UNIVERSITI MALAYA

FAKULTI PERUBATAN
Faculty of Medicine

UNDERGRADUATE GUIDEBOOK

SESSION 2024/2025

BACHELOR OF BIOMEDICAL SCIENCE

https://medicine.um.edu.my/bachelor-of-biomedical-science-bbiomedsc-hons

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MESSAGE FROM THE DEAN

Dear Future Healers, Today's Learners,

Congratulations and Welcome to Universiti Malaya! You have now gained admission into the 60th ranked university in the world (based on the Quacquarelli Symonds World University Rankings (QS-WUR) for 2025). This ranking positions UM in the top 4% of the 1,503 institutions evaluated by QS globally and placed UM as the premier number 1 university in Malaysia.

Your admission into an undergraduate degree programme at the Faculty of Medicine, be it for Biomedical Science, Medicine or Nursing, is the result of your years of hard work, commitment and dedication. You have been selected through a rigorous selection process amongst several hundred applicants who have vied to enter into our prestigious Faculty. We are looking forward to being a part of your learners' journey with our distinguished academic staff that are nationally and internationally renowned and our engaging support staff, ready to serve.

Our programmes are meticulously designed to be an outcome and competency-based curriculum. This means that your education here will not just focus on knowledge acquisition but also on developing the essential skills and competencies required to excel as a modern healthcare professional. You will be equipped with the tools to adapt to rapid advancements in healthcare science, technology, and patient care practices. We are committed to preparing you to meet the complex health needs of diverse populations with compassion, innovation, and excellence.

One of the core pillars at FOM is active learning. We believe that the most profound learning occurs when you are engaged, curious, and hands-on. Participate actively in your lectures, labs, and clinical experiences. Ask questions, engage in discussions, and take on challenging cases. Every interaction, simulation, and research opportunity is a chance to deepen your understanding and hone your skills. Your active participation is vital in transforming information into practical, life-saving knowledge.

Equally important is becoming self-directed learners. In the dynamic field of healthcare, the ability to guide your own learning is crucial. Take charge of your educational journey by setting personal goals, seeking out resources, and pursuing areas of interest with curiosity and passion. Embrace the wealth of information available to you, from textbooks to cutting-edge research articles. Your proactive approach will not only enhance your expertise but also cultivate a lifelong habit of continuous learning and professional development.

Effective feedback plays a critical role in your growth as a healthcare professional, as it is an invaluable tool for refining your skills and deepening your understanding. Approach feedback with an open mind and a willingness to learn. Do not hesitate to seek clarification or additional guidance when needed. Remember, feedback is a pathway to improvement and excellence, aimed at helping you become the best healthcare professional you can be.

FOM is deeply committed to maintaining a zero-tolerance policy towards any form of negative culture, including bullying and harassment. Such behaviours are unacceptable and will be addressed with the utmost seriousness. We strive to create a safe, inclusive, and supportive environment where every student can thrive. If you encounter or witness any form of bullying or harassment, please report it immediately. Your well-being and sense of security are crucial to your success and the success of our entire community.

As you embark on this incredible journey, remember that you are part of a vibrant and supportive community. Lean on your peers, mentors, and faculty. Embrace the challenges and opportunities that lie ahead with enthusiasm and resilience.

"Empathise, Empower, Embrace Excellence"—let these 3Es be your guiding mantra as you navigate your learning. Together, we will overcome obstacles and celebrate achievements, shaping the future of healthcare.

I wish you all the best! Sincerely,

PROFESSOR DATO' DR. YANG FARIDAH ABDUL AZIZ
Dean

MESSAGE FROM THE DEPUTY DEAN (UNDERGRADUATE STUDIES)

On behalf of the Faculty of Medicine and all the academic staff, I extend a very warm welcome to each and every one of you. As a faculty, we would like your education in this institution to be a rewarding and an enriching experience.

This handbook has been prepared as a guide in your quest for success while studying in this faculty. Its content is by no means exhaustive but will be very useful for you especially in your first year.

Being a student in this faculty will take a good 4- 5 years of your life depending on the programme you enrolled for. To obtain the degree, you must put in a lot of hard work powered by dedication, sacrifice, unwavering determination, perseverance, and commitment to ensure you will become not only a knowledgeable and skillful health care professional but also one who practices holistically. The education in this faculty does not stop upon graduation, but merely acts as a steppingstone to a lifetime learning in your chosen field.

Medical education does not only revolve around science, but also involves the art of practicing it. We want you to be curious about the programme. Everything that goes on in this institution is a learning opportunity. The skills that you will acquire include good communication skills between you and your colleagues, your patients and their families (when applicable), your teachers and also with members of the community. You will find that your teachers, seniors and friends are mentors in your quest to become good and ethical health care professionals, thus providing you the best apprenticeship you could possibly have. The programme in the faculty is also about character building, and you will need to develop appropriate attitudes that contribute to the qualities necessary of your chosen profession.

We hope this guidebook can be fully utilized to your advantage in better understanding the programme and the people entrusted to run it. The Dean's Office along with all its support groups will try to make your journey a memorable and a fruitful one.

We would like to wish you every success in your programme and pray that the years that you will spend in this faculty will be among the best in your life. Again, I wish you a warm welcome and I look forward to meeting you during the course of your study with us.

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EDUCATIONAL GOALS OF UNIVERSITI MALAYA

Graduates of the Universiti Malaya will be able to:

1. Demonstrate knowledge and skills in their field of study, appropriate research and professional practices, and the processes of critical thinking, creative thinking, and problem solving.

2. Use effective methods including contemporary technology to manage information, to achieve diverse professional goals aligned with professional standards and make decisions based on appropriate data and information.

3. Engage in continuous self-improvement and professional growth, support the professional development of others, and display positive leadership and professional behaviours and disposition for effective practice.

4. Communicate effectively with other professionals, and the community, and project a coherent vision of social responsibilities.

5. Appreciate and continue to be guided by the University's core values of integrity, respect, academic freedom, open-mindedness, accountability, professionalism, meritocracy, teamwork, creativity and social responsibility.

VISION & MISSION OF UNIVERSITI MALAYA

UNIVERSITI MALAYA

VISION

A global university impacting the world

MISSION

Pushing the boundaries of knowledge and nurturing aspiring leaders

CORE VALUES

Serving the Nation. Impacting the World.

QUALITY POLICY

Universiti Malaya is committed to conduct teaching and learning, carry out research and provide quality services on a global level, generate and enhance knowledge through continuous improvement efforts for the benefit of all stakeholders, especially Universiti Malaya's students.

VISION & MISSION OF THE FACULTY OF MEDICINE

UNIVERSITI MALAYA

FAKULTI PERUBATAN
Faculty of Medicine

VISION

To become a Premier Medical Centre that is world renowned and to provide excellent Health Care, Education and Research Programmes delivered with efficiency, sensitivity and enthusiasm.

To be an excellent organization that supports the research needs of the Faculty of Medicine and to achieve world class organization.

MISSION

To be the premier Centre of Excellence in Medical Education.

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Associate Profesor Dr. Fadzilah Hanum binti Mohd Mydin
MBBS (Mal), MMed (Fam.Med)

Medical/Senior Lecturers:

Dr. Julia binti Suhaimi
MBBS (Mal), MMed (Fam.Med)

Dr. Lee Yew Kong
Bachelor of Psychology (UKM) PhD (Mal)

Dr. Teo Chin Hai
Bachelor of Medical Imaging (UM) PhD (Mal)

Dr. Mohazmi bin Mohamed
MBBS (Mal), MMed (Fam Med)

Dr. Ng Wei Leik
MBBS (Mal), MMed (Fam.Med)

Dr. Nurdiana binti Abdullah
MBBS (Mal), MMed (Fam.Med)

Dr. Siti Nurkamilla binti Ramdzan
MBBS (Mal), MMed (Fam.Med) PhD (UK)

PSYCHOLOGICAL MEDICINE

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Professor Dr. Jesjeet Singh Gill a/l Jeswant Singh
MBBS (Mal), MPM (Mal), CMIA (NIOSH)

Professor Dr. Ng Chong Guan
MD (Mal), MBBS (Mal), MPM (Mal), MSc (Utrecht University, the Netherlands), PhD (Utrecht University, the Netherlands)

Associate Professors:

Associate Professor Dr. Amer Siddiq bin Amer Nordin
MBChB (Otago), MPM (Mal), PhD (Otago)

Associate Professor Dr. Koh Ong Hui
MBBS (Manipal, India), MPM (UM,Mal)

Associate Professor Dr. Rusdi bin Abd Rashid
MBBS (Mal) MPM (Mal)

Associate Professor Datin Dr. Sharmilla a/p Kanagasundram
MBBS (Manipal, India), MPM (Mal)

Senior Lecturers:

Dr. Aida Syarinaz binti Ahmad Adlan
MBBS (Mal), MPM (UM), PGDip (McGill)

Dr. Amarpreet Kaur a/p Amar Singh
MBBCh (Wales, UK), MRCPsych (UK), Dip Med Sci in Clinical Psychiatry (UK), Dip in Clinical Hypnosis (D.Hyp)

Dr. Manveen Kaur a/p Harbajan Singh
MBBS (Karnatak University, India), MPM (Mal)

Dr. Zuraida Ahmad Sabki
MD (Mal), MPM (Mal)

Dr. Fatin Liyana Azhar
MD (UPM), MPM (UM,Mal)

Dr Benedict Francis
MBBS (Medicine and Surgery (UM), MPM,(Mal)

Dr. Lim Poh Khuen
MPM (UM), MSc Global Mental Health (King's College London)

Dr. Chow Soon Ken
MD (UKM), MPM (Mal)

Dr. Julian Wong Joon Ip
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REHABILITATION MEDICINE

Head of Department:

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Professors:

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Professor Dr. Mazlina binti Mazlan
MBBS (Mal), MRehabMed (Mal)

Honnorary Professors:

Professor Dato' Dr. Zaliha binti Omar
MBBS (Mal), FRCP (Glasgow), FAFRM(RACP)(Hon), FAMM, DMR(RCP, London), Grad. Cert. Medical Acu. (Monash), CIME(USA), Cert. (RESNA), Cert. CARF MED 101

Associate Professors:

Associate Professor Dr. Anwar bin Suhaimi
MBBS (Mal), MRehabMed (Mal)

Associate Professor Dr. Julia Patrick Engkasan
MBBS (Mal), MRehabMed (Mal) PhD (Mal)

Medical Lecturers:

Dr. Chung Tze Yang
MBBS (Mal), MRehabMed (Mal)

Dr. Norhamizan binti Hamzah
MBChB (UK) MRehabMed (Mal) PhD (Mal)

Dr. Chan Soo Chin
MBBS (IMU), MRehabMed (Mal)

Dr. Sakinah binti Sabirin
MB BCh BAO (Ire) MRehabMed (Mal)

Dr. Nurul Firdausi binti Hasnol Basri
MB BCh BAO (Ire) MRehabMed (Mal)

SOCIAL & PREVENTIVE MEDICINE

Head of Department:

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Professors:

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Professor Dr. Moy Foong Ming
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Professor Dr. Noran Naqiah binti Mohd Hairi
MBBS (Mal), MPH (Mal), MPH (Epid) (Mal), PhD (Sydney) FPH (Royal College of Physicians, UK)

Professor Dr. Sanjay Rampal
MBBS (Banglore), MPH (Harvard) PhD (Johns Hopkins), AMM, CPH (US NBPHE)

Professor Dr. Victor Hoe Chee Wai Abdullah
MBBS (Mangalore), MPH (Mal), MPH (OH) (Mal), Meng (Safety, Health & Env) (Mal), PhD (Monash)

Professor Dr. Wong Li Ping
BSc, (Hons)(UPM), MMedSc (UKM), PhD (Mal)

Professor Dr. Hazreen bin Abdul Majid
BSc (Hons), Dietetics (UKM), MSc (Nutrition&Dietetics), Deakin (Melb), PhD (Lond)

Professor Dr. Nirmala Bhoo Pathy
MBBS (Mal), MPH (Hons)(Mal), MSc Clinical Epid (Hons) (Utrecht Univ), PhD (Utrecht Univ)

Honnorary Professors:

Professor Dr. Tin Tin Su
MBBS(Institute of Medicine 1,Myanmar)(1991),MScCH,HM(University of Heidelberg)(2001), MD(University of Heidelberg)(2006),

Professor Dr. Maznah Dahlui
MD (Mal), MPH (Mal), PhD (Mal), FPH (Royal College of Physicians, UK)

Professor Adjunct:

Prof. Dr. Nasrin Aghamohammadi
B.Sc. (Environmental Health Engineering), M.Sc.(Civil Engineering),PhD (Air Pollution)

Associate Professors:

Associate Professor Dr. Farizah bt Mohd Hairi
MBBS (Mal), MSc (Wales), MPH (Mal), MPH (Health Services Mgt) (Mal), DSc (Public Health) (NL)

Associate Professor Dr. Mas Ayu Said
MBBS (Mal), MPH (Mal), MPH (Epid) (Mal), PhD (Mal)

Associate Professor Dr. Nik Daliana binti Nik Farid
MBBS (Aust), MPH (Mal), DrPH (Mal)

Associate Professor Dr. Rafdzah binti Ahmad Zaki
MBChB (Liverpool), MPH (Mal), DrPH (Mal)

Medical Lecturers:

Dr. 'Abqariyah binti Yahya
BSc (Hons) Stast. (UKM), MSc Stast. (UKM), PhD (MedSc)

Dr. Lim Sin How
BSc. Biochemistry (NUS), MSc. Health Care Administration (Connecticut), PhD (Pennsylvania)

Dr. Maslinor Ismail
MD (UKM), MPH (Mal), MPH (Family Health)(Mal)

Dr. Nur Afiqah Mohd Salleh
Bio in Formatic (UM), Public Health (UK)

Dr. Tharani Loganathan
MD (USM), MPH (Mal), DrPH (Mal)

Dr. Lim Yin Cheng
MBBS (UM), OHD (NIOSH), CMIA (NIOSH), MPH (UM), DrPH (UM)

Dr. Rama Krishna A/L Supramanian
MD (UGM), LFOM (Ireland), MPH (Malaya), DrPH (Malaya)

Dr. Ng Ai Kah
BSc (Hon) in Dietetics (UKM), MSc in Public Health (IMU), PhD (UM)

Dr. Nithiah Thangiah
BSc (Hons)(Financial Maths), MAppStats(UM), (Applied Statistics), Ph.D, (Public Health)

Dr. Bala Murali A/L Sundram
MBBS, (Medicine and Surgery), MPH, (Public Health), DRPH, (Public Health)

SURGERY

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General Surgery:

Professor Dr. April Camilla Roslani
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Professor Dr. Nur Aishah binti Mohd Taib
MBBS (Mal), MRCS (Edin), Graddip GenetCounsell (CSU Australia), MS (Mal), Doctor of Medicine(UM), Fellow Academy of Medicine Malaysia, Founder member Breast Chapter, College of Surgeon Malaysia

Professor Dr. See Mee Hoong
B.Med (UPM), MD (UPM), MS (Mal), Fellowship Breast Oncoplastic (Mahidol University - UM)

Professor Dr. Kim Seon Hahn (Korean)
Graduation, 1983, HakSa Diploma (Doctor of Medicine), Korea University College of Medicine
Post Graduation, 1987, Medicine Korea University Graduate School

Associate Prof. Dr. Koh Peng Soon
(Mal) Expert Training, (Hepatobiliary Surgery), The University of Hong Kong (HKU), Hong Kong, MSurg (UM), (Pembedahan) Universiti Malaya (UM), MRCS (UK), (Pembedahan) Royal College of Surgeons, Edinburgh MBBS (IMU), (Medicine and Surgery) International Medical College (Imc), Kl, Malaysia

Profesor Madya Dr Suniza binti Jamaris
MBBS (Mal), MS (Mal), Fellowship Breast & Oncoplastic Surgery (Mal), AMM

Dr. Ahmad Rafizi Hariz bin Ramli
MD (UKM), MS (UM), FEBVS (EU), AM (Msia)

Dr. Mohammad Rezal bin Abdul Aziz
MB, BCh ,BAO & SI (Ire), MRCS (Ire),Dip lap Surgery(Fr),Master Surgery (UM)

Dr. Nora binti Abdul Aziz
MS BCHBAD (NUIUCD), MS (Mal), MB BCh BAO (National University Ireland, UCD)

Dr. Dr. Joanne Aisha Mosiun
MS, (Surgery), Universiti Malaya (UM), MBBS, (Medicine and Surgery), Universiti Malaya (UM)

Dr. Teoh Li Ying
MBBS (Mal), MSurg (Mal), Fellowship in Breast Surgery (Mal)

Dr. Wong Wei Jin
MD (Dalhousie), MSurg (Mal)

Dr. Khoo Kah Seng
MBBS (Mal), MRCS (Edinburgh)

Cardiothoracic Surgery:

Professor Dr. Sivakumar a/l Krishanasamy
MBBS(Mal) , MRCS (Edin), MS(Mal), FRCS (Edin) CTh, FETCS, AM (Mal) Aortic Fellowship (UK), Thoracic fellowship (UK), Uniportal Vats Fellowship (Shanghai)

Paediatric Surgery:

Professor Dr. Shireen Anne Han Yien
MBBS (UM),MRCS (Edinburgh),MSurg (UM)

Associate Dr. Anand a/l Sanmugam
BMedSc, MD (UPM),MRCS(Ire), MPaedSurg (Mal), Fellowship in Paediatric Surgery (Aus), MedEd(Mal)

Dr. Ganesh a/l P.Vythilingam
(MAHE), MS (Pediatric Surgery) (Mal), MRCS (Ireland), Fellowship European Association of Pediatric Urology (FEAPU) , PhD (Mal)

Dr. Srihari Singaravel
M.B.B.S (Ind), M.PSurg[Master of Pediatric Surgery] (UM)

Dr. Tan Yew Wei
MB ChB (Commendation, Aberdeen), MRCS (Eng), FRCS (Paed Surg), CCT (Paed Surg), Paed Colorectal Fellowship (RCS Eng), PGCert Med Ed (Cambridge)

Dr. Tan Yew Wei
FRCS, (Paediatric Surgery), Royal College of Surgeons, England, MRCS, (Surgery) Royal College of Surgeons, England, MBBS, (Medicine and Surgery), University of Aberdeen

Urology

Professor Dr. Ong Teng Aik
MBBS (Mal), MS (Mal), FRCSI (UK), FEBU (European), FRCSI (Urology)

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Dr. Chai Chu Ann
MSurg (Mal),FRCS (Urol) (Glasgow)

Dr. Novinth Kumar A/L Raja Ram
DocGenSurg, (General Surgery)(UKM), MBBS (MAHE), India

Plastic Surgery:

Professor Dr. Alizan bin Abdul Khalil
MBB (Mal) MS (Mal), PhD (Plastic Surgery)(Aust)

Dr. Kong Chee Kwan
MD (UNIMAS), MS (UM) MPlastSurg (USM), AM (Msia), LCP (Chapter 3)

Dr. Muhammad Ridwan bin Mirza Asfian
MBBS (Mal), MS (Mal)

Neurosurgery:

Professor Dr. Vickneswaran a/l Mathaneswaran
MBBS, PhD, FRCS (Edin), FRCS (Neurosurgery)

Professor Dr. Dharmendra a/l Ganesan
MBBS(Malaya) MS(Malaya) FAMM(Mal),FRCS(Edinburgh) FRCS(Ireland) FRCS(Neuro.Surg)UK, IFAANS(USA) FRCS(England) FACS(USA)

Professor Dato' Dr. Hari Chandran a/l Thambinayagam
MBBS (M'lore), AM(Mal), FRCS(Edin), FRCS(Eng), FRCS(Glasg)(Neuro Surg), FRCS(Edin)(Neuro.Surg), FACS.

Associate Professor Dr. N V V E Vairavan
FRCS, (Neurosurgery), Addenbrookes Hospital, Part of Cambridge, University Hospital Nhs Foundation Trust MSURG, (SURGERY), (UKM)

Associate Prof. Dr. Kamal Azrin Bin Abdullah @ Kalai Arasu A/L Muthusamy
(Mal) D.PHIL (OXON), (Medicine) (Oxford), MSURGERY(UM), (Surgery) (UM), MBBS(UM), (Medicine and Surgery), (UM)

Dr. Ravindran a/l Karuppiah
MBBS (Thanjavur), MRCS (Edin), MS (Mal), MRCS (Ireland)

Dr. Thangaraj a/l Munusamy
MA MB BChir (Cambridge) FRCS SN (England)

Surgical Research Unit

Associate Dr. Retnagowri a/p Rajandram)
BSc in Biomedical and Biochemistry (Hons),PhD in Medicine (Univ. of Qld, Aus)

Dr. Lim Jasmine
BMedSc(Hons)(UPM), DPhil (oxford), instead of PhD (Oxford)

Dr. Tania Islam
MBBS (Chittagong), PhD (Jap)

Dr. Hamizah Binti Hj Sa'at
PhD (UM), (Medicine)(UM), M.Sc (Medical Science) Medical Genetics, (Medical Genetics)(Glasg), B.Sc.Biomedical Science, (Biomedical Science) (IIUM)

CLINICAL ONCOLOGY

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Professor Dr. Ung Ngie Min
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MBBS (Mal), Mco (Mal)

Associate Professor Dr. Adlinda binti Alip
MD(UK), FRCR (UK)

Associate Professor Dr. Marniza binti Saad
MBBCh (UK), MRCP Part I (UK), FRCR (UK)

Associate Professor Dr. Rozita binti Abdul Malik
MBBS (Mal), Mco (Mal)

Medical/Senior Lecturers:

Dr. Nur Fadhlina binti Abdul Satar
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Dr. Lee Dai Wee
MBBS (IMU), Mco (Mal)

Dr. Ng Aik Hao
BSc (Mal), MMedPhys (Mal), PhD (UK)

Dr. Zulaikha binti Jamalludin
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DEVELOPMENT UNIT (MERDU)

Head of Unit:

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Associate Professor Dr. Foong Chan Choong
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Senior Lecturers:

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SPORT MEDICINE

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Dr. Samihah binti Abdul Karim
MD (UPM), MspMed (Mal)

Medical Lecturers:

Dr. Ahmad Hazwan bin Ahmad Shushami
MBBS (Mal), MSpMed (Mal)

Dr. Muhammad Kashani bin Mohd Kamil
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TRAUMA & EMERGENCY

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MBBS (UM), MEmMed (UM)

Dr. Khadijah Poh Yuen Yoong
MBBS (UM), MEmMed (UM)

Dr. Mohd Zahir Amin Mohd Nazri
MBBS (UM), MEmMed (UM)

Dr. Mohd Hafyzuddin bin Md Yusuf
MB Bch BAO (Irelandl), MEmMed (UM)

Dr. Mohammad Aizuddin Azizah Ariffin
MBBS (Otago, New Zealand), MEmMed (UM)

Dr. Siti Nur Aliyah binti Zambri
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Dr. Anhar binti Kamarudin
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Trainee Lecturers:

Dr. Rafi' Uddin Radzi bin Ruslay
MBBS (UM)

Dr. Zul Luqman hakim Bin Musbahudin
MBBS (UM)

Dr. Wendy Ong Yu Ru
MD (USM)

HISTORY OF THE FACULTY OF MEDICINE

Universiti Malaya was established on 8 October 1949 as a national institution to serve the higher educational needs of the Federation of Malaya and of Singapore. In 1960, the Government of the Federation of Malaya indicated that the Kuala Lumpur Division of the Universiti Malaya should become the national University in the Federation with effect from the beginning session 1962/63. Likewise, the Singapore Division should become the national University of Singapore. Steps to achieve the establishment of these two separate universities were finalized during the year 1961 and Universiti Malaya was established on 1st January 1962. The student population at that time was about 330. Since then, the University has grown and developed rapidly. Today, the student population has grown to almost 30,000.

Establishment of the Faculty of Medicine at Universiti Malaya

Up to the 1950's, the Faculty of Medicine, University of Singapore, known previously as King Edward VII College of Medicine, had been the only medical school in Malaya and Singapore. The output of doctors at that time was small: 60 per year. Many Malaysians had to go overseas to seek undergraduate medical education. It was not until 1960 that a determined effort was made to double the intake of students to 120 per year in Singapore. In 1960, a board of scholars at Universiti Malaya was appointed to study the feasibility of establishing a medical school with its own teaching hospital. The board recommended the establishment of both.

To this end, the Ministries of Education and of Health provided the necessary capital funds. In 1962, the first Dean for the Faculty of Medicine was appointed.

FIRST BATCH - 1969

The first batch of medical students was admitted to the Faculty of Medicine in 1964. A year earlier, these students, 40 of them, were placed in the Faculty of Science as pre-medical students. Construction of the faculty building began in July 1963 and was completed in 10 months. The pioneer students thus began their medical journey in May 1964. The Faculty continued to grow, and the second phase was ready for the students as they embarked on to Year II the following May. Planning, building, procurement of equipment, recruitment of staff, organization of the Faculty, and discussions on the curriculum continued unremittingly. Phase I of what was then known as University Hospital, consisting of the main block together with podium or "technical box" (operating theatres, radio-diagnostic, accident and emergency, polyclinic, pharmacy, central sterile supply, cafeteria, administration and medical records) was completed in December 1966, and the first wards were opened in March 1967. Phase II of the Hospital consisting of Paediatric, Maternity and Rehabilitation Units was completed in December 1967, and welcomed patients in March 1968. The total construction period for the faculty and hospital, consisting of the teaching departments, hospital (740 beds), hostel for clinical students, Nurses Quarters with Nursing School, and Central Animal House was three and a half years.

The faculty and hospital, now known as Universiti Malaya Medical Centre have grown significantly. Since 1993, the Faculty of Medicine also began offering undergraduate programmes in Biomedical Science and Nursing.

Philosophy of the Faculty of Medicine

The philosophy of the Faculty is to mould students to be competent, highly-skilled and knowledgeable health professionals, who can work with others as a team, who are caring and concerned about their patients and society, and who can emerge as leaders in their community.

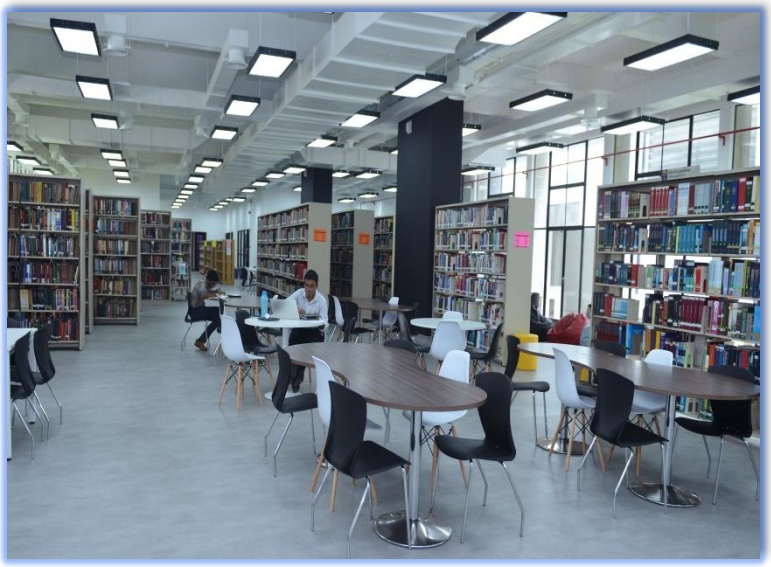
FACULTY FACILITIES

1	TAN SRI DANARAJ MEDICAL LIBRARY
2	MULTIDISCIPLINARY LABORATORIES
3	CLINCAL SKILLS LABORATORY
4	COMPUTER LABORATORIES
5	MEDICAL ILLUSTRATION AND MULTIMEDIA DEVELOPMENT UNIT
6	ANATOMY RESOURCE CENTRE
7	CENTRAL PATHOLOGY MUSEUM

STUDENTS' SUPPORT

1	SOCIETIES FOR STUDENTS
2	FOM'S COUNSELLING SERVICE
3	MENTOR-MENTEE & ACADEMIC ADVISOR

TAN SRI DANARAJ MEDICAL LIBRARY



The Medical Library on the 3rd floor of the faculty contains around 100,000 volumes and subscribes to around 2,000 current journals. An extensive collection of reference works printed indexing and abstracting service are maintained. It permits access to a number of databases both on-line and on compact disk in the various fields of medicine and allied health care. In addition, the library offers cassette-tape, tape-slide, video-viewing and discussion room facilities, inter-library loan, photocopying and document binding services. Branch libraries are at the Klang and Kuala Langat District Complexes. These libraries aim to provide good quality and friendly service in a pleasant environment. Care of all library material is essential to maintaining this standard. Instructions regarding the use of facilities should be obtained from library staff.

The Main UM Library situated in the main campus contains more than 1 million volumes, a microfilm processing unit and photostating facilities.

Library hours:

Mon-Fri: 0800 – 2230 hr

MULTI-DISCIPLINARY LABORATORIES

As the name implies, these labs serve various purposes which include wet and dry laboratory practicals, tutorials, self-directed learning stations, structured paraclinical examinations as well as for tutorial and self-learning.

CLINICAL SKILLS LABORATORIES

The Clinical Skill Laboratory (CSL) of Faculty of Medicine provides facilities for the teaching of clinical skills and procedures. It is equipped with wide range of simulators. These facilities allow students, doctors and other professionals to use these simulators for learning and practicing skills and procedures in a safe, controlled environment.

For detailed information check its webpage: https://medicine.um.edu.my/clinical-skills-laboratory

COMPUTER LAB

The computer lab is situated in the T.J. Danaraj Medical Library and is equipped with Wi-Fi with a 25-seat capacity. PCs are not provided. Users will need to carry a laptop.

ANATOMY RESOURCE CENTRE

The Anatomy Resource Centre (ARC) has been designed to emphasise clinically relevant anatomy and stimulate 'active learning' in students in a pleasant conducive environment. Although designed as a multidisciplinary resource primarily for medical students, dental students and allied health science students, as well as postgraduate health professionals. In addition, the ARC plays a very vital role in educating the public about the importance of anatomy in clinical medicine.

Key features include potted and plastinated cadaveric specimens, a range of diagnostic images and clinical scenarios quizzes. In addition, activity stations have been designed to focus on interactive learning through multimedia computers, educational anatomy software/ medical websites as well as anatomy videos. All regular ARC users are issued with security smart cards to enter and exit the centre. User profile of the ARC is continuously recorded and analysed from computerised door entry records. Student perception of ARC educational value is assessed regularly through feedback questionnaires surveys.

STUDENT SUPPORT

STUDENTS' SOCIETIES

At the Faculty of Medicine, students build connections and networks which can last a lifetime and extend to national and international connections. Build teamwork and leadership skills and immerse yourselves in the myriad of events and activities of the societies below:

- Medical Society (MEDSOC)
- Biomedical Science Society (BiomedSoc)
- Nursing Science Society (NurSoc)

FOM COUNSELLING & PSYCHIATRY SERVICES

FOM's Counsellors:	UMMC Team of Psychiatrists:
Day: Tuesday, Wednesday & Thursday Time: 2.00 pm to 4.00 pm Venue: Seminar Room 2, Block J, Level 3, Tel: Mdm. Sharmila 012-5605559	Day: Monday to Friday Time: 8.00 am till 11.30 am Venue: Psychological Medicine Clinic, Lower Ground Floor, Psychological Medicine Complex, Universiti Malaya Medical Centre. Tel: 03-79492368 / 2334

MENTOR-MENTEE & ACADEMIC ADVISOR

Each student will be assigned a mentor.

The mentor is a lecturer who plays an important role in your life as an undergraduate student. The mentor-mentee relationship is one of collaboration, guidance and support, with the mentor providing advice, encouragement, and assistance to you as you navigate the challenges of university life. The mentor works with you to identify your strengths and weaknesses, and to develop strategies for success. Your mentor may also provide opportunities for you when you embark on research or other academic activities, as you build your skills and confidence.

CAMPUS FACILITIES

1	ACCOMMODATION
2	STUDENT SCHOLARSHIP AND SPONSORSHIP
3	STUDENT HEALTH SERVICES
4	UM MEDICAL CENTRE
5	STUDENT COUNSELING SERVICES
6	PERDANASISWA
7	MOSQUES
8	SHOPS
9	BANKING SERVICES
10	ANNUAL PLANNER & NOTES

ACCOMMODATION

All undergraduate students will be provided with on-campus accommodation managed by the Student Affairs Division (HEP). The Ibnu Sina (Sixth) Residential College consists of three blocks for male students and five blocks for female students, and can accommodateabout 700 students.

Further information regarding student housing both on-campus and off-campus can be referred to:
Accommodation Section
Students Affair Division
Block E, Perdanasiswa Complex
Universiti Malaya
Tel: 03-7967 3506
Email: hep@um.edu.my
URL: https://hep.um.edu.my/accommodation-section and https://hep.um.edu.my/undergraduate

STUDENT SCHOLARSHIP & SPONSORSHIP

The Scholarship & Sponsorship Unit (UBT), Academic Administration & Services Centre (AASC) manages national, state, and statutory bodies, including private companies and philanthropic organization scholarships and loans applications.

UBT can be reached at:
Scholarship & Sponsorship Unit
Academic Administration & Services Centre
Examination Building
Universiti Malaya
Tel: 03-7967 6996 / 6999

Email: scholarship_aasc@um.edu.my
URL: https://aasc.um.edu.my

STUDENT HEALTH CLINIC

The Student Health Clinic provides health services to the campus community, complementing the UM Medical Centre. The clinic is situated at:

Student Health Clinic
Bangunan Siswarama
Faculty of Arts and Social Science
Universiti Malaya
Tel: 03-7967 6445
Email: kkpum@um.edu.my

Operating hours:
Mon-Fri: 8 am till 5 pm
No services on Saturday, Sunday &
Public Holidays

UM MEDICAL CENTRE

The UM Medical Centre is a teaching hospital that also provides a 24-hour emergency medical service to campus community and public. Emergency cases can be directed to the Trauma & Emergency Unit.

University Malaya Medical Centre (UMMC)
Lembah Pantai
59100 Kuala Lumpur
Tel: 03-79494422
Email: ummc@ummc.edu.my
URL: http://ummc.edu.my

STUDENT COUNSELING SERVICE

The Psychology Management & Counseling Unit offers a private and confidential counselling sessions, career guidance services as well as services and assistance to students with disabilities.

Psychology Management & Counseling Unit
Level 1, Block D, Perdanasiswa Complex
Universiti Malaya
Tel: 03-79673244 / 2090

The UM Medical Center also provides an added counseling service for its students. For further information, please refer to current faculty notices on Counseling Service.

PERDANASISWA COMPLEX (KPS)

Perdanasiswa Complex houses the office of the Deputy Vice Chancellor of Students Affairs, the International Student Centre (ISC), the Marketing & Recruitment Centre (MRC), an auditorium, cafeteria, gazebo, student clubs and activity rooms, UM Entrepreneur Club, a barber shop, etc.

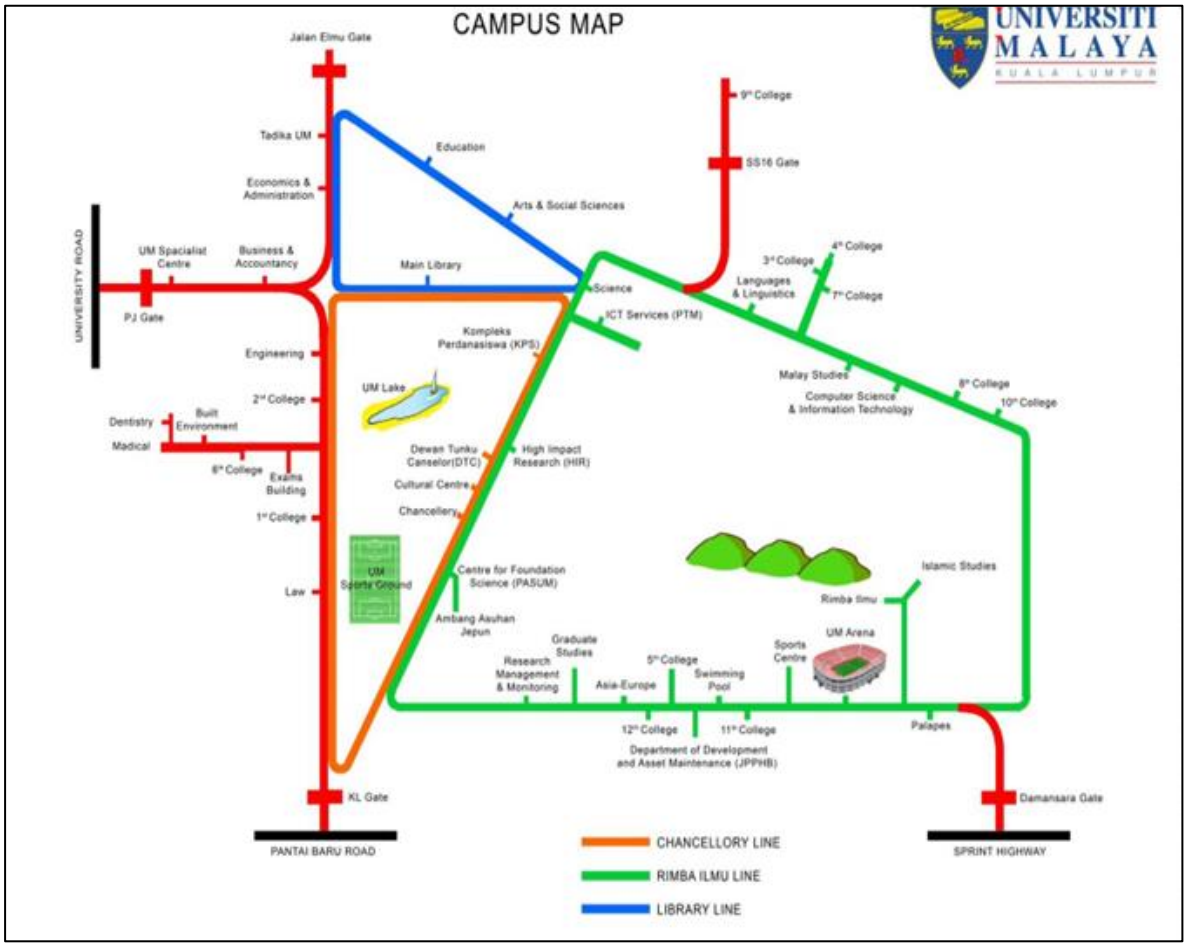
MOSQUES & PRAYER ROOMS

Al-Rahman Mosque is situated beside the KL entrance to UM *Surau Akademi Pengajian Islam* is available at the Islamic Studies Academy. Closer to the faculty and UM Medical Centre, is *Surau Ad-Deeniah*. A *surau* is situated at the Faculty of Medicine's Centrepoint.

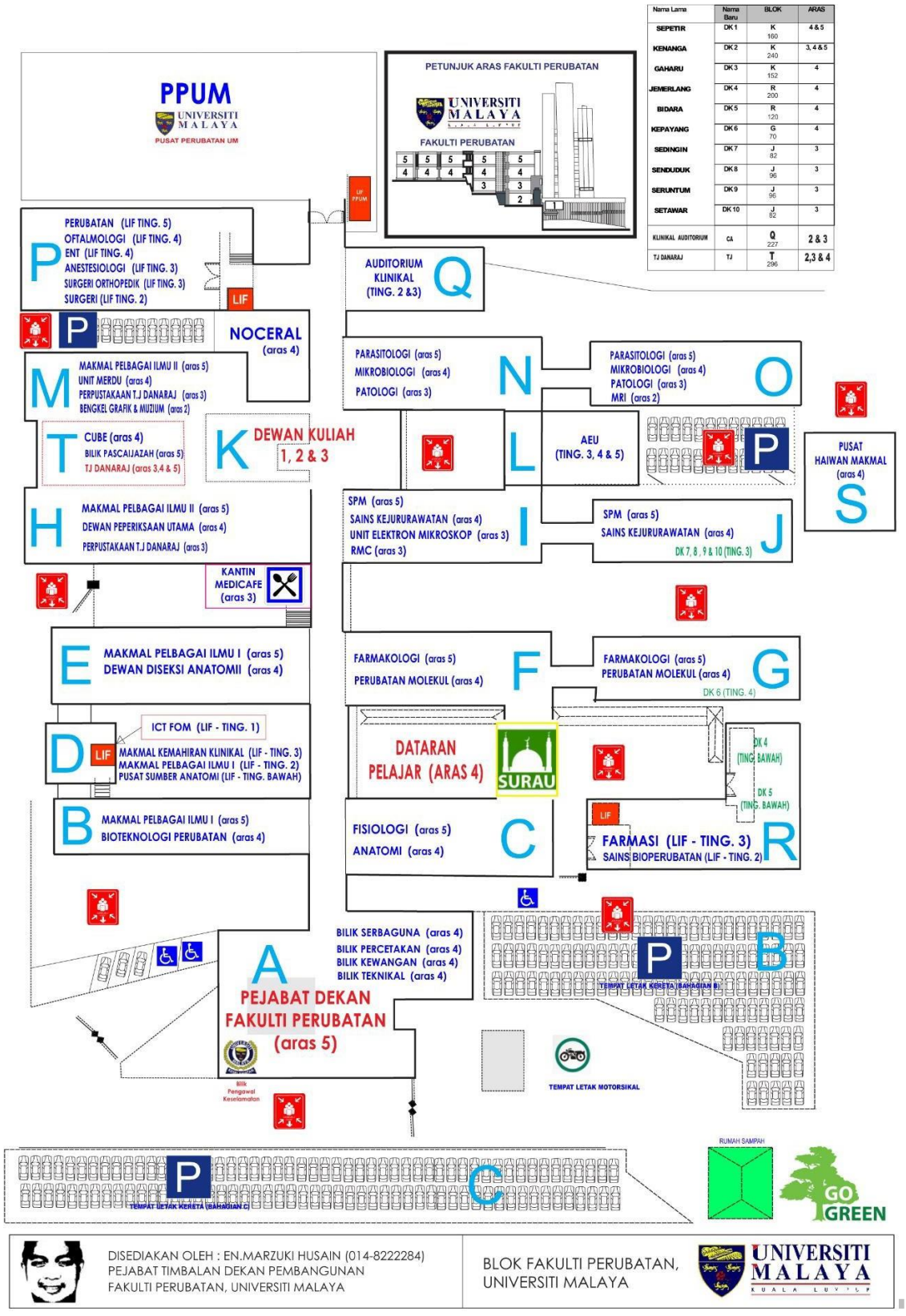
FINANCIAL & BANKING FACILITIES

Bank Islam operates on the Ground Floor, of the High-Impact Research (HIR) Building. In addition, there are ATMs located across the campus and UM Medical Centre.

CAMPUS MAP


CAMPUS MAP
UNIVERSITI MALAYA
KUALA LUMPUR
Jalan Ilmu Gate
Tadika UM
Education
Economics & Administration
Arts & Social Sciences
UNIVERSITY ROAD
UM Spacialist Centre
Business & Accountancy
Main Library
PJ Gate
Science
ICT Services (PTM)
Kompleks Perdanasiswa (KPS)
Engineering
UM Lake
2nd College
Dentistry
Built Environment
Medical
Dewan Tunku Canselor(DTC)
High Impact Research (HIR)
6th College
Exams Building
Cultural Centre
Chancellery
1st College
UM Sports Ground
Centre for Foundation Science (PASUM)
Law
Ambang Asuhan Jepun
KL Gate
PANTAI BARU ROAD
9th College
SS16 Gate
3rd College
4th College
Languages & Linguistics
7th College
Malay Studies
Computer Science & Information Technology
8th College
10th College
Islamic Studies
Rimba Ilmu
UM Arena
Graduate Studies
Research Management & Monitoring
5th College
Asia-Europe
Swimming Pool
Sports Centre
12th College
11th College
Department of Development and Asset Maintenance (JPPHB)
Palapes
Damansara Gate
SPRINT HIGHWAY
CHANCELLORY LINE
RIMBA ILMU LINE
LIBRARY LINE

FACULTY BUILDING PLAN



STUDENT DRESS CODE

ACADEMIC CALENDAR
2024/2025 ACADEMIC SESSION
(BACHELOR DEGREE LEVEL)

SEMESTER I					
Orientation Week			29.09.2024	-	06.10.2024
Lectures	7	weeks*	07.10.2024	-	24.11.2024
Mid Semester I Break	1	week	25.11.2024	-	01.12.2024
Lectures	7	weeks*	02.12.2024	-	19.01.2025
Revision Week	1	week*	20.01.2025	-	26.01.2025
Semester I Final Examination	3	weeks*	27.01.2025	-	16.02.2025
Semester I Break	4	weeks	17.02.2025	-	16.03.2025
	23	weeks			
SEMESTER II					
Lectures	7	weeks*	17.03.2025	-	04.05.2025
Mid Semester II Break	1	week	05.05.2025	-	11.05.2025
Lectures	7	weeks*	12.05.2025	-	29.06.2025
Revision Week	1	week*	30.06.2025	-	06.07.2025
Semester II Final Examination	3	weeks*	07.07.2025	-	27.07.2025
Semester II Break	4	weeks	28.07.2025	-	24.08.2025
	23	weeks			
SPECIAL SEMESTER					
Lectures	7	weeks*	28.07.2025	-	14.09.2025
Special Semester Final Examination	1	week*	15.09.2025	-	21.09.2025
Break	1	week	22.09.2025		28.09.2025
	9	weeks			

Note:

(*) The Academic Calendar has taken into account public and festive holidays and is subject to change:

Deepavali	31 October 2024 (Thursday)
Christmas Day	25 December 2024 (Wednesday)
New Year	01 January 2025 (Wednesday)
Chinese New Year	29 & 30 January 2025 (Wednesday & Thursday)
Federal Territory Day	01 February 2025 ((Saturday)
Thaipusam	11 February 2025 (Tuesday)
Nuzul Al-Quran	17 March 2025 (Monday)
Eidul Fitri	31 March & 01 April 2025 (Monday & Tuesday)
Wesak Day	12 May 2025 (Monday)
His Majesty the King's Birthday	02 June 2025 (Monday)
Eidul Adha	06 June 2025 (Friday)
Awal Muharam	27 June 2025 (Friday)

Senate Approval Date: 24.01.2024

Message from Head of the Department of Biomedical Science

On behalf of the Biomedical Science Programme and all the academic staff, I extend a very warm welcome to each of you. We are excited to embark on this journey with you and trust that your time at our university will be incredibly rewarding.

This handbook serves as your essential companion throughout your studies in this programme, particularly during your first year. It provides valuable information to support your academic pursuits.

The Biomedical Science Programme spans four years, culminating in a degree. During this time, we are committed to providing top-notch training while you dedicate yourself to learning with determination, perseverance, and commitment. Our goal is not only to impart knowledge but to equip you with the skills necessary for a successful career in biomedical science.

At our university, every experience is an opportunity to learn and grow. You will develop strong communication skills and benefit from the mentorship of our lecturers, seniors, and peers. This programme also emphasizes character development, fostering attitudes essential for your future profession.

We wish you every success in your academic journey and hope these years with us will be among the most fulfilling of your life. I eagerly anticipate meeting each of you soon.

Professor Dr. Chua Kek Heng
Head, Department of Biomedical Science

ACADEMIC STAFF

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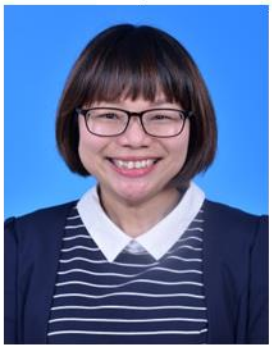

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INTRODUCTION

The Biomedical Science Programme provides knowledge and training in the field of medical science with emphasis on healthcare and research. Students enrol in the Programme for a minimum of 4 years. In the first year, students are introduced to the basics of medical sciences, whereby students will acquire their fundamental understanding of human body structure, functions and mechanisms. By their second year, students will come to appreciate the impact of disease and pathology as they proceed to gain expertise in specific biomedical disciplines such as Histopathology, Haematology, Chemical Pathology and Infectious Diseases. Students will uncover the principles underlying various analytical methods and investigatory procedures used in laboratory medicine and gain confidence and skill from practical sessions that consolidate theoretical instruction. An Industrial Training attachment in the third year will bolster the student's independence and provide exposure to real-world biomedical services. When students return to the faculty for their final year, they are ready to embark on what will be the most important milestone of their undergraduate years: carrying out research projects of their own design in their chosen area of interest.

The Biomedical Science graduate from Universiti Malaya is confident, skilled, ambitious and ready for life's journey. Career opportunities are wide-ranging and include employment in clinical laboratory service departments, teaching institutions and research centres in public as well as private sectors. The Biomedical Scientist can assume responsible positions in either (1) a healthcare team that is concerned with the care of patients and/or with basic and applied clinical research; or (2) a research team in allied medical disciplines, in food and pharmaceutical industries, in public health, and in biotechnology. In addition, post-graduate training is strongly encouraged, either within the country or abroad, all towards attaining the goal of heightening the quality of biomedical science and improving healthcare and welfare for all.

PROGRAMME EDUCATIONAL OBJECTIVES

The Programme aims to produce graduates who are laboratory oriented and technically competent. Graduates should be able to fulfil the human resource requirement for skilled personnel in Biomedical Science, which is an expanding and advancing field globally.

To achieve that aim, the Programme's Educational Objectives (PEO) are:

1. Graduates demonstrate and apply knowledge and skills in health and biomedical science-related fields.
2. Graduates engage in life-long learning pursuits related to health and biomedical science.
3. Graduates contribute to the promotion of health practices for the wellbeing of society.

These objectives will be attained through the Biomedical Student's achievement of the Programme's eight learning outcomes.

PROGRAMME LEARNING OUTCOMES (PLO)

At the end of Bachelor of Biomedical Science Programme, the Biomedical Science graduates are able to:

1. Acquire comprehensive knowledge in biomedical science.
2. Demonstrate critical thinking and problem-solving skills in the application of biomedical science knowledge.
3. Demonstrate competent biomedical laboratory skills in the relevant setting.
4. Communicate effectively in writing and orally with accuracy and confidence to a wide range of audiences.
5. Utilise digital resources and technology to support acquisition of appropriate information.
6. Demonstrate collaborative attributes in ensuring accountability and responsibility to achieve common goals.
7. Demonstrate independent learning and understanding of laboratory management principles.
8. Demonstrate the ability to identify ethical issues and conform to ethical principles within the profession and society.

ACADEMIC PROGRAMME & COURSE STRUCTURE

The Biomedical Science Programme spans a period of eight semesters in four years. Each semester normally consists of:

1. Lectures – 14 weeks
2. Vacation (During Mid Semester) – 1 week
3. Examination – 3 weeks (inclusive of one study week)

Courses offered are categorized under:

1. University Courses
2. Core Courses
3. Elective Courses, and Student Holistic Empowerment courses

The courses will be conducted via lectures, tutorials, discussion and practical sessions as well as self-directed and problem-based learning activities and sessions in the Biomedical Science Department and the University Malaya Medical Centre.

Note:

- Unless stated otherwise, the primary language of instruction is English.
- In the event of insufficient enrolment (fewer than 5 students), the faculty reserves the right to not offer the course.
- All information is correct up to time of publication.

SELF-DIRECTED LEARNING

'In its broadest meaning, self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulation learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes'

(Knowles, M. (1975). Self-Directed Learning. Chicago: Follet. p.18)

At the Faculty of Medicine, Universiti Malaya, we want students to drive their own learning. While this may appear easy to do on paper, learning to learn independently can be a challenge. Some of you may have the inherent characteristics of a self-directed learner. For others, you will have to train yourself to be a self-directed learner. While the faculty and lecturers are ready to guide you in your teaching and learning via an outcome-based curriculum, self-directed learning goes a step further by expecting students to display [Figure 1]:

Ownership of Learning:

- Articulate learning gaps
- Set learning goals
- Identify learning tasks to achieve the goals
- Extension of own learning
- Learn beyond the curriculum
- Empowerment through self-learning
- Management and monitoring of own learning
- Explore alternative methods of learning
- Make sound decisions
- Formulate questions and generate own inquiries
- Plan and manage workload and time effectively and efficiently
- Reflect on your learning
- Use feedback to inform and improve yourself
- Develop skills of self-directed learner
- Acquire positive habits
- Develop healthy coping strategies
- Ensure self-care

(Source: The ICT Connection @ https://ictconnection.edumail.sg)

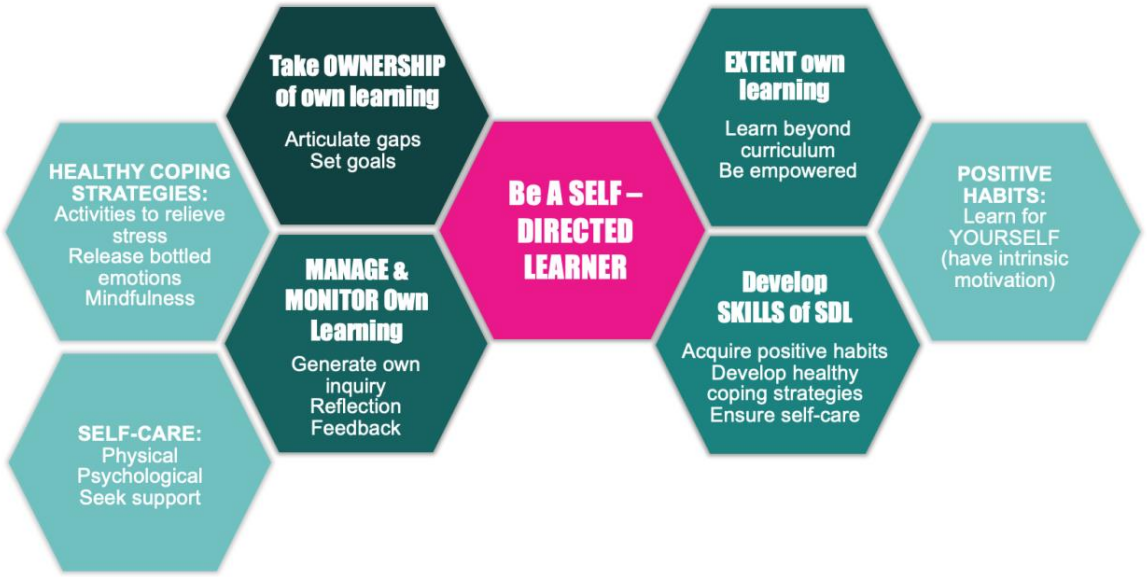

Figure 1: Training guide to become a Self-Directed Learner

Some POSITIVE HABITS of self-directed learners:
Inquisitive • Question the Significance • Learn for yourself (have intrinsic motivation) • Build a Network of Learning Colleagues • Use library resources • Value progress over performance • Highly reflective • Value collaboration and teamwork • Responsible • Able to prioritise

Some HEALTHY COPING STRATEGIES of self-directed learners:
Activities to relieve stress (Have a healthy hobby, keep sense of humour, exercise) • Release bottled emotions • Mindfulness (relaxing or calming techniques) • Adjust expectations (anticipate various outcomes)

ENSURING SELF-CARE of self-directed learners:
Physical health • Psychological health • Seek support

PROGRAMME STRUCTURE

1. Malaysian Students:

Course Level		Course Name	Credits
University Courses	GIG1012	Philosophy and Current Issues *Falsafah dan Isu Semasa*	2
	GIG1013	Appreciation of Ethics and Civilizations *Penghayatan Etika dan Peradaban*	2
	GIG1003	Basics of Entrepreneurship Culture *Asas Pembudayaan Keusahawanan*	2
	GQX0056	Integrity and Anti-Corruption *Integriti dan Anti-Rasuah*	2
	GLTXXXX	English Communication[#] *Bahasa Inggeris Komunikasi[#]*	4
	GKXXXXX	Co-Curriculum Courses *Kursus Ko-Kurikulum*	2
Core Courses	Basic Module Including Basic Sciences *Modul Asas Termasuk Sains Asas*		22
	Professional Module *Modul Professional*		76
	Industrial Training *Latihan Industri*		9
Elective Courses	Elective Courses[*] *Kursus Elektif[*]*		9
	University Elective Courses [ɣ] - Student Holistic Empowerment (SHE) *Kursus Elektif Universiti [ɣ]* *- Pemerkasaan Holistik Pelajar (SHE)*		6
		Total Credits	**136**

[#] For GLT Courses: selection depends on the student's MUET/IELTS/TOFEL result.

[*] For Biomedical Science Elective Courses: select at least 3 of the 8 elective courses offered.

[ɣ] For University Elective Courses: select at least 3 of the SHE courses offered.

PROGRAMME STRUCTURE

2.

International Students:

Course Level		Course Name	Credits
University Courses	GIG1013	Appreciation of Ethics and Civilizations *Penghayatan Etika dan Peradaban*	2
	GIG1003	Basics of Entrepreneurship Culture *Asas Pembudayaan Keusahawanan*	2
	GQX0056	Integrity and Anti-Corruption *Integriti dan Anti-Rasuah*	2
	GLTXXXX	English Communication# *Bahasa Inggeris Komunikasi#*	4
	GLT1049	Malay Language Communication *Bahasa Melayu Komunikasi*	2
	GKXXXXX	Co-Curriculum Course *Kursus Ko-Kurikulum*	2
Core Courses	Basic Module including Basic Sciences *Modul Asas termasuk Sains Asas*		22
	Professional Module *Modul Professional*		76
	Industrial Training *Latihan Industri*		9
Elective Courses	Elective Courses* *Kursus Elektif**		9
	University Elective Course ¥ - Student Holistic Empowerment (SHE) *Kursus Elektif Universiti ¥* *- Pemerkasaan Holistik Pelajar (SHE)*		6
		Total Credits	**136**

For GLT Courses: selection depends on the student's MUET/IELTS/TOFEL result.

* For Biomedical Science Elective Courses: select at least 3 of the 8 courses offered.

¥ For University Elective Courses: select at least 3 of the SHE courses offered.

ENGLISH COMMUNICATION PROGRAMME (UNIVERSITY COURSE) FACULTY OF LANGUAGES AND LINGUISTICS LIST OF COURSES TO BE COMPLETED BY ALL STUDENTS			
PATH 1	**PATH 2**	**PATH 3**	**PATH 4**
• MUET BAND 2 • **IELTS Band 4.0** • **TOEFL Paper – Based Test (437 – 473)** • **TOEFL Computer – Based Test (123 – 150)** • **TOEFL Internet – Based Test (41 – 52)** • **PTE (Academic) – (10 – 28)**	• MUET BAND 3 • **IELTS Band 4.5 – 5.0** • **TOEFL Paper – Based Test (477 – 510)** • **TOEFL Computer – Based Test (153 – 180)** • **TOEFL Internet – Based Test (53 – 64)** • **PTE (Academic) – (29 - 41)**	• MUET BAND 4 • **IELTS Band 5.5 – 6.0** • **TOEFL Paper – Based Test (513 – 547)** • **TOEFL Computer – Based Test (183 – 210)** • **TOEFL Internet – Based Test (65-78)** • **PTE (Academic) – (42 – 57)** • **FCE (B & C)** • **GCE A Level (English) (Minimum C)** • **IGCSE/GCSE (English) (A, B & C)**	• MUET BAND 5 & BAND 6 • **IELTS Band 6.5 – 9.0** • **TOEFL Paper – Based Test (550 – 677)** • **TOEFL Computer – Based Test (213 – 300)** • **TOEFL Internet – Based Test (79 – 120)** • **PTE (Academic) (58 – 90)** • **FCE (A)** • **GCE A Level (English) (B & A)**
Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH
COMPULSORY • GLT1018 – Proficiency in English I	**COMPULSORY** • GLT1021 – Proficiency in English II	**COMPULSORY** • GLT1024 – Proficiency in English III	• GLT1027– Advanced Oral Communication* • GLT1028 – Advanced Business Writing* *(Students can only register for one course per semester)
** **CHOOSE ONE** : • GLT1019 – Let's Speak • GLT1020 – Fundamental Writing	** **CHOOSE ONE** : • GLT1022 – Speak Up • GLT1023 – Effective Workplace Writing	** **CHOOSE ONE** : • GLT1025 – Effective Oral Communication • GLT1026 – Writing at the Workplace	

** *These courses have prerequisites and students can only register for them after obtaining a PASS in the compulsory course as stipulated in the respective paths*

DESCRIPTION OF UNIVERSITY ENGLISH LANGUAGE COURSES

NO.	CODE & TITLE (NO. OF CREDITS)	SYNOPSIS	LEVEL OF REQUIRED PROFICIENCY
1.	GLT1018 - Proficiency in English I • 2 Credits • Offered in Semesters 1 & 2	This course is designed for students with basic proficiency in English. Focus is on building speaking and reading competence with an emphasis on accuracy in grammar and on vocabulary building. Students will develop structural accuracy, reasonable oral fluency and language appropriateness by practising the language in a variety of contexts.	CEFR A2+ • MUET BAND 2 • IELTS Band 4.0 • TOEFL Paper – Based Test (437 – 473) • TOEFL Computer – Based Test (123 – 150) • TOEFL Internet – Based Test (41 – 52) • PTE (Academic) – (10 – 28)
2.	GLT 1019 - Let's Speak • 2 Credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1018 (Proficiency in English I) with grade C	This course focuses on preparing a speech in English accurately and coherently. It also develops students' speech planning skills in stages. Students will learn to speak accurately using the appropriate language strategies to a selected audience.	CEFR B1 Pass GLT1018 with grade C
3.	GLT 1020 - Fundamental Writing • 2 Credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1018 (Proficiency in English I) with grade C	This course is designed for students with a pre-intermediate level of proficiency in English. It focuses on writing skills, with an emphasis on accuracy in grammar and vocabulary building. Students will be exposed to writing strategies that will enable them to write short texts effectively for different purposes.	CEFR B1 Pass GLT1018 with grade C

NO.	CODE & TITLE (NO. OF CREDITS)	SYNOPSIS	LEVEL OF REQUIRED PROFICIENCY
4.	GLT 1021- Proficiency in English II • 2 Credits • Offered in Semesters 1 & 2	This course is designed to improve students' English Language proficiency in terms of accuracy and language use at the intermediate level. Students will be exposed to a variety of reading texts in order to improve their reading skills. They will also be given ample speaking practice to develop their confidence in communicating and interacting with others in a multitude of situations. The course improves students' skills in writing texts coherently on various topics.	CEFR B1 • MUET BAND 3 • IELTS Band 4.5 – 5.0 • TOEFL Paper – Based Test (477 – 510) • TOEFL Computer – Based Test (153 – 180) • TOEFL Internet – Based Test (53 – 64) • PTE (Academic) – (29 - 41)
5.	GLT1022 – Speak Up • 2 Credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1021 (Proficiency in English II) with grade C	This course focuses on speaking English accurately and coherently at the intermediate level. It develops students' communication strategies that enable them to interact appropriately in a variety of informal situations.	CEFR B1+/ Low B2 • Pass GLT1021 with grade C
6.	GLT1023 - Effective Workplace Writing • 2 Credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1021 (Proficiency in English II) with grade C	This course introduces writing strategies at the intermediate level. Students will be exposed to a range of workplace communication. They will learn how to produce effective written communication and improve their overall skills in writing.	CEFR B1+/ Low B2 • Pass GLT1021 with grade C

NO.	CODE & TITLE (NO. OF CREDITS)	SYNOPSIS	LEVEL OF REQUIRED PROFICIENCY
7.	GLT1024 - Proficiency in English III • 2 credits • Offered in Semesters 1 & 2	This course is designed to fortify students' English Language proficiency in terms of accuracy and effectiveness at a developing upper intermediate level. Students will be taught the four language skills with a focus on reading, writing and speaking. They will be exposed to a variety of texts to develop a higher level of proficiency that will allow them to apply the skills learnt.	CEFR B2 • MUET BAND 4 • IELTS Band 5.5 – 6.0 • TOEFL Paper – Based Test (513 – 547) • TOEFL Computer – Based Test (183 – 210) • TOEFL Internet – Based Test (65-78) • PTE (Academic) – (42 – 57) • FCE (B & C) • GCE A Level (English) (Minimum C) • IGCSE/GCSE (English) (A, B & C)
8.	GLT1025 - Effective Oral Communication • 2 credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1024 (Proficiency in English III) with grade C	The course encompasses different aspects of oral communication used in delivering speeches and presentations at the high intermediate level. Appropriate examples from a variety of situations are used as practice materials for students to analyse, discuss and apply the strategies taught.	CEFR B2+/ Low C1 • Pass GLT1024 with grade C
9.	GLT1026 - Writing at the Workplace • 2 Credits • Offered in Semesters 1 & 2 • Prerequisite: Students must pass GLT1024 (Proficiency in English III) with grade C	This course will introduce students to effective writing skills at the workplace. Using relevant materials, students will be taught in stages how to produce documents within a workplace context.	CEFR B2+/ Low C1 • Pass GLT1024 with grade C

NO.	CODE & TITLE (NO. OF CREDITS)	SYNOPSIS	LEVEL OF REQUIRED PROFICIENCY
10.	GLT1027 Advanced Oral Communication • 2 Credits • Offered in Semesters 1 & 2	The course encompasses different aspects of oral communication used in delivering speeches and presentations at the high intermediate level. Appropriate examples from a variety of situations are used as practice materials for students to analyse, discuss and apply the strategies taught.	CEFR C1 • MUET BAND 5 & BAND 6 • IELTS Band 6.5 – 9.0 • TOEFL Paper – Based Test (550 – 677) • TOEFL Computer – Based Test (213 – 300) • TOEFL Internet – Based Test (79 – 120) • PTE (Academic) (58 – 90) • FCE (A) • GCE A Level (English) (B & A)
11.	GLT1028 Advanced Business Writing • 2 Credits • Offered in Semesters 1& 2	This course is designed to equip students with the necessary writing skills to meet the needs of the workplace. Students will also be taught how to produce clear, accurate and well organised professional business documents. Students will be required to analyse and respond to a variety of situations and to write for identified audiences. The course also explores the ways in which technology helps shape business writing and communication	

BACHELOR OF BIOMEDICAL SCIENCE

LIST OF COURSES

Year 1 (2024/2025)

Semester I

Category	Course Code	Course Name	Credits
University Courses	GIG1012 / GLT1049	Philosophy and Current Issues (M) / Malay Language Communication (I)	2
	GQX0056	Integrity and Anti-Corruption	2
17Core Courses	MIC1007	Biochemistry	4
	MIC1008	Genetics and Developmental Biology	3
	MIC1009	Human Body Systems I	3
	MIC1010	Biomedical Science Techniques	3
	MIC1011	Biosafety and Biosecurity	3
		Total Credits	20

*(M): Malaysian (I): International students

Year 1 (2024/2025)

Semester II

Category	Course Code	Course Name	Credits
University Courses	GIG1003	Basics of Entrepreneurship Culture	2
	GIG1013	Appreciation of Ethics and Civilizations	2
	GLTXXXX	English Communication *	2
Core Courses	MIC1012	Medical Microbiology	3
	MIC1013	Human Body Systems II	3
	MIC1014	Immunology	3
	MIC1015	Histological Techniques for Biomedical Science	3
	MIC1016	Parasitology and Entomology	3
		Total Credits	21

*Please refer to pages 92-96 for further details

Year 2 (2025/2026)

Semester I

Category	Course Code	Course Name	Credits
University Courses	GLTXXXX	English Communication *	2
	GKXXXXX	Co-Curriculum Course	2
Core Courses	MIC2001	Genomics and Gene Expression	3
	MIC2027	Human Pathology	4
	MIC2004	Principles in Pharmacology and Toxicology	3
	MIC2017	Haematology	3
	MIC2018	Phlebotomy	3
University Elective Courses[Y]	GXXXXXX	Student Holistic Empowerment (SHE) course	2
		Total Credits	22

*Please refer to pages 92-96 for further details

[Y] For University Elective Courses: select 1 of the SHE courses offered by the university. Complete list of courses offered are available on the CITRA website (https://citra.um.edu.my/general-elective-courses-student-holistic-empowerment-she).

Year 2 (2025/2026)

Semester II

Category	Course Code	Course Name	Credits
Core Courses	MIC2019	Molecular Biology Techniques	3
	MIC2020	Epidemiology and Clinical Research	3
	MIC2021	Biomedical Ethics	3
	MIC2022	Cancer Biology	3
	MIC2023	Blood Transfusion Technology	3
Elective Courses*	MIC2013	Laboratory Animal Science	3
	MIC2024	Principles of Biomedical Imaging	3
	MIC2025	Bioinformatics for Biomedical Science	3
	MIC2026	Diagnostic Parasitology and Entomology	3
		Total Credits	21

* For Elective Courses: select at least 2 of the 4 courses offered in this semester.

Year 3 (2026/2027)

Semester I

Category	Course Code	Course Name	Credits
Core Courses	MIC3008	Chemical Pathology	4
	MIC3013	Research Skills for Biomedical Science	3
	MIC3014	Advanced Medical Microbiology	3
	MIC3015	Laboratory Management	3
	MIC3016	Anatomic Pathology	3
Elective Courses*	MIC3017	Neuroscience	3
	MIC3018	Recombinant DNA Technology	3
	MIC3019	Applied Pharmacology and Therapeutics	3
	MIC3020	Advanced Parasitology and Entomology	3
		Total Credits	19

* For Elective Courses: select at least 1 of the 4 courses offered in this semester.

Year 3 (2026/2027)

Semester II

Category	Course Code	Course Name	Credits
Core Course	MIC3021	Industrial Training	9
		Total Credits	9

Year 4 (2027/2028)

Semester I

Category	Course Code	Course Name	Credits
Core Courses	MIC4001	Research Design in Biomedical Science	6
	MIC4012	Critical Discourse Analysis and Case Studies	4
University Elective Courses[y]	GXXXXXX	Student Holistic Empowerment (SHE) course	2
	GXXXXXX	Student Holistic Empowerment (SHE) course	2
		Total Credits	14

[y] For University Elective Courses: select at least 2 of the SHE courses offered by the university. Complete list of courses offered is available on the CITRA website (https://citra.um.edu.my/general-elective-courses-student-holistic-empowerment-she).

Year 4 (2027/2028)

Semester II

Category	Course Code	Course Name	Credits
Core Courses	MIC4005	Research in Biomedical Science	6
	MIC4013	Advances in Biomedical Science	4
University Elective Courses	GXXXXXX	Student Holistic Empowerment (SHE) course	2
		Total Credits	12

[y] For University Elective Courses: select at least 1 of the SHE courses offered by the university. Complete list of courses offered is available on the CITRA website (https://citra.um.edu.my/general-elective-courses-student-holistic-empowerment-she).

MIC1007: Biochemistry (Core: 4 credits)

Learning Outcomes

1. Identify characteristics and reactions of biomolecules
2. Describe the roles of the main tissues and organs in homeostasis as well as metabolic regulation and integration.
3. Perform laboratory experiments to identify biomolecules.

Course Synopsis

This course introduces and illustrates the structure, function and importance of various macromolecules such as nucleic acid, carbohydrate, lipid and protein as well as their derivatives. This course will also introduce basic bioenergetics and illustrate the metabolism of various molecules such as carbohydrate, lipid, protein and nucleic acid. This will be followed by discussions on energy yielding processes, integration of metabolism as well as regulation of hormones and second messengers. Basic concepts on acid, base and buffer, simple calculations and several analytical techniques will also be introduced.

Reference Texts

1. Stryer, L., Berg J.M., Tymoczko, J.L., Gatto, G.J. (2019). Biochemistry. (9th edition). W.H. Freeman & Co Ltd.
2. Rodwell, V.W., Bender, D.A., Botham, K.A., Kennely, P.J., Well, PA. (2018). Harper's illustrated Biochemistry. (31st edition). McGraw-Hill Medical.
3. Nelson, D.L., Cox, M.M. (2016). Lehninger Principles of Biochemistry. (7th edition). Macmillan learning.
4. Skoog, D.A., West, D.M., Holler, F.J., Crouch, S.R. (2013). Fundamentals of Analytical Chemistry. (9th Edition). Brooks/Cole, Thomson Learning Inc.
5. Online resources

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC1008: Genetics and Developmental Biology (Core: 3 credits)

Learning Outcomes

1. State the principles of genetics and evolution in heredity and development.
2. Relate aspects of genetics and developmental biology in life.

Course Synopsis

This course is designed to extend student knowledge and understanding on the principles of genetics and the mechanisms of genetic diversity, including aspects of heredity, developmental biology, as well as theories on the origins of life, evolution and speciation.

Reference Texts

1. Snustad, D. P. and Simmons, M. J. (2015). Principles of Genetics (7th edition). Wiley.
2. Turnpenny, P.D., Ellard, S., Cleaver, R. (2021). Emery's Elements of Medical Genetics and Genomics (16th edition). Elsevier.
3. Greer, R. (2018). Principles of Evolutionary Genetics. Syrawood Publishing House.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC1009: Human Body Systems I (Core: 3 credits)

Learning Outcomes

1. Describe the organization, structures and functions of different types of cells, skeletal, muscular, nervous, cardiovascular and respiratory systems.
2. Describe the regulatory mechanisms of the skeletal, muscular, nervous, cardiovascular and respiratory systems.
3. Relate knowledge in the human body structure and functions.

Course Synopsis

This course is an introduction to the cells, tissues and organisation of the human organs from an integrative perspective. Students learn the structures and functions of the cells, tissues, skeletal, nervous, cardiovascular and respiratory systems, and muscle function from the level of the cell to the level of the organism. Students will also learn the mechanisms for maintaining homeostasis within the human body.

Reference Texts

1. Tortora, G. J. & Derrickson, B. H. Principles of Anatomy and Physiology, *Latest Edition. New Jersey: John Wiley & Sons, Inc
2. Tate, P. Seeley's Principles of Anatomy & Physiology. *Latest Edition. New York: McGraw-HillEducation.
3. Marieb, E. N. Human Anatomy & Physiology. *Latest Edition. California: Pearson/ Benjamin Cummings.
4. Ismail, R., Subramanian, R., Lam, S.K., & Husain, R. Learning Physiology through Practicals. *Latest Edition. Universiti Malaya Press.
5. Netter, F.H. Atlas of Human Anatomy. *Latest edition. London: Elsevier Health Sciences.
6. Dee Unglaub Silverthorn et. al. Human Physiology: an integrated approach. *Latest edition. Pearson Education Inc.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC1010: Biomedical Science Techniques (Core: 3 credits)

Learning Outcomes

1. Describe the principles of biomedical science techniques.
2. Perform biomedical science techniques.
3. Explain biomedical science techniques.

Course Synopsis

This course covers a wide range of current important techniques in biomedical science. Students will learn the principles that underlie the techniques used in both service and research laboratories.

Reference Text

Ahmed N, Glencross H, and Wang Q. (2016). Biomedical Science Practice. (2nd Edition). Oxford University Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC1011: Biosafety and Biosecurity (Core: 3 credits)

Learning Outcomes

1. Identify biohazards and biorisks in laboratories handling infectious agents.
2. Describe biosafety and biosecurity controls in laboratories handling infectious agents.
3. Explain the biosafety and biosecurity controls to manage biorisks in laboratories handling infectious agents.

Course Synopsis

The course introduces the students to biohazards and biorisks in laboratories handling infectious agents. The course provides an overview of the biosafety and biosecurity controls available to manage biorisks in laboratories handling infectious agents.

Reference Text

1. World Health Organization (2020). Laboratory Biosafety Manual (th edition).
2. National Institutes of Health (2010). Biosafety in Microbiological and Biomedical Laboratories (6th edition)
3. e-learning Resources (uploaded onto SPeCTRUM)

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC1012: Medical Microbiology (Core: 3 credits)

Learning Outcomes
1. Describe microorganisms, their role in causing diseases, and laboratory tests.
2. Identify pathogenic microorganisms using specific laboratory techniques.

Course Synopsis
This course introduces the applications of microbiology in the laboratory diagnosis of pathogenic micro-organisms: bacteria, fungi and viruses. Emphasis is given on the important key features of micro-organisms, growth characteristics, virulent factors and laboratory identification

Reference Texts
1. Carroll, K.C., Morse, S.A, Mietzner, T.A & Miller S. (2019). Jawetz, Melnick, & Adelberg's Medical Microbiology. (28th Edition). McGraw-Hill Medical.
2. Gerard, J. Tortora, Berdell, R. Funke, & Christine, L. Case. (2023) Microbiology: An Introduction. (14th Edition). Pearson Education.
3. Chess, B. (2021). Talaro's Foundations in Microbiology. (12th Edition). McGraw Hill Higher Education

Course Coordinator
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Course Assessment
Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC1013: Human Body Systems II (Core: 3 credits)

Learning Outcomes

1. Describe the structure and functions of endocrine, gastrointestinal, renal, reproductive, sensory and motor systems.
2. Explain the regulatory mechanisms of the endocrine, gastrointestinal, renal, reproductive, sensory and motor systems.
3. Relate knowledge in the human body structure and functions

Course Synopsis

Students will learn about the structure and function of the endocrine, gastrointestinal, renal, reproductive, sensory and motor systems. Students will also learn the mechanisms for maintaining homeostasis within the human body.

Reference Texts

1. Tortora, G. J. & Derrickson B. H. Principles of Anatomy and Physiology, *Latest edition. New Jersey: John Wiley & Sons, Inc
2. Tate, P. Seeley's Principles of Anatomy & Physiology, *Latest edition. New York: McGraw-Hill Education.
3. Marieb, E.N. Human Anatomy & Physiology, *Latest edition. California: Pearson/Benjamin Cummings.
4. Ismail, R., Subramanian, R., Lam, S.K., & Husain, R. Learning Physiology through Practicals. *Latest edition. Universiti Malaya Press.
5. Netter, F.H. Atlas of Human Anatomy. *Latest edition. 6th Edition. London: Elsevier Health Sciences.
6. Dee Unglaub Silverthorn et. al. Human Physiology: an integrated approach. *Latest edition. Pearson Education Inc.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC1014: Immunology (Core: 3 credits)

Learning Outcomes

1. Describe basic principle of immunology
2. Differentiate the various types of cells, organs and immune responses.

Course Synopsis

The course provides an introduction to the human immune system and the basic principles in immunology. Topics covered include the structure and functions of the immune system, the innate and acquired immune responses, cells and organs of the immune system.

Reference Texts

1. Paul, W. E. (2013). Fundamental Immunology (7th Edition). Wolters Kluwer/Lippincott Williams & Wilkins.
2. Abbas, A. K., Lichtman, A.H & Pillai, S. (2019). Basic Immunology: Functions and Disorders of the Immune System (6th Edition). Saunders Elsevier.
3. Delves, P.J., Martin, S.J., Burton, D.R, & Roitt I.M. (2017). Roitt's Essential Immunology. (13th Edition). Wiley Blackwell.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC1015: Histological Techniques for Biomedical Science (Core: 3 credits)

Learning Outcomes

1. Describe the theory and practice behind various specialized histological practices.
2. Perform practical training in histological techniques.
3. Demonstrate the ability to work within a team to prepare microscope slides.

Course Synopsis

This course introduces the basic principles underlying the processes involved in the preparation of histological sections and staining of tissue sections to demonstrate the normal histology of epithelial and connective tissues. Students are given elementary practical instructions on the processing of tissue specimens and preparation of stained histological sections.

Reference Texts

1. Layton, C., Bancroft, J. D., Suvarna, S. K. (2019). Bancroft's Theory and Practice of Histological Techniques. United Kingdom: Elsevier.
2. Orchard, G. and Nation, B. (2018) Histopathology. Oxford: Oxford University Press.
3. Pawlina, W., Ross, M. H. (2020). Histology: A Text and Atlas: with Correlated Cell and Molecular Biology. United Kingdom: Wolters Kluwer Health.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC1016: Parasitology and Entomology (Core: 3 credits)

Learning Outcomes

1. Identify the basic concept of parasitology and pathogenesis of parasitic diseases.
2. Classify the main groups of human endoparasites and ectoparasites, as well as arthropods and their significance as vectors.
3. Describe the morphology, life cycle, transmission methods and the control of selected parasites.

Course Synopsis

This course introduces the terminology and classification of protozoology, helminthology, arthropods, and poisonous and venomous animals.

Reference Texts

1. Paniker CKJ, Ghosh S. Textbook of Medical Parasitology (8th Edition). Jaypee Brothers Medical Pub; 2018.
2. Garcia LS. Diagnostic Medical Parasitology (6th Edition). ASM Press, Washington DC; 2016. Mehlhorn H. Human Parasites: Diagnosis, Treatment, Prevention. 1st edition.Springer; 2016.
3. Mahmud R, Lim YA, Amir A. Medical Parasitology: A Textbook. Springer; 2018.
4. Service M. Medical Entomology for Students (5th Edition). Cambridge University Press; 2012.5th Printing 2015
5. Mullen G, Durden L. Medical and Veterinary Entomology (3rd Edition). Academic Press; 2019.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2001: Genomics and Gene Expression (Core: 3 credits)

Learning Outcomes

1. Describe the organization and features of the human genome
2. Explain the mechanisms of gene expression regulation
3. Analyse genomics services from various aspects including economics
4. Identify ethical issues regarding application of genomic technology

Course Synopsis

Students will learn about the structure of the human genome in detail, including the organization of genes and non-coding regions. Types of variation and their effect on cellular function will be discussed. Control of gene expression will be covered to give the students an understanding of how the cell maintains its function and responds to changes. They will also appraise the genomic services available locally and internationally. Current ethical issues regarding the use of genomics technology will also be discussed.

Reference Texts

1. Alberts, B. (2015). Molecular Biology of the Cell. (6th Edition). Garland Science.
2. Watson, J. D., et al. (2013). Molecular Biology of the Gene. (7th Edition). Pearson Education.
3. Lewin, B. (2017). Genes: XII. (12th Edition) Oxford University Press.
4. Strachan, T. & Read, A. P. (2011). Human Molecular Genetics. (4th edition) Garland Publishing.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous assessment (60%) and a Final Exam (40%)

MIC2027: Human Pathology (Core: 4 credits)

Learning Outcomes

1. Describe basic concepts and theories in the field of pathology.
2. Demonstrate skills in detecting pathological changes/ morphology with a microscope.
3. Use digital resources and technology effectively to acquire or deliver correct pathological information.

Course Synopsis

This course introduces the basic principles and systemic pathological processes such as cellular responses to injury, inflammation, healing and repair, disorders of body fluids, homeostasis and blood flow, disorders of growth, neoplasia, disorders of the immune system, organ system pathology, relevant structural changes associated with respective pathological conditions.

Reference Text

1. Kumar, V., Abbas, A. K., Aster, J. C., & Perkins, J. A. (2018). Robbins basic pathology. Elsevier.
2. Kumar, V. et al. (2021) Robbins & COTRAN pathologic basis of disease. Philadelphia, PA: Elsevier.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2004: Principles in Pharmacology and Toxicology (Core: 3 credits)

Learning Outcomes

1. Describe the concepts of pharmacokinetics and pharmacodynamics, principles of toxicology, and principles of anticancer and antimicrobial agents.
2. Interpret the effects of drugs on the autonomic nervous system; their mechanisms of action; adverse effects and therapeutic uses.
3. Interpret concepts and research techniques in pharmacokinetics, pharmacodynamics and toxicology.

Course Synopsis

This course focuses on the general principles of pharmacokinetics & pharmacodynamics, pharmacological basis for the use of drugs (parasympathomimetic, sympathomimetic and neuromuscular systems), factors affecting drug response, general principles of toxicology, various clinical manifestations to different toxic compounds, general mechanisms of toxicity, the toxic actions of metals and non-metals, evaluation of toxicity and principles of anticancer and antimicrobial agents.

Reference Texts

1. Ritter, Flower, Henderson, Loke, MacEwan, Robinson & Fullerton. (2023). Rang & Dale's Pharmacology (10th edition). Elsevier.
2. Todd W. Vanderah (2024), Katzung's Basic & Clinical Pharmacology (16th edition). McGraw Hill Education.
3. Bruton, L. & Knollmann, B. (2023) Goodman & Gilman The Pharmacological Basic of Therapeutics. (14th edition). Mc-Graw-Hill Education.
4. Klaassen, C. D. (2018). Casarelte & Doull's Toxicology: The Basic Science of Poisons (9th Edition). McGraw Hill Professional.
5. Whalen, K. (2022). Lippincott Illustrated Reviews: Pharmacology (8th edition). Wolters Klumer.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (50%) and Final Exam (50%)

MIC2017: Haematology (Core: 3 credits)

Learning Outcomes

1. Describe the formation and functions of blood cells as well abnormalities and pathologies that could arise.
2. Identify differences between physiologically normal and pathological blood cells.
3. Recognize different types of laboratory tests involved in haematology and transfusion medicine.

Course Synopsis

This course introduces students to the science of blood, in terms of types and appearances of blood cells, the formation of blood cells, abnormalities that may arise, and the differences between normal physiological blood morphology and functions and pathological situations.

Reference Texts

1. Hoffbrand, V., & Moss, P. (2019). Hoffrand's Essential Haematology (8th Edition). Wiley-Blackwell.
2. Bain, B., Bates, I., Laffan, M. A. (2016). Dacie and Lewis Practical Haematology (12th Edition). Elsevier.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2018: Phlebotomy (Core: 3 credits)

Learning Outcomes

1. Identify the correct sites, equipment, procedures and techniques for collection and handling of blood or other body fluid specimens.
2. Perform appropriate methods for collection and handling of blood or other body fluid specimens.
3. Apply appropriate and ethical methods to troubleshoot problems during clinical specimen collection and handling.

Course Synopsis

The student will be introduced to basic theories and practice of phlebotomy. The student will learn anatomy and physiology which is appropriate to draw blood specimens, and the requirements and procedures involved with specimen collection including other bodily fluids. The student will also appreciate the need for professionalism and communication when interacting with patients and donors.

Reference Texts

1. McCall, R. E. & Tankersley C. M. (2020). Phlebotomy Essentials, Enhanced Edition (7th Edition). Jones & Bartlett Learning.
2. Strasinger, S. K. & Di Lorenzo M. S. (2020). Urinalysis and Body Fluids (7th edition). F.A. Davis Company.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2019: Molecular Biology Techniques (Core: 3 credits)

Learning Outcomes

1. Discuss the basic concepts of molecular biology and molecular techniques.
2. Identify suitable tools to perform molecular experiments.
3. Demonstrate team spirit in carrying out the task given.

Course Synopsis

This course addresses developments that have led to the 'New Genetics'. Focus will be placed on terminology, tools and techniques that are essential in the study and creation of recombinant molecules with emphasis on biomedical applications. Components linked to occupational safety and health will also be covered. Practical and basic techniques ranging from plasmid preparations to PCR will be covered.

Reference Texts

1. TA Brown (2020). Gene Cloning and DNA Analysis: An Introduction. (8th Edition) John Wiley and Sons Ltd.
2. Green and Sambrook (2014). Molecular Cloning: A Laboratory Manual. (4th Edition) Cold Spring Harbor Laboratory Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2020: Epidemiology and Clinical Research (Core: 3 credits)

Learning Outcomes

1. Define basic concepts of epidemiology and clinical research.
2. Apply the concepts of epidemiology and clinical research in biomedical science.
3. Determine suitable information related to epidemiology and clinical research for dissemination to the community.

Course Synopsis

This course will cover introduction to fundamental concepts of epidemiology and clinical investigation. Students will also learn various study designs for epidemiology and the applications of each design. The topics include introduction to epidemiology, measurements in epidemiology, study design in epidemiology, chronic non-communicable disease, communicable disease, surveillance, clinical epidemiology, environmental and occupational epidemiology, health policy in epidemiology, and clinical investigation such as clinical trial.

Reference Texts

1. Celentano, D. D., Szklo, M., & Farag, Y. (2023). Gordis Epidemiology E-Book: Gordis Epidemiology E-Book. Elsevier Health Sciences.
2. Friis, R. H., & Sellers, T. (2020). Epidemiology for public health practice (6th edition). Jones & Bartlett Learning.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2021: Biomedical Ethics (Core: 3 credits)

Learning Outcomes

1. Describe core ethical principles from a biomedical science perspective.
2. Explain ethical issues relating to biomedical science.

Course Synopsis

Students will learn about ethical principles related to many aspects of biomedical science and research. They will have the opportunity to give their opinions about the subject matters.

Reference Texts

1. National Science Council (2017). The Malaysian Code of Responsible Conduct in Research. Malaysian Industry-Government Group for High Technology.
2. Wiles, R. (2013). What are qualitative research ethics? London: Bloomsbury Academic.
3. Oliver, P. (2010). The student's guide to research ethics. McGrawHill Open University Press
4. Morrison, E.E., & Furlong, B. (2019). Healthcare Ethics, Critical Issues for the 21st Century. (4th edition). Jones & Bartlett, LLC.
5. Bryant, J.A. & la velle, L. (2019). Introduction to Bioethics. (2nd edition). Wiley Backwell
6. Committee on Publication Ethics (https://publicationethics.org/)
7. Online resources

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2022: Cancer Biology (Core: 3 credits)

Learning Outcomes

1. Apply biological and molecular aspects of cancer in the topics discussed.
2. Report practical results involving techniques used in cancer study.
3. Use digital resources and technology effectively to acquire information required for presentation /assignment.

Course Synopsis

The course provides an in-depth understanding of the molecular basis of cancer initiation and progression, the different types and classification of various cancers and also the roles played by tumour suppressors and oncogenes. Various genetic and cellular changes leading to tumourigenesis will be discussed as well as the techniques commonly used in cancer research.

Reference Texts

1. Hesketh, R. (2023). Introduction to Cancer Biology (2nd Edition). Cambridge: Cambridge University Press.
2. Weinberg RA (2023). The Biology of Cancer (3rd Edition). W. W. Norton & Company.
3. Pecorino L (2021). Molecular Biology of Cancer: Mechanisms, Targets, and Therapeutics (5th Edition). Oxford University Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2023: Blood Transfusion Technology (Core: 3 credits)

Learning Outcomes

1. Illustrate the basic principles of immunohaematology and blood transfusion.
2. Justify the importance of safe pre-transfusion techniques to ensure the reliability of blood products and blood transfusions.
3. Demonstrate the basic techniques applicable in blood transfusion technology.

Course Synopsis

This course provides students with the fundamental concepts and principles pertaining to blood transfusion technology. The practical component of this course focuses on routine techniques used in blood transfusion laboratories.

Reference Texts

1. Shaz, B.H., Hillyer, C. D., Roshal, M. & Abrams, C. S. (2018). Transfusion Medicine and Hemostasis: Clinical and Laboratory Aspects (3rd Edition). Elsevier.
2. Howard, P. R. (2020). Basic & Applied Concepts of Blood Banking and Transfusion Practices (5th Edition). Elsevier Mosby.
3. Harmening, D. M. (2019). Modern Blood Banking & Transfusion Practices (7th Edition). F.A. Davis Company.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC2013: Laboratory Animal Science (Elective: 3 credits)

Learning Outcomes

1. Describe the basics in animal biology and the methods for the care and use of laboratory animals.
2. Demonstrate basic and ethical knowledge in the care and handling of commonly used laboratory animals.

Course Synopsis

This course is designed to provide facts and instil principles essential to the humane use and care of animals that will in turn ensure the quality of biomedical research. Students will be taught basic animal biology and husbandry, as well as animal handling techniques during experimental procedures. The students' responsibilities towards the welfare of the animals used and the ethical concerns of biomedical research will be emphasised.

Reference Texts

1. Hau, J. & Schapiro, S. J. (2010). Handbook of Laboratory Animal Science, Volume I Essential Principles and Practices (3rd Edition). CRC Press.
2. NRC (2011). Guide for the Care and Use of Laboratory Animals (8th Edition). The National Academies Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2024: Principles of Biomedical Imaging (Elective: 3 credits)

Learning Outcomes

1. Describe the principles of imaging equipment utilized for biomedical science research.
2. Differentiate imaging equipment for different biological levels: organs, tissues, cells, and molecules.

Course Synopsis

This course covers a wide range of current important techniques in biomedical science. Students will learn the principles that underlie the techniques used in both service and research laboratories.

Reference Texts

1. Murphy, D.B. & Davidson M., (2012). Fundamentals of light microscopy and electronic imaging. (2nd Edition). John Wiley & Sons.
2. Mikla, V.I. and Mikla, V.V., (2013). Medical imaging technology. Elsevier.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC2025: Bioinformatics for Biomedical Science (Elective: 3 credits)

Learning Outcomes

1. Demonsrate suitable bioinformatics tools to generate meaningful types of data.
2. Apply basic principles of bioinformatics that are relevant to biomedical science.

Course Synopsis

This course will expose students to the basic application of the internet to biomedical sciences; organisation and uses of scientific databases; use of computational methods in genomics and transcriptomics; basic homology modelling; analysis and presentation of biomedical data; and communication of biomedical data using information technology.

Reference Texts

1. Pevsner, J. (2015). Bioinformatics and functional genomics. (3rd Edition). John Wiley & Sons.
2. Ramsden, J. (2021). Bioinformatics: An Introduction. Springer Science & Business Media.
3. Liang, K.H. Bioinformatics for biomedical science and clinical applications (2013). Woodhead Publishing.
4. Baxevanis A.D, Bader G.D (Editor), Wishart D.S. (Editor). (2020). Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins (4th Edition). John Wiley & Sons.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2026: Diagnostic Parasitology and Entomology (Elective: 3 credits)

Learning Outcomes

1. Describe the basic method of diagnosis of parasites in clinical specimens.
2. Identify the parasites and insects under microscope using the respective key identifying characteristics.
3. Explain the basic concept of diagnostic parasitology and entomology.

Course Synopsis

The course covers various basic aspects of diagnostic techniques of protozoa and helminths. Faecal examination includes direct smear, concentration techniques, egg count, faecal culture and staining methods. Blood examination includes staining and serological diagnosis. This course also covers basic aspects for diagnostic entomology including identification of mosquitoes and insects of medical importance, entomological field and laboratory techniques.

Reference Texts

1. Paniker, C.K.J, & Ghosh, S. (2013). Textbook of Medical Parasitology (7th Edition). Jaypee Brothers Medical Pub.
2. Garcia, L.S. Diagnostic Medical Parasitology. (6th Edition). ASM Press, Washington D.C. 2016.
3. Mehlhorn, H. (2016). Human Parasites: Diagnosis, Treatment, Prevention. (1st edition). Springer.
4. Mahmud, R., Lim, Y.A., & Amir, A. (2018). Medical Parasitology: A Textbook. Springer.
5. Service, M. (2016). Medical Entomology for Students. (5th Edition). Cambridge University Press.
6. Marquardt, W. (2004). Biology of Disease Vectors. (2nd Edition). Academic Press.
7. Mullen, G, Durden, L. (2018). Medical and Veterinary Entomology (3rd Edition). Academic Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3008: Chemical Pathology (Core: 4 credits)

Learning Outcomes

1. Determine the biochemical and molecular bases of main metabolic disorders.
2. Appraise analytical parameters associated with normal metabolism and diagnostic use in disease.
3. Study the main analytical techniques in a chemical pathology context.

Course Synopsis

This course introduces the basic principles of chemical pathology. Emphasis is given to automation and computerisation, selection of laboratory methods and equipment, and method validation, all of which are central in the daily operation of a chemical pathology laboratory.

The course also explores in-depth the biochemical and molecular aspects of major metabolic diseases including nutrition, acid-base balance disorders, diseases of the thyroid, pituitary, adrenal, ovarian, testicular and kidney hormones, the use of cancer, bone and heart markers, and abnormalities in metabolism of proteins, lipids and carbohydrates. Emphasis is given on the appropriate laboratory assessment for the clinical diagnosis of these diseases.

Reference Texts

1. Rifai, N., Horvath, A.R. & Wittwer, C.T. (2018). Tietz Textbook of Clinical Chemistry and Molecular Diagnostics (8th Edition). Elsevier.
2. Ahmed, N. (2017). Clinical Biochemistry (2nd Edition). Oxford University Press.
3. Al-Balushi, B. & Essa, M. (2019). A Quick Guide for Clinical Biochemistry. Nova Science Pub. Inc.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (70%) and a Final Exam (30%)

MIC3013: Research Skills for Biomedical Science (Core: 3 credits)

Learning Outcomes

1. Write a comprehensive manuscript with appropriate referencing.
2. Use basic biostatistics techniques to generate results.
3. Present their research based on a suggested format.

Course Synopsis

The student will be introduced to the world of biomedical science research and the various tools available to analyse and present the data obtained in a systematic and professional manner. The student will learn the use of reference, document, and presentation software in biomedical science research.

Reference Texts

1. Holmes, D., Peter, Moody P. & Dine D. (2016). Research Methods for the Biosciences. (3rd edition). Oxford Press.
2. Kumar, R. (2019). Research Methodology: a step-by-step guide for beginners. (5th edition). SAGE Publications.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC3014: Advanced Medical Microbiology (Core: 3 credits)

Learning Outcomes

1. Explain important pathogens and laboratory tests for diagnosis of infectious diseases.
2. Relate diseases, causative microorganisms, pathogenesis and body response to microbial infections in the operation and management of a diagnostic laboratory.
3. Analyze the laboratory results for the investigation of microbial infection.

Course synopsis

This course emphasises important pathogen that cause human diseases. Emphasis is given on the important key features of pathogens, pathogenesis, laboratory identification, treatment and prevention measures.

Reference Texts

1. Ryan, K. J. & Ray, C. G. (2003). Sherris Medical Microbiology. An Introduction to Infectious Diseases. (4th Edition). McGraw Hill Professional.
2. Knipe, D. M. & Howley, P. M. (2013). Fields Virology. (6th Edition). Lippincott Williams & Wilkins.
3. Carroll, K. C., Butel, J., & Morse, S. (2019). Jawetz, Melnick, & Adelberg's Medical Microbiology. (28th edition). New York : Lange Medical Books/McGraw-Hill.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3015: Laboratory Management (Core: 3 credits)

Learning Outcomes

1. Identify principles of management in biomedical laboratories
2. Determine the quality management required in biomedical laboratories.
3. Study quality assurance procedures performed in a biomedical laboratory.

Course Synopsis

This course describes the stages of quality control, quality assurance, quality system and quality management. Examples of total quality framework include quality planning, quality laboratory processes, quality control, quality assurance and quality improvement.

Reference Texts:

1. Garcia, LS. (2014). Clinical Laboratory Management. ASM Press.
2. Turgeon, M.L. (2018). Linne & Ringsrud's Clinical Laboratory Science (8th Edition). Elsevier.
3. Parson, K.N. (2012). Laboratory Quality/Management (3rd Edition). Xlibris Corporation.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3016: Anatomic Pathology (Core: 3 credits)

Learning Outcomes

1. Apply principles of techniques employed in anatomic pathology and cytopathology.
2. Perform consistent staining of slides for diagnosis.

Course Synopsis

Students will be taught the scientific basis of standard staining techniques and the common artifacts and problems encountered due to inappropriate handling and staining of pathology and cytology specimens.

Practical sessions provide hands-on experience as well as allow the study of the effects of improper tissues staining

Reference Texts

1. Suvarna KS, Layton C. (2018). Bancroft's Theory and Practice of Histological Techniques & Their Diagnostic Application (8th Edition). Churchill Livingstone.
2. Behdad Shambayati. (2018). Cytopathology (2nd Edition). Oxford University Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3017: Neuroscience (Elective: 3 credits)

Learning Outcomes

1. Explain the function of cells, networks and areas within nervous system
2. Relate the knowledge about neuronal mechanisms to brain function and neurological diseases
3. Present information about neuroscience accurately, effectively and creatively to a wide range of audience

Course Synopsis

This course offers the students the chance to learn about neuroscience from many different aspects including systems that control thoughts, behaviour, senses and movement. They will relate this knowledge to the mechanisms that occur in the cells and neuronal networks. Students will showcase their knowledge of neuroscience to members of the public through an exhibition or online activities.

Reference Texts

1. Kandel, E., & et. al. (2013). Principles of Neural Science (5th Edition). McGraw Hill Professional.
2. Nicholls, J. G. & et. al. (2012). From Neuron to Brain: Cellular and Molecular Approach to the Function of the Nervous System (5th Edition). Sinauer Associates.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3018: Recombinant DNA Technology (Elective: 3 credits)

Learning Outcomes

1. Perform experiments and procedures of recombinant DNA technology.
2. Apply molecular concepts of recombinant DNA technology.

Course Synopsis

This course allows students to gain skills in recombinant DNA techniques for various applications in biomedical science. It includes the techniques of isolating target genes, preparation of competent cells, gene cloning, transformation, SDS-PAGE, protein expression, western blotting, protein quantitation and chip-based analysis. Students will also learn the strategy and consideration for standard gene cloning and cloning expression experiments.

Reference Texts

1. Brown, T. A. (2015) Gene cloning and DNA analysis (7th edition). Blackwell Publishing.
2. Leland J.C., Ara K., Peter B. K., Margaret V.W. (2016) Handbook of Molecular and Cellular Methods in Biology and Medicine (3rd edition). Taylor & Francis.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC3019: Applied Pharmacology and Therapeutics (Elective: 3 credits)

Learning Outcomes

1. Interpret the mechanisms of action, pharmacokinetics, therapeutic uses and adverse effects of drugs.
2. Explain concepts and techniques in pharmacology research.
3. Describe concepts and techniques in pharmacology and toxicology from scholarly articles.

Course Synopsis

The course focuses on time course of drug effects, techniques in HPLC, LCMS, bioequivalence studies and pharmacogenomics, design & evaluation of clinical trials, the pharmacology of drugs acting on the gastrointestinal, respiratory, cardiovascular and central nervous systems and experiments on drugs with analgesic properties, drugs affecting respiratory system and general evaluation of toxicity of drugs /substances in animals.

Reference Texts

1. Ritter, Flower, Henderson, Loke, MacEwan, Robinson & Fullerton. (2023). Rang & Dale's Pharmacology (10th edition). Elsevier.
2. Todd W. Vanderah (2024), Katzung's Basic & Clinical Pharmacology (16th edition). McGraw Hill Education.
3. Bruton, L. & Knollmann, B. (2023) Goodman & Gilman The Pharmacological Basic of Therapeutics. (14th edition). Mc-Graw-Hill Education.
4. Klaassen, C. D. (2018). Casarelte & Doull's Toxicology: The Basic Science of Poisons (9th Edition). McGraw Hill Professional.
5. Whalen, K. (2022). Lippincott Illustrated Reviews: Pharmacology (8th edition). Wolters Klumer.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (50%) and a Final Exam (50%)

MIC3020: Advanced Parasitology and Entomology (Elective: 3 credits)

Learning Outcomes

1. Apply basic principles in parasitology and entomology with regards to problems in parasitic infections and vector-borne infections.
2. Explain the information of translational research in parasitology and entomology including the latest research and diagnostic techniques.
3. Interpret experimental data of parasitic infections.

Course Synopsis

The course covers aspects of maintenance of protozoa and helminths in vivo and in vitro, molecular biology of parasitic infections, advanced techniques in parasitology and entomology, issue and challenges in parasitology and entomology, and interpretation of experimental data of parasitic infections.

Reference Texts

1. Paniker, CJ. (2013). Textbook of Medical Parasitology (7th Edition). Jaypee Brothers Medical Publishers (P) Ltd.
2. Kennedy, MW, Harnett, W. (2013). Parasitic Nematodes: Molecular Biology, Biochemistry and Immunology (2nd edition). CABI.
3. Walochnik, J, & Duchene, M. (2016). Molecular Parasitology: Protozoan Parasites and their Molecules. Springer.
4. Rollinson D, Stothard R. (2018). Advances in Parasitology. Elsevier Science Publishing Co Inc.
5. Service M. (2016). Medical Entomology for Students (5th Edition). Cambridge University Press.
6. Marquardt, W. (2004). Biology of Disease Vectors (2nd Edition). Academic Press.
7. Mullen, G, & Durden, L. (2018). Medical and Veterinary Entomology (3rd Edition). Academic Press.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (60%) and a Final Exam (40%)

MIC3021: Industrial Training (Core: 9 credits)

Learning Outcomes

1. Perform duties in the assigned biomedical science laboratory
2. Follow the biomedical science laboratory work rules effectively
3. Apply the safety and governmental regulations and standards in biomedical science laboratory practice.

Course Synopsis

The student will be assigned to a biomedical science laboratory for eighteen weeks. He/she will observe the workflow and duties in the laboratory and carry out laboratory tests as determined by the laboratory supervisor.

Reference Texts

As recommended by the laboratory at time of posting.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%).

MIC4001: Research Design in Biomedical Science (Core: 6 credits)

Learning Outcomes

1. Perform laboratory training and experiments following the stipulated research design.
2. Propose a design for a research project based on relevant literature review on areas in biomedical sciences
3. Relate ethical principles to conducting research work

Course Synopsis

Present their research proposal as part of their final year research project.

Reference Texts

1. O'Leary, Z. (2017). The Essential Guide to Doing Your Research Project. (3rd edition). SAGE Publications Ltd.
2. Robson, C. (2016). How to do a research project: A guide for undergraduate students. (2nd edition). Wiley-Blackwell.

Course Coordinator

Dr. Kamariah Ibrahim
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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC4012: Critical Discourse Analysis and Case Studies (Core: 4 credits)

Learning Outcomes

1. Explain the facts efficiently and confidently.
2. Appraise critically and use knowledge, facts and data to effectively and ethically solve problems.
3. Demonstrate the ability to work within a team to achieve a common goal.

Course Synopsis

Critical Discourse Analysis and Case Studies course is designed to help the students link their knowledge obtained from various disciplines and apply them to real-world scenarios. The students will obtain higher levels of cognition. Case studies will be discussed in groups under the guidance of a facilitator.

Reference Texts

As recommended by the facilitator during case studies.

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC4005: Research in Biomedical Science (Core: 6 credits)

Learning Outcomes

1. Apply research methods in a scientific project.
2. Analyse results obtained from the research project to derive appropriate conclusions about the findings.
3. Relate ethical principles to conducting research work

Course Synopsis

Students are given the opportunity to conduct research independently in a project of their choice. The course trains the student to perform research and interpret the results of their own lab work.

Reference Texts

1. O'Leary, Z. (2017). The Essential Guide to Doing Your Research Project. (3rd edition). SAGE Publications Ltd.
2. Robson, C. (2016). How to do a research project: A guide for undergraduate students. 2nd edition. Wiley-Blackwell.

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%) – oral presentation, supervisor evaluation and logbook report

MIC4013: Advances in Biomedical Science (Core: 4 credits)

Learning Outcomes

1. Determine the latest areas of research in Biomedical Science
2. Apply the scientific basis behind the topics discussed.
3. Deliver scientific information on the selected topics in writing or orally.
4. Determine the ethical issues behind the topics discussed.

Course Synopsis

This course aims to introduce students to the current issues in biomedical science, new technologies and areas of research, while focusing on areas of potential research in the future. It also allows the students to meet and share with a range of scientists and professionals who are involved in a wide range of biomedical science.

Reference Text

Scientific publications, newspaper articles, scientific magazines, online resources

Course Coordinator

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Course Assessment

Course will be assessed by Continuous Assessment (100%)

Information in this Guidebook is correct at time of printing. Information is subject to change without notice.

Students should refer to the Programme Coordinator or Course Coordinators for updated information.

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