Anat/IR2).**

Table 1: Programme Structure Master of Science (Clinical Anatomy)

YEAR 1					
SEMESTER 1			**SEMESTER 2**		
CODE	**COURSE**	**UNIT**	**CODE**	**COURSE**	**UNIT**
GAT 506	Gross and Clinical Anatomy 1 (Anatomi Gros dan Klinikal 1)	5	GAT 507	Gross and Clinical Anatomy 2 (Anatomi Gros dan Klinikal 2)	2
GAT 508	Histology and Basic Genetics (Histologi dan Genetik Asas)	3	GAT 510	Neuroanatomy and Clinical (Neuroanatomi dan Klinikal)	4

GAT 509	Developmental Anatomy (Anatomi Perkembangan)	2	GAM 504	Anatomy Education (Pendidikan Anatomi)	2
			GAM 503	Biostatistics (Biostatistik)	2
TOTAL UNITS		**10**	**TOTAL UNITS**		**10**

YEAR 2					
SEMESTER 1			**SEMESTER 2**		
CODE	**COURSE**	**UNITS**	**CODE**	**COURSE**	**UNITS**
GAT 511	Research and Dissertation (Penyelidikan dan Disertasi)	10	GAT 511	Research and Dissertation (Penyelidikan dan Disertasi)	10
TOTAL UNITS		**10**	**TOTAL UNITS**		**10**

***Total number of units required for graduation = 40**

Students are required to attend relevant courses, namely:

- '*Intensive Course on Basic Statistics and Research Methodology'*
- '*Intensive Course on Intermediate Statistics, Scientific Writing and Producing a Quality Thesis'*
- Courses organized by the Human Research Ethic Committee (JEPeM) and the Animal Ethics Committee, USM (AECUSM)

Candidates are required to refer to the guidelines provided in ***'Guide for the Preparation of Dissertation for Master of Science (Clinical Anatomy)*** (**PPSP/PG/Anat/IR2)** for preparation of dissertation.

Candidates are required to submit a complete dissertation 2 months before the viva voce (ie at week 32 or 33 in the second semester of second year) to be examined by appointed panel of examiners. Viva voce will be conducted on week 40 or 41 (in the second semester of second year).

EVALUATION AND EXAMINATION

Course evaluation is through examination, coursework and research project. Assessment of coursework may include aspects of classroom engagement, oral presentations, projects and assignments.

Examinations are held at the end of first and second semesters of first year; and at the end of second semester of second year. Payment of fees should be completed and the requirements of teaching and learning sessions, including course requirements must be met before a student is eligible to sit for the examinations of the registered courses. Examinations are in the form of essays, multiple-choice questions (MCQ), objective structured practical examination (OSPE) and viva-voce (Table 2 & 3).

Students are required to sit for examinations of all the courses determined by the programme. Students are allowed to sit for examinations of registered courses only. Examination slips are required for admission into the examination venue. In case of an emergency, where a student is unable to sit for any examination, he/she is required to immediately notify the Examination Unit in writing. Medical certificates must accompany this notification.

Examinations that are conducted at the end of:

- **First Semester of First Year**
    1. Gross & Clinical Anatomy 1
    2. Histology and Basic Genetic
    3. Developmental Anatomy
- **Second Semester of First Year**
    1. Gross & Clinical Anatomy 2
    2. Neuroanatomy and Clinical
    3. Anatomy Education
    4. Biostatistics
- **Second Semester of Second Year**

1. Research and Dissertation Course (GAT 511)

Assessment is based on the dissertation writing (80%) and viva voce examination (20%) at the end of the second semester of second year (Table 4). In the viva voce examination, candidates are required to present and defend their dissertation in response to the examiners' questions. Students must pass both of the dissertation and viva voce examination components.

Exam Barring

Students may be barred from taking the examination if they do not meet the course requirements such as class absenteeism, and not completing the course work component requirements. Students are also barred from taking the examination if they do not pay the programme fees. Blocked courses will be given an 'X' grade.

ACADEMIC PERFORMANCE REQUIREMENTS

Student performance assessment is based on a Grade Point Average (GPA) and a Cumulative Grade Point Average (CGPA). Students must obtain a minimum Cumulative Grade Point Average (CGPA) of 3.0 in order to graduate.

The grading system for all courses is as shown in table 5. The minimum passing grade for each course is C+ (grade point 2.33). Students must obtain a minimum grade of C+ for all core courses, failing which students must repeat the course; depending on his/her duration of candidature.

Dissertation submitted as fulfillment of the Research and Dissertation Course (GAT 511) will be awarded a **PASS/FAIL grade**.

Table 5: The academic grading system for all courses in the Master of Science (Clinical Anatomy) programme

Grade	Grade Point	Range of Mark
A	4.00	80 - 100
A-	3.67	70 – 79.9
B+	3.33	64 – 69.9
B	3.00	58 – 63.9
B-	2.67	52 - 57.9
C+	2.33	46 – 51.9
C	2.00	40 – 45.9
C-	1.67	36 – 39.9
D+	1.33	32 – 35.9
D	1.00	28 – 31.9
D-	0.67	25 – 27.9
F	0.00	0 – 24.9

REPEATING COURSES

If a student obtains a Grade C or below for any courses in the semester exams, the student must repeat the course either during the regular semester (Semester I or II) or in the Courses Offered During the Inter-Academic Session Break (KSCP), depending on his/her duration of candidature.

A student is also allowed to repeat a course to improve the Cumulative Grade Point Average (CGPA) to 3.00, if the duration of his/her candidature is still active. The CGPA calculations for repeat courses are based on the best grade obtained (contribution to graduation).

A student repeating his/her project/dissertation is required to select a new topic.

PROGRAMME SUSPENSION & WITHDRAWAL

The University Senate has the authority to suspend a candidate from the course and/or from taking the examination with or without penalty, on the advice of the School of Medical Sciences Board.

Withdrawal from a programme of study can be made to IPS.

POSTPONEMENT OF STUDIES

Postponement of studies is only allowed after registration and completion of at least 1 semester, except for medical or valid personal reasons approved by the School of Medical Sciences Board.

EXTENSION OF CANDIDATURE

An application for extension of candidature must be made 2 months prior to the date of expiration of a student's maximum candidature with strong justification and support.

TERMINATION OF CANDIDATURE

The University Senate reserves the right to terminate a student's candidature if the student's study progress is deemed not satisfactory by the School of Medical Sciences Board.

GRADUATION REQUIREMENTS

A postgraduate student of USM must comply with the following requirements for the purpose of graduation:

1. Pass all core courses and also other pre-requisite courses determined by the School of Medical Sciences;
2. Pass the Research and Dissertation course;

- iii. Achieve a final minimum CGPA of 3.0 and above; and

1. Fulfill the minimum and does not exceed the maximum duration of candidature

CAREER PROSPECTS

The programme prepares graduates for:

1) Future careers such as teaching positions in anatomical sciences in undergraduate and postgraduate medical, dental and allied health programmes, research positions e.g., medical scientists, pharmaceutical scientists, biomedical researchers, forensic scientists and as anatomy product consultants in private companies

2) Further study options leading to a PhD in anatomical sciences and various other disciplines for example medical genetics, medical education, forensic science, clinical medicine and biomedicine

DISCLAIMER

Any information that is not mentioned or misleading in this regulation will be decided by the University Senate on the advice of the School Board. USM reserves the right to amend the rules and regulations from time to time.