UNIVERSITI MALAYA
Faculty of Medicine

UNDERGRADUATE GUIDEBOOK

SESSION
2022/
2023

BACHELOR OF BIOMEDICAL SCIENCE

FACULTY OF **MEDICINE**
https://medicine.um.edu.my/**undergraduate**

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Welcome to the Faculty of Medicine, Universiti Malaya.

Congratulations! Your acceptance into one of our undergraduate programmes at the Faculty of Medicine, Universiti Malaya is a culmination of many years of hard work. You have been selected amongst several hundred applicants who have vied to enter into our prestigious Faculty. The Universiti Malaya, Faculty of Medicine is recognised as a national leader in medicine and the health sciences with many distinguished academic staff that are nationally and internationally renowned.

The Faculty in recent years has strived to make all of our programs exciting and relevant to prepare you for the challenges of a career in the medical sciences in this new era of rapid changes in health, technology and information. You will find that your university education will be vastly different from what you have experienced at school. Unlike in school, you will be expected to undertake more self-directed and independent learning with support from dedicated and experienced Faculty members. All of this is to prepare you to enter into the workforce where attributes such as critical and analytical thinking, independence and creativity are sought after.

The courses that you will undertake in the next 4-5 years will prepare you for a career to enter into the healthcare profession whether as a doctor, nurse or biomedical scientist providing direct patient care or providing essential behind the scenes support. The lectures, tutorials and the practicals that you will be attending in the course of the next few years is however but a foundation and a steppingstone to what we hope will prepare you for a life-long learning experience. In the words of perhaps one of the most accomplished and greatest physicians in recent times, Sir William Osler,

"The hardest conviction to get into the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, for which the work of a few years under teachers is but a preparation."

We hope that you will take the opportunity to engage productively not just with your academic lecturers and mentors but also with your fellow students some of whom have come from different parts of the world. We also sincerely hope that your campus life will not be restricted to the pursuit of an academic qualification alone, but that you will use this opportunity to enrich your minds in other worthy pursuit whether it is community service, sports or music and culture.

I wish you all well in your pursuit of an academic degree in the medical sciences and hope that you will emerge from your time at the Faculty of Medicine Universiti Malaya as a life-long learner with a passion and commitment for your chosen vocation.

PROFESSOR DR. APRIL CAMILLA ROSLANI
Dean

Message from Deputy Dean

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 THE UNIVERSITY OF MALAYA

Graduates of the University of 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 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 FACULTY OF MEDICINE

UNIVERSITI MALAYA
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 Quality Policy.

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

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

Dr Benedict Francis MBBS (Mal), MPM (Mal)

Dr Lim Poh Khuen *MBBS (IMU), MPM (Mal)*

Trainee Lecturer:

Dr Julian Wong Joon Ip *MBBS (Monash, Aus)*

REHABILITATION MEDICINE

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Department:

Associate Professor Dr Mazlina Mazlan *MBBS (Mal), MRehabMed (Mal)*

Tel: 03-7949 2972/8596

Fax: 03-7968 4766

Email: mazlinamazlan@um.edu.my l mazlinamazlan@ummc.edu.my

Professor:

Professor Dr Nazirah Hasnan *MBBS (Mal), MRehabMed (Mal), PhD (Sydney)*

Visiting Professor

Professor Dato' Dr. Zaliha Omar MBBS (Mal), FRCP (Glasg), FAFRM(RACP)(Hon), FAMM, DMR(RCP, Lond), Grad.Cert.Medical Acu. (Monash), CIME(USA), Cert. (RESNA), Cert. CARF MED101

Associate Professors:

Associate Professor Dr Anwar Suhaimi *MBBS (Mal), MRehabMed (Mal)*

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

Associate Professor Dr Mazlina Mazlan *MBBS (Mal), MRehabMed (Mal)*

Medical/Senior Lecturers:

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

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

Dr Norhamizan Hamzah *MBCUB (UK) MRehabMed (Mal) PhD (Mal)*

Lecturer

Dr Sakinah binti Sabirin *MBBS (Ire) MRehabMed (Mal)*

SOCIAL & PREVENTIVE MEDICINE

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Department:

Professor Dr Victor Hoe Chee Wai Abdullah *MBBS (Mangalore), MPH (Mal), MPH (OH) (Mal), Meng (Safety, Health & Env) (Mal), PhD (Monash)*Tel: 03-7967 4756

Fax: 03-7967 4975

Email: victorhoe@um.edu.my I victor@ummc.edu.my

Professors:

Professor Datuk Dr Awg Bulgiba Awg Mahmud *MBBS (Mal), MPH (Mal), MAppStats (Mal), PhD (East Anglia) FFPH, FPHMM, FAMM, FASc*

Professor Dr Choo Wan Yuen *BSc (Hons)(UPM), MMedScPH (Mal), PhD (Aus)*

Professor Dr Moy Foong Ming *BSc (Hons) Dietetics (UKM), MSc (Nutrition) (UKM), MMedScPH (Mal), PhD (Mal)*

Professor Dr Ng Chiu Wan *MBBS (Spore), MPH (Mal), MPH (Health Services Mgt.) (Mal), PhD (Mal)*
Professor Dr Noran Naqiah 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 Kehormat
Professor Tin Tin Su MBBS, MSc.CHHM, Dr.Med
Professor Dr Maznah Dahlui *MD (Mal), MPH (Mal), PhD (Mal), FPH (Royal College of Physicians, UK)*

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 Marzuki bin Isahak *MBBS (Mal), MPH (Mal), DrPH (Mal) – (pinjam keluar UM)*

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

Associate Professor Dr Nasrin Agha Mohammadi *BSc. (Environmental Health Engineering) (Tehran), MSc (Civil Engineering) (USM), PhD (Mal)*

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

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

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

Medical/Senior Lecturers:

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

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

Dr Mahmoud Danaee *BSc (Iran), MSc (Biometry)(Tehran), PhD (Plant Bio Technology)(UPM)*

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 Supramanian MD(UGM), LFOM (Ireland), MPH (Malaya), DrPH (Malaya)

SURGERY

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Department:

Associate Professor Dr Vairavan Narayanan *MD (UKM), MS (UKM), FRCS Edin (Neuro Surg)*

Tel: 03-7949 2441 / 2070

Fax: 03-7958 6360

Email: nvairavan@um.edu.my I vairavan@ummc.edu.my | kj_sur@ummc.edu.my

General Surgery:

Professor Dr April Camilla Roslani *FAMM, FACS (Hon), FASCRS (Hon), FPSCRS (Hon), FASI (Hon) (India), FCSSL (Hon) (Sri Lanka), FAMS (Singapore), FRCS (Glasgow), FRCS (Edinburgh), Clinical Fellowship in Colorectal Surgery (Sing), MS (Mal), MBBCh (Wales), BSc (Hons) (Wales)*

Professor Dr Nur Aishah binti Mohd Taib *MBBS (Mal), MRCS (Edin), MS (Mal) Doctor of Medicine(UM) , GradDip GenetCounselling (CSU)*

Associate Professor Dr Khong Tak Loon *MBChB (Edin), MSc Surg Sc (Lond), MD (Res)(Lond), FRCS (UK)*

Associate Professor Dr Koh Peng Soon *MBBS (IMU), MRCSEd (UK), MSurg (UM) dan Hon. Clin. Assoc. (HK)*

Associate Professor Dr Ng Khoon Leong *MBBS(S'pore), FRCS (Edin), FRCS(Glasg)*

Associate Professor Dr See Mee Hoong *B.Med (UPM), MD (UPM), MS (Mal)*

Associate Professor Dr Yoong Boon Koon *BSc (Med), MBBS (UNSW), MRCSEd, MS (Mal), HPB&LT Fellow(HKU)*

Associate Professor Dr Teoh Li Ying *MBBS (Mal), MSurg (Mal)*

Dr Ahmad Rafizi Hariz bin Ramli *MD (UKM), MS (UM), IMGSS (RCSED), FEBVS (EU), Vascular & Endovascular Fellowship (MOH, UK), AMM (Mal)*

Dr Koong Jun Kit *MBBS (IMU) MRCS (Ire) MS (Mal)*

Dr Lim Hiong Chin *MBBS (IMU), MSurg (Mal)*

Dr Mohammad Rezal bin Abdul Aziz *MB, BCh, BAO(NUI),LRCP & SI (RCSI), MRCI (Ire), Dip.Lap. Surgery(Fr), MS(Mal)*

Dr Nora binti Abdul Aziz *MB BCh BAO (NUIUCD) MS (Mal)*

Dr Suniza binti Jamaris *MBBS (Mal), MS (Mal)*

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

Dr Teh Mei Sze *MD(USM), MSurg(Mal), MRCS (Edin),Fellowship in breast oncoplastic surgery (Italy),-Fellowship in breast oncoplastic surgery (Thai)*

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

Trainee Lecturer:

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

Cardiothoracic Surgery:

Professor Dr Raja Amin bin Raja Mokhtar *MBBS (Mal), MS (Mal), FRCS (Edin)*

Professor Dr Shahrul Amry bin Hashim MBChB (UK), MRCS (Edin), FRCS(C-Th) (Edin)

Associate Professor Dr Sivakumar a/l Krishanasamy *FRCS(Edin) CTh, FETCS , Aortic Fellowship UK , Thoarcic Fellowship UK , Uniportal VATS Fellowship (Shanghai*

Paediatric Surgery:

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

Associate Professor Dr Anand a/l Sanmugam Dr Anand Sanmugam BMedSc (UPM), MD (UPM) MRCS(Ire) ,MPaedSurg(UM) ,MMedEd(UM)

Dr Ganesh a/l P.Vythilingam *MBBS (MAHE),MS (Pediatric Surgery) (Mal), MRCS (Ireland),PhD (UM)-Study Leave*

Dr Srihari Singaravel *MBBS (Ind), MS (Pediatric Surgery) (Mal)*

Urology

Professor Dr Ong Teng Aik *MBBS (Mal), MS (Mal), FRCSI, FEBU, FRCS(Urol)*

Associate Professor Dr Shanggar a/l Kuppusamy *MBBS (MAHE), MSurg (UM), FRCS Urol(Glasg), Phd(UK)*

Dr Ahmad Nazran bin Fadzil MBChB (Leic), MRCS (Ire), MS (Mal), FRCS Urol (Glasg)

Dr Aung Kyaw Phyo *MBBS (Mandalay, MRCS (Ire), FRCS (Eng)*

Dr Chai Chu Ann *MD (KSMU, MSurg (Mal), FRCS (UK)*

Dr Siti Nur Masyithah binti Ma'arof MBBS (Malaya) ,MSurg (UM) ,FRCS Urol (UK)

Plastic Surgery:

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

Dr Kong Chee Kwan *MD (UNIMAS), MSurg (Mal),MPLASTSURG(USM), AM*

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

Neurosurgery:

Professor Dr Vickneswaran a/l Mathaneswaran *MBBS with distinction(Mal)*

Professor Dr Dharmendra a/l Ganesan MBBS (Mal), MS(Malaya) FAMM(Mal)

FRCS(Edinburgh) FRCS(Ireland) FRCS(Neurosurgery), UK IFAANS(USA) FRCS(England)FACS(USA)

P*rofessor Dr. Dato' Hari Chandran Thambinayagam MBBS(M'lore), AM(Mal), FRCS(Edin), FRCS(Eng), FRCS(Glasg)(Neuro Surg), FRCS(Edin)(Neuro.Surg), FACS*

Associate Professor Dr Kamal Azrin Abdullah @ Kalai Arasu Muthusamy *MBBS (Mal), MS (Mal),*

Dphil (Oxon)

Associate Professor Dr Vairavan Narayanan *MD (UKM), MS (UKM), FRCS Edin (Neuro Surg)*

Dr Ravindran A/L Karuppiah *MBBS (Thanjavur,India) MRCS(Ireland) MS (UM, Malaysia)*

Senior Lecturers

Dr Lim Jasmine *BMedSc(Hons)(UPM), DPhil(Oxon),PhD (Oxford)*

Associate Professor Dr Retnagowri a/p Rajandram *BScBiochem(Hons) (Aus), PhD(Aus)*

CLINICAL ONCOLOGY

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Unit:

Professor Dr Ho Gwo Fuang *BSc, MBChB, MRCP (UK), FRCR (UK)*
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Professor:

Professor Datin Dr Anita Zarina binti Bustam @ Mainudin *MBBCh (UK), FRCR (UK)*

Professor Dr Ho Gwo Fuang *BSc, MBChB, MRCP (UK), FRCR (UK)*

Associate Professors:

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

Associate Professor Dr Marniza binti Saad *MBBCh (UK), FRCR (UK)*

Associate Professor Dr Rozita binti Abdul Malik *MBBS (Mal), MCO (Mal)*

Associate Professor Dr Wan Zamaniah binti Wan Ishak @ Wan Mohammad *MBBS (Mal), MCO (Mal)*

Associate Professor Dr Ung Ngie Min *BEng (Mal), MMedPhys (Mal)*, PhD (Aust)

Medical/Senior Lecturers:

Dr Nurfadhlina Abdul Satar *MBBS (Nottingham, UK), MRCP (UK), FRCR (Roy Coll Lond), MSc (Oncology) (UK)*

Dr Lee Dai Wee *MBBS (IMU), MCO (Mal)*

MEDICAL EDUCATION & RESEARCH DEVELOPMENT UNIT (MERDU)

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Unit:

Professor Dr Jamunarani A/P S Vadivelu *BSc Hons. (UK), MSc (UK), PhD (Lond)*

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Professor:

Professor Dr Jamunarani A/P S Vadivelu *BSc Hons. (UK), MSc (UK), PhD (Lond)*

Associate Professor:

Associate Professor Dr Foong Chan Choong *BSc.Ed (Hons) (Mal), PhD (Mal)*

Associate Professor Dr Vinod Pallath *BSc (India), MSc (India), PhD (India)*

Senior Lecturers:

Dr Hong Wei-Han *BScEd (Hons) (UTM), MEd (Mal), PhD (Mal)*

SPORTS MEDICINE

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Unit:

Associate Professor Dr Mohd. Nahar Azmi bin Mohamed *MD (Universitas Padjadjaran Indonesia), MSpMed (Mal)*

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Associate Professors:

Associate Professor Dr Mohd. Nahar Azmi bin Mohamed *MD (Universitas Padjadjaran Indonesia), MSpMed (Mal)*

Associate Professor Dr Abdul Halim bin Mokhtar *MD (UKM), MSpMed (Mal)*

Associate Professor Dr Mohamad Shariff bin A Hamid *MBBS (Adel), MSpMed (Mal)*

Associate Professor Dr Zulkarnain bin Jaafar *MD (USM), MSpMed (Mal)*

Associate Professor Dr Goh Siew Li MD *(USM), MSpMed (Mal)*

Medical Lecturers:

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

Dr Choong Wai Kwong *MD (UPM), MSpMed (Mal)*

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

Trainee Lecturer (SLAI):

Dr Muhammad Kashani bin Mohd Kamil *MD (Universitas Sumatera Utara Indonesia)*

TRAUMA & EMERGENCY

DEPARTMENT/UNIT | ACADEMIC STAFF

Head of Unit:

Dr Abdul Muhaimin Noor Azhar, *MBBCh (Wales, UK), MMed Emerg Med (UM)*

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Associate Professors:

Associate Professor Dr Mohd Idzwan bin Zakaria *MBBCh BAO (Ire), MMed Emerg Med (Mal)*

Associate Professor Dr Rishya a/l Manikam *MBBS (Mal), MMed Emerg Med (Mal)*

Medical Lecturers:

Dr Abdul Muhaimin Noor Azhar, *MBBCh (Wales, UK), MMed Emerg Med (UM)*

Dr Ahmad Zulkarnain Ahmed Zahedi, *MBBS (Mal), MMed Emerg Med (Mal)*

Dr Aidawati Bustam @ Mainudin *MA, MB BCHir (Cambridge), MRCP (UK), MMed Emerg Med (UM)*

Dr Khadijah Poh Yuen Yoong, *MBBS (Mal), MMed Emerg Med (Mal)*

Dr Mohd Zahir Amin Mohd Nazri *MBBS (Mal), MMed Emerg Med (Mal)*

Trainee Lecturers:

Dr Anhar Kamarudin *MBBS (Mal)*

Dr Mohammad Aizuddin Azizah Ariffin *MBBS (Otago)*

Dr Mohd Hafyzuddin bin Md Yusuf *MB Bch BAO (Ireland)*

Dr Rafi'uddin Radzi bin Rusly

Dr Siti Nur Aliyah binti Zambri *MBBCh BAO (Ireland)*

HISTORY OF THE FACULTY OF MEDICINE

The University of 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 University of 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 the University of 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 the University of Malaya

Up to the 1950's, the Faculty of Medicine, University of Singapore, which was 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 studies of the University of Malaya was appointed to study the feasibility of establishing a medical school with its own teaching hospital. The board recommended the early establishment of both.

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

FIRST BATCH- 1969

The first batch of medical students was admitted to the Faculty 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, was completed in 10 months, so that the pioneer students were able to begin their course in May 1964. The building programme continued and the second phase was ready in time for Year II teaching the following May. Throughout this period, planning, building, ordering and receiving of equipment, recruitment of staff, organization of the Faculty, and discussions on the curriculum continued unremittingly. Phase I of the University Malaya Medical Centre 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 as on March 1967. Phase II of the Hospital consisting of Paediatric, Maternity and Rehabilitation Units was completed in December 1967, and became functional in March 1968. The total construction period for the Medical Centre consisting of the faculty departments, hospital (740 beds), Hostel for Clinical Students, Nurses Quarters with Nursing School and Central Animal House was three and a half years. Over the past three decades, the medical centre has expanded tremendously, and today it has 900 beds (the number will be increased to 1200 beds after renovation).

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

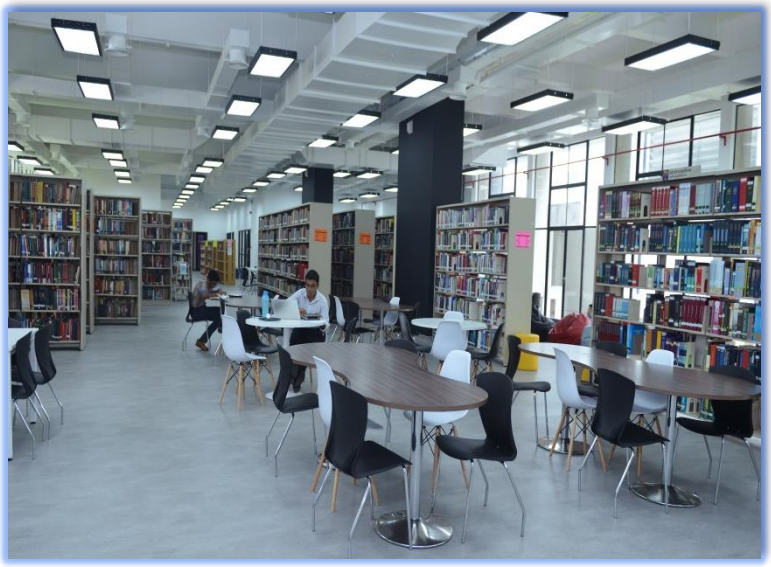
1	TAN SRI DANARAJ MEDICAL LIBRARY
2	MULTIDISCIPLINARY LABORATORIES
3	CLINCAL SKILLS LABORATORY
4	COMPUTER LABORATORIES
5	MEDICAL ILLUSTRATION AND MULTIMEDIA DEVELOPMENT UNIT
6	ANATOMY RESOURCE
7	CENTRAL PATHOLOGY MUSEUM

STUDENTS' SUPPORT

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

TAN SRI DANARAJ MEDICAL LIBRARY

SERVICES



Academic Services

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 services 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

A special facility at FOM is the multidisciplinary laboratories commonly known as the MD Labs (I and II). As their name implies, these labs serve various purposes which include wet and dry laboratory practical's, tutorials, self-directed learning stations, structured paraclinical examinations as well as for tutorial and self-learning. It also serves as a home-based for the students.

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. The centre allows medical and paramedical students and doctors to use these simulators for learning and practicing the clinical skills and procedures in a safe, controlled environment.

For detail information check its webpage: http://www.ummc.edu.my/csl.

COMPUTER LABORATORIES

The computers laboratories equip with a total of 90 computers are available to students of UMMC for various computer-aided learning programmes. These laboratories are opened to

5.00 pm on working days.

MEDICAL ILLUSTRATIONS AND MULTIMEDIA DEVELOPMENT UNIT

This unit is a centre to produce media and resources to support teaching and research at the faculty. Comprehensive photographic and graphic services are offered as well as a fully equipped video unit. Other services include management of the Faculty's lecture theatres and audio-visual equipment.

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, it also serves the needs of dental students and others from the allied health sciences 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 (see below).

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 videotapes. Dedicated timetable slots in the Phase I medical course encourage self-learning in the ARC by medical students. 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.

CENTRAL PATHOLOGY MUSEUM

STUDENT'S SUPPORT

SOCIETIES FOR STUDENTS

At the Faculty of Medicine, students are encouraged to interact with their fellow students. From this, you will build connections and networks which will then extend to National & International level collaborations. You are also encouraged to build teamwork and leadership skills throught your involvement. Please immerse yourselves in the myriad of events and activities of the societies below:

- Medical Society (MEDSOC)
- BioMedical Science Society
- Nursing Science Society (NurSoc)

FOM'S COUNSELLING & PSYCHIATRY SERVICES

FOM's Counsellors:

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

UMMC Team of Psychiatrists:

Day: Monday to Friday
Time: till 11.30 am
Venue: Psychological Medicine Clinic,
Lower Ground Floor, Psychological Medicine Complex,
University of Malaya Medical Centre.
Tel: 03-79492368 / 2334

MENTOR-MENTEE & ACADEMIC ADVISOR

Each UMMP student will be assigned a MENTOR (to guide you for the whole 5 years) and academic advisor (to guide you during your pre-clinical years). You are advised to create strong bonds and inculcate positive values with your mentor & advisor to aid in the development of your professional identity.

CAMPUS FACILITIES

1	ACCOMODATION
2	STUDENT SCHOLARSHIP AND LOAN
3	STUDENT HEALTH SERVICES
4	UM MEDICAL CENTRE
5	STUDENT COUNSELING SERVICES
6	KOMPLEKS PERDANASISWA
7	MASJID
8	SHOPS PHARMACY
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 equipped with three (3) blocks for male students and five (5) blocks for female students able to houses about 700 Faculty of Medicine's students.

Further information regarding student housing both on-campus and off-campus accommodation can refer to:
Accommodation Section
Students Affair Division
Block E, Perdanasiswa Complex
University of 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) is a unit under the Academic Administration & Services Centre (AASC) that manages national, State and statutory bodies, including private companies and philanthropic organizations scholarship/loans applications.

UBT can be reached at:
Scholarship & Sponsorship Unit
Academic Administration & Services Centre
Examination Building
University of 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
University of Malaya
Tel: 03-7967 6445
Email: kkpum@um.edu.my

Operating hours:
Mon-Fri: 0800 – 1700
No services on Saturday, Sunday &
Public Holiday

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

University of 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 has a few blocks of building that comprises office of the Deputy Vice Chancellor (Students Affair), the office of International Student Centre (ISC), the office Marketing & Recruitment Centre (MRC), auditorium, cafetaria, food stalls, Gazebo, Student Clubs/Activity Room & Corner, UM Entrepreneur Club, barber shop etc.

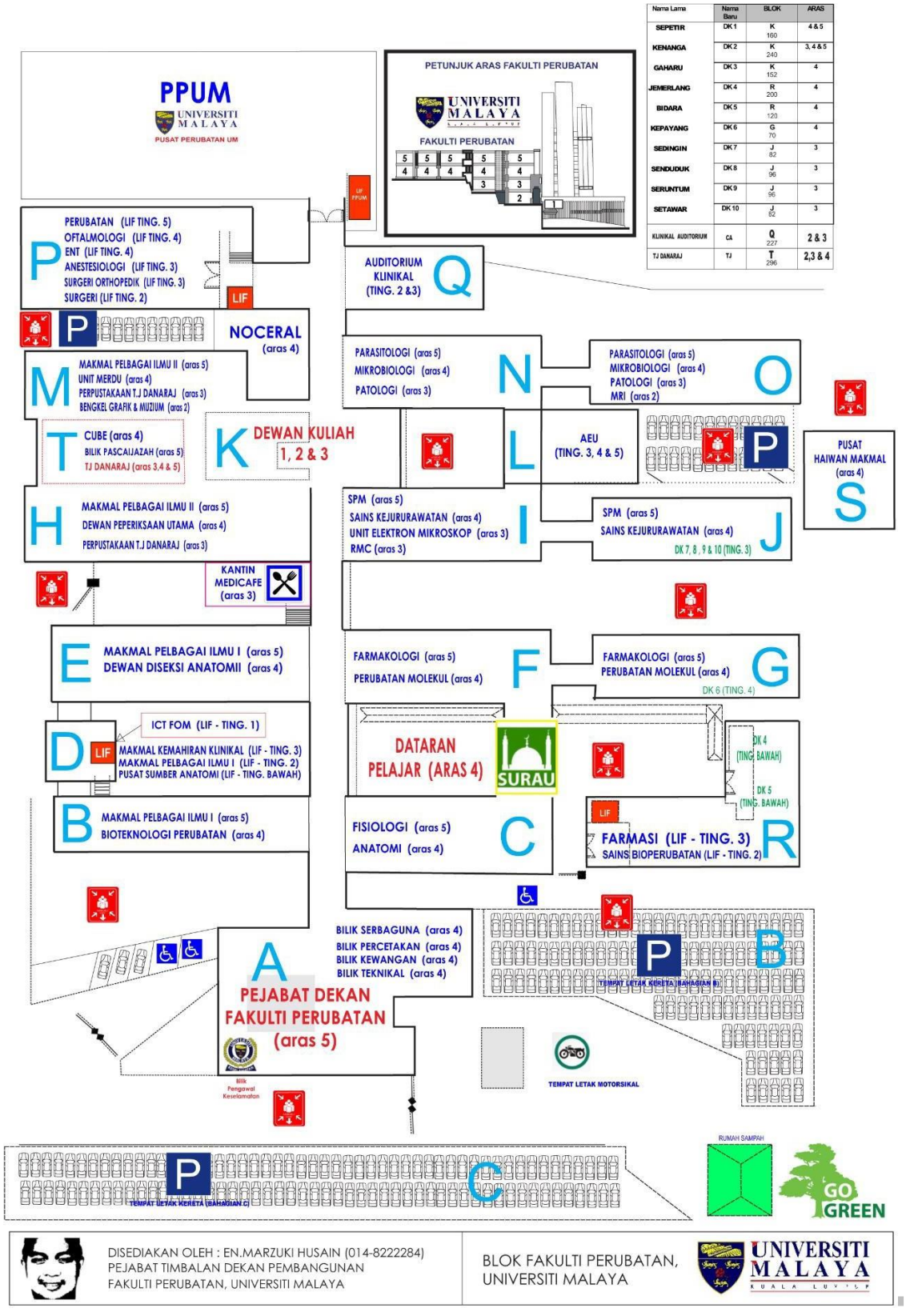
MOSQUE & PRAYER ROOMS FOR MUSLIMS

Masjid Al-Rahman is situated at the main entrance to UM. A surau is situated adjacent to the hospital. A newly built surau is situated in the Faculty of Medicine at level 4 between the Department of Anatomy and Molecular Medicine.

FINANCIAL & BANKING FACILITIES

Financial institution that offers full-fledged banking services is the Bank Islam that operates at the Ground Floor, High-Impact Research (HIR) Building. There are also ATMs of Maybank, CIMB Bank and other banks located across the campus and UM Medical Centre.

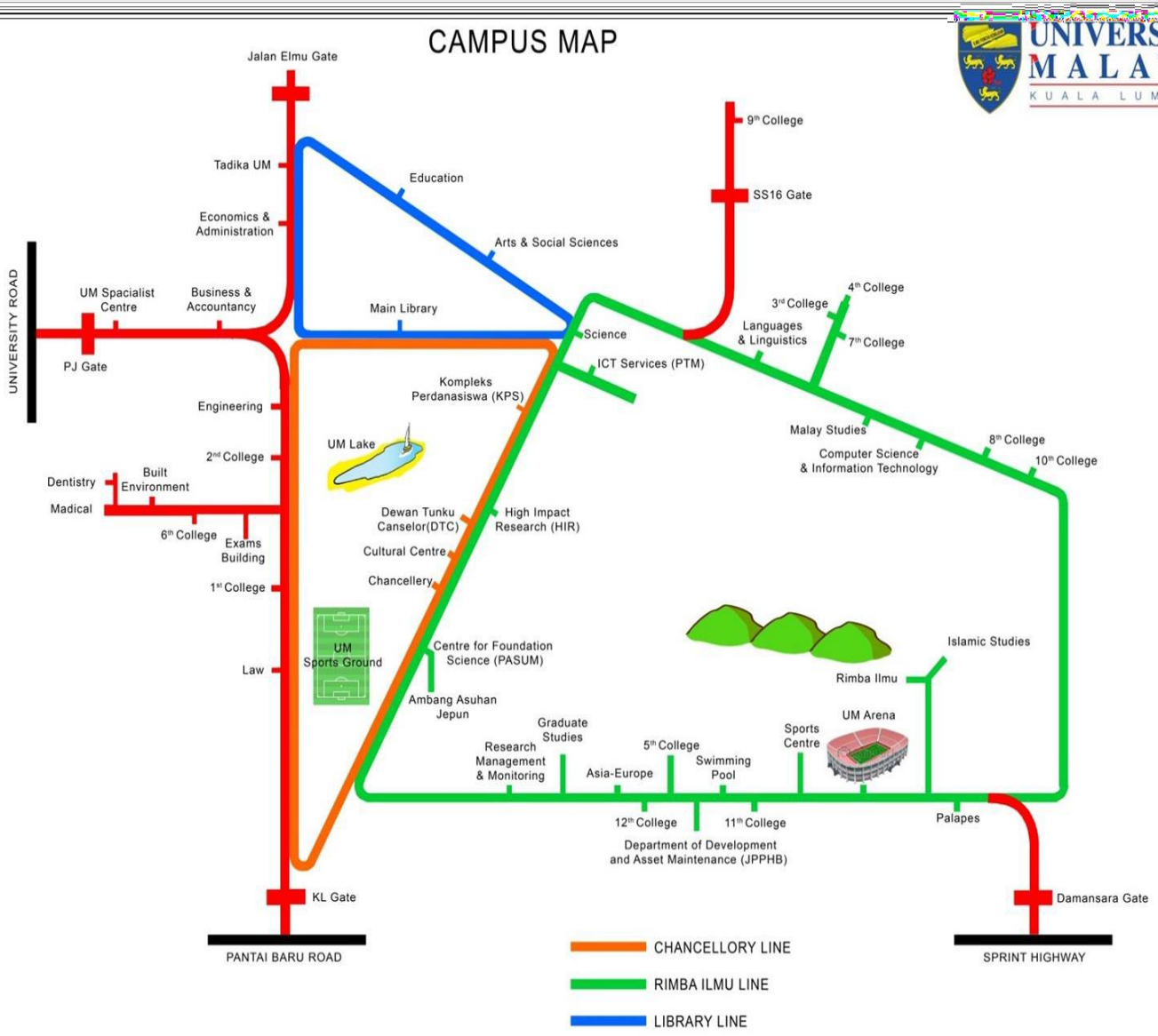
FACULTY BUILDING PLAN



DISEDIAKAN OLEH : EN.MARZUKI HUSAIN (014-8222284)
PEJABAT TIMBALAN DEKAN PEMBANGUNAN
FAKULTI PERUBATAN, UNIVERSITI MALAYA

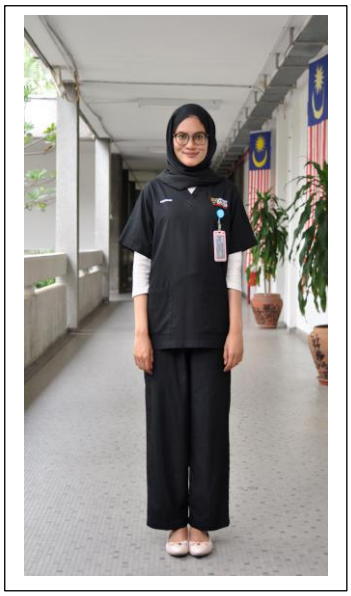
BLOK FAKULTI PERUBATAN,
UNIVERSITI MALAYA

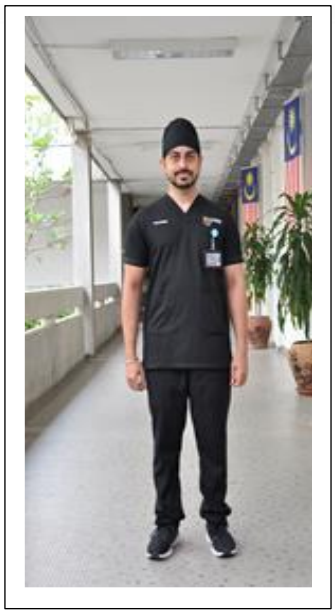
CAMPUS MAP

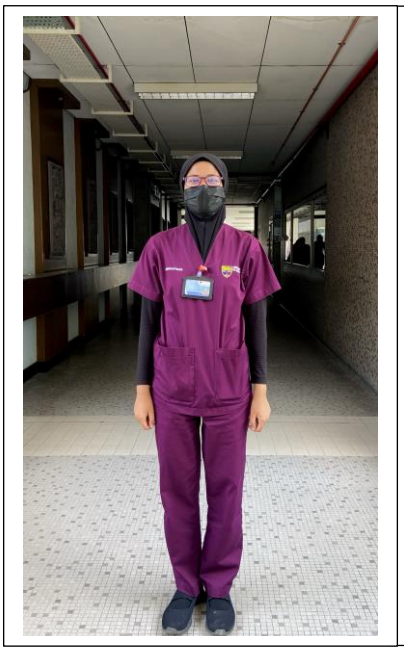

CAMPUS MAP
UNIVERSITI MALAYA
KUALA LUMPUR
Jalan Elmu Gate
Tadika UM
Economics & Administration
Education
Arts & Social Sciences
9th College
SS16 Gate
UNIVERSITY ROAD
UM Spacialist Centre
Business & Accountancy
Main Library
Science
ICT Services (PTM)
Languages & Linguistics
3rd College
4th College
7th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

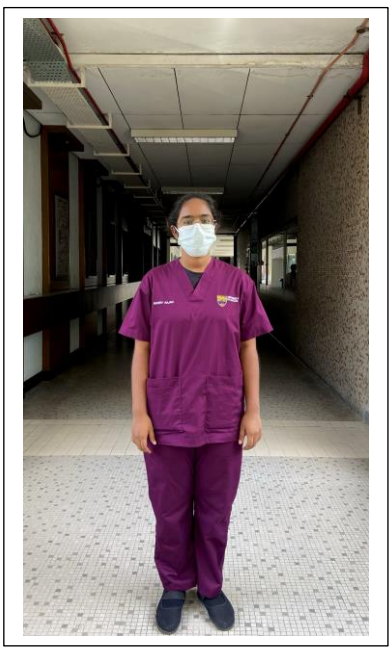
STUDENTS' DRESS CODE

Students must follow the official dress code of the University of Malaya when in Campus and Faculty. For Clinical Teaching sessions at the Faculty and University Malaya Medical Centre (UMMC), students need to abide by the dress code below:









ACADEMIC CALENDAR FOR 2022/2023 ACADEMIC SESSION (BACHELOR DEGREE LEVEL)

SEMESTER I				
Orientation (Week of Welcome) – *WOW*	1 week*	09.10.2022	-	16.10.2022
Lectures	7 weeks*	17.10.2022	-	04.12.2022
Mid-Semester I Break	1 week	05.12.2022	-	11.12.2022
Lectures	7 weeks*	12.12.2022	-	29.01.2023
Revision Week	1 week*	30.01.2023	-	05.02.2023
Semester I Final Examination	2 weeks*	06.02.2023	-	19.02.2023
Semester Break	3 weeks*	20.02.2023	-	12.03.2023
	22 weeks			
SEMESTER II				
Lectures	6 weeks*	13.03.2023	-	23.04.2023
Mid-Semester II Break	1 week*	24.04.2023	-	30.04.2023
Lectures	8 weeks*	01.05.2023	-	25.06.2023
Revision Week	1 week*	26.06.2023	-	02.07.2023
Semester II Final Examination	2 weeks	03.07.2023	-	16.07.2023
Semester Break	1 week*	17.07.2023	-	23.07.2023
	19 weeks			
SEMESTER BREAK				
Semester Break	9 weeks*	17.07.2023	-	17.09.2023
SPECIAL SEMESTER				
Lectures	7 weeks*	24.07.2023	-	10.09.2023
Special Semester Final Examination	1 week	11.09.2023	-	17.09.2023
	8 weeks			

Note:

(1) Course Registration and Examination Schedule can be referred at (*https://umsitsguide.um.edu.my/).* (*) The Academic Calendar has taken into account public and festive holidays.

Maulidur Rasul (9 October 2022)
Deepavali (24 October 2022)
Christmas Day (25 December 2022)
New Year (1 January 2023)
Chinese New Year (22 & 23 January 2023)
Federal Territory Day (1 February 2023)
Thaipusam (4 February 2023)
Nuzul Al-Quran (8 April 2023)
Eidul Fitri (22 & 23 April 2023)
Labour Day (1 May 2023)
Wesak Day (4 May 2023)
His Majesty's King's Birthday (5 June 2023)
Eidul Adha (29 June 2023)
Awal Muharam (19 July 2023)
National Day (31 August 2023)
Malaysia Day (16 September 2023)

ACADEMIC CALENDAR FOR 2022/2023 ACADEMIC SESSION (HIGHER DEGREE LEVEL)				
SEMESTER I				
Lectures	7 weeks*	17.10.2022	-	04.12.2022
Mid-Semester I Break	1 week	05.12.2022	-	11.12.2022
Lectures	7 weeks*	12.12.2022	-	29.01.2023
Revision Week	1 week*	30.01.2023	-	05.02.2023
Semester I Final Examination	2 weeks*	06.02.2023	-	19.02.2023
Semester Break	3 weeks*	20.02.2023	-	12.03.2023
	22 weeks			
SEMESTER II				
Lectures	6 weeks*	13.03.2023	-	23.04.2023
Mid-Semester II Break	1 week*	24.04.2023	-	30.04.2023
Lectures	8 weeks*	01.05.2023	-	25.06.2023
Revision Week	1 week*	26.06.2023	-	02.07.2023
Semester II Final Examination	2 weeks	03.07.2023	-	16.07.2023
Semester Break	1 week*	17.07.2023	-	23.07.2023
	19 weeks			
SEMESTER BREAK				
Break	9 weeks*	17.07.2023	-	17.09.2023
SPECIAL SEMESTER				
Lectures	7 weeks*	24.07.2023	-	10.09.2023
Special Semester Final Examination	1 week	11.09.2023	-	17.09.2023
	8 weeks			

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Malaysia Day (16 September 2023)

LIST OF UNDERGRADUATE PROGRAMMES IN THE FACULTY

- **BACHELOR OF MEDICINE AND BACHELOR OF SURGERY**
- **BACHELOR OF BIOMEDICAL SCIENCE**
- **BACHELOR OF NURSING SCIENCE**

BACHELOR OF BIOMEDICAL SCIENCE

Message from the Head of the Department of Biomedical Science

On behalf of the Biomedical Science and all the academic staff, I extend a very warm welcome to every one of you. As a department with the Biomedical Science programme, we would like your education in this university to be an enriching experience.

This handbook has been prepared as a guide for your study in this programme. The content is very useful for you especially in the first year of your study.

Being a student in the Biomedical Science Programme will take 4 years to complete the study and obtain the degree. In this programme, we will put in our best effort to train you to become a better person, meanwhile you also need to put in a lot of hard work powered by dedication, unwavering determination, perseverance and commitment to ensure you will become not only a knowledgeable but skilled personnel in the future.

Overall, everything that goes on in this university is a learning opportunity. The skills that you will acquire include good communication skills between you and the people surrounding you. You will also find that your teachers, seniors and friends are good mentors during your stay here, thus providing you with best apprenticeship you could have. The programme is also about character building, and, you will need to develop appropriate attitudes that contribute to the qualities necessary for your career later.

We hope this guidebook can be fully used to your advantage in better understanding the programme and the people entrusted to run it. Our support is always here to make your stay a memorable and fruitful journey.

We would like to wish you every success in the programme and hope that the years that you will spend with us will be among the best in your life. Last but not least, I wish to meet each one of you soon.

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

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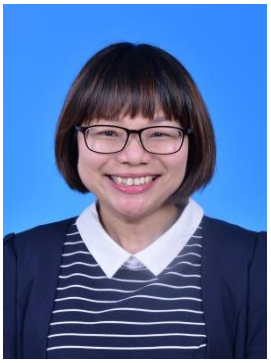

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OPERATIONAL ASSISTANTS

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 the University of Malaya is confident, skilled, ambitious and ready for life's journeys. 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

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 of 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, University 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)

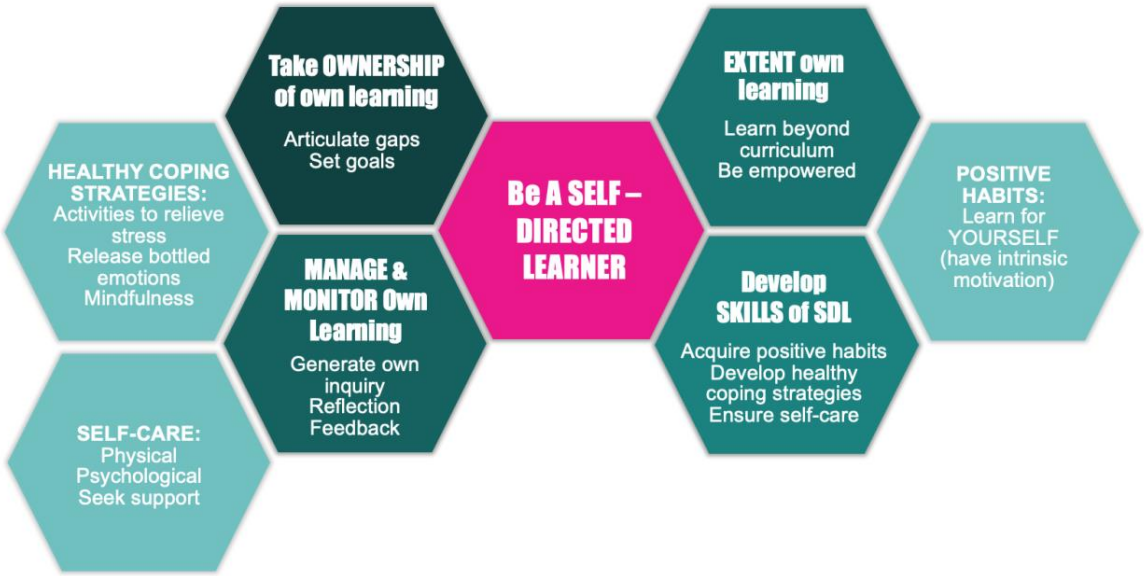

Figure 1: Training guide to become a Self-Directed Learner

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
	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 Course[ɣ] *Kursus Elektif Universiti[ɣ]* - Student Holistic Empowerment (SHE)		8
		Total Credits	**136**

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

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

[ɣ] For University Elective Courses: select at least 4 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
	GLTXXXX	English Communication# *Bahasa Inggeris Komunikasi#*	4
	GLT1017	Basic Malay Language *Bahasa Melayu Asas*	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 ¥ *Kursus Elektif Universiti* ¥ - Student Holistic Empowerment (SHE)		8
		Total Credits	**136**

For GLT courses, selection depends on the student's MUET/IELTS/TOFEL result.

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

¥ For University Elective Courses: select at least 4 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*

** **CHOOSE ONE** :	** **CHOOSE ONE** :	** **CHOOSE ONE** :	*(Students can only register for one course per semester)
● GLT1019 – Let's Speak ● GLT1020 – Fundamental Writing	● GLT1022 – Speak Up ● GLT1023 – Effective Workplace Writing	● 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	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

	(Proficiency in English III) 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	

COURSE STRUCTURE

Year 1 (2022/2023)

Semester I

Category	Course Code	Course Name	Credits
University Courses	GIG1012 / GLT1017	Philosophy and Current Issues (M) / Basic Malay Language (I)	2
	GIG1003	Basics of Entrepreneurship Culture	2
Core 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): Malaysia (I): International

Year 1 (2022/2023)

Semester II

Category	Course Code	Course Name	Credits
University Courses	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	19

*Please refer to page 17-21 for further details

Year 2 (2023/2024)

Semester I

Category	Course Code	Course Name	Credits
University Course	GLTXXXX	English Communication *	2
Core Courses	MIC2001	Genomics and Gene Expression	3
	MIC2002/ MIC2027	Pathology for Biomedical Science Human Patology	4
	MIC2004	Principles in Pharmacology and Toxicology	3
	MIC2017	Haematology	3
	MIC2018	Phlebotomy	3
University Elective Courses[Y]	EU0202101	SHE - Elective University Course (Thinking Matters: Mind and Intellect)	2
	EU0202102	SHE - Elective University Course (Emotional, Physical and Spiritual Intelligence: Heart, Body & Soul)	2
	EU0202103	SHE - Elective University Course (Technology/Artificial Intelligence and Data Analytics: I-Techie)	2
	EU0202104	SHE - Elective University Course (Global Issues and Community Sustainability: Making the World a Better Place)	2
		Total Credits	22

*Please refer to page 91-94 for further details

[Y] For University Elective Courses: select at least 2 of the 4 SHE courses offered.

Year 2 (2023/2024)

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 (2024/2025)

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.

Semester II

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

Year 4 (2025/2026)

Semester I

Category	Course Code	Course Name	Credits
University Courses	GKXXXXX	Co-Curriculum Course	2
Core Courses	MIC4001	Research Design in Biomedical Science	6
	MIC4012	Critical Discourse Analysis and Case Studies	4
University Electives Courses[ɣ]	EU0202101	SHE - Elective University Course (Thinking Matters: Mind and Intellect)	2
	EU0202102	SHE - Elective University Course (Emotional, Physical And Spiritual Intelligence: Heart, Body & Soul)	2
	EU0202103	SHE - Elective University Course (Technology/Artificial Intelligence and Data Analytics: I-Techie)	2
	EU0202104	SHE - Elective University Course (Global Issues and Community Sustainability: Making the World a Better Place)	2
		Total Credits	14

[ɣ] For University Elective Courses: select at least 1 of the SHE courses offered.

Year 3 (2025/2026)

Semester II

Category	Course Code	Course Name	Credits
Core Courses	MIC4002 MIC4013	Biomedical Science Horizons / Advance in Biomedical Science	4
	MIC4005	Research in Biomedical Science	6
University Courses	EU0202101	SHE - Elective University Course (Thinking Matters: Mind and Intellect)	2
	EU0202102	SHE - Elective University Course (Emotional, Physical And Spiritual Intelligence: Heart, Body & Soul)	2
	EU0202103	SHE - Elective University Course (Technology/Artificial Intelligence and Data Analytics: I-Techie)	2
	EU0202104	SHE - Elective University Course (Global Issues and Community Sustainability: Making the World a Better Place)	2
		Total Credits	12

[y] For University Elective Courses: select at least 1 of the 4 SHE courses offered.

MIC1007: Biochemistry (4 credit hours)

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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03-79674900

Course Assessment

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

MIC1008: Genetics and Developmental Biology (3 credit hours)

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. and Ellard, S. (2021). Emery's Elements of Medical Genetics (16th edition). Elseview.
3. Greer, R. (2018). Principles of Evolutionary Genetics. Syrawood Publishing House.

Course Coordinator

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03-79674901

Course Assessment

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

MIC1009: Human Body Systems I (3 credit hours)

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. University of Malaya Press.
5. Netter, F.H. Atlas of Human Anatomy. *Latest edition. London: Elsevier Health Sciences.

Course Coordinator

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03-79677898

Course Assessment

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

MIC1010: Biomedical Science Techniques (3 credit hours)

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 (3 credit hours)

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 (4th edition).
2. National Institutes of Health (2010). Biosafety in Microbiological and Biomedical Laboratories (5th edition)
3. e-learning Resources (uploaded onto SPeCTRUM)

Course Coordinator

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03 – 7967 6660

Course Assessment

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

MIC1012: Medical Microbiology (3 credit hours)

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. (2020) Microbiology: An Introduction. (13th Edition). Pearson Education.
3. Chess, B. (2021). Talaro's Foundations in Microbiology. (11th 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 (3 Credit hours)

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. University of Malaya Press.
5. Netter, F.H. Atlas of Human Anatomy. *Latest edition. 6th Edition. London: Elsevier Health Sciences.

Course Coordinator

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Course Assessment

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

MIC1014: Immunology (3 Credit hours)

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 (3 Credit hours)

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. Suvarna, K. S., Layton, C., & Bancroft, J. D. (2018). Bancroft's Theory and Practice of Histological Techniques E-Book: Elsevier Health Sciences.
2. Orchard, G., & Nation, B. (2017). Histopathology: Oxford University Press.

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 (3 Credit hours)

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. Jayaram Paniker, C.K. (2013). Textbook of Medical Parasitology. (7th Edition). Jaypee.
2. John, D.T. (2006). Markell and Voge's Medical Parasitology. (9th Edition). WB Saunders Co.

Course Coordinator

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03-7967 4753

Course Assessment

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

MIC2001: Genomics and Gene Expression (3 Credit hours)

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%)

MIC2002: Pathology For Biomedical Science */

MIC2027: Human Pathology (4 Credit hours)

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, AK & Aster J.C. (2017). Robbins Basic Pathology. (10th Edition). Elsevier, Philadelphia, United States.
2. Kumar, V., Abbas, A. K., & Aster, J. C. (2020). Robbins & Cotran Pathologic Basis of Disease. 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 (3 Credit hours)

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. Rang, H. P., Ritter, Flower, R. J., & Henderson, G. (2020). Rang and Dale's Pharmacology (9th edition). Elsevier.
2. Katzung, B.G (2018).Basic & Clinical Pharmacology (14th edition). McGraw Hill Education.
3. Whalen, K. (2018). Lippincott Illustrated Reviews: Pharmacology (7th edition). Wolters Klumer.
4. Klaassen, C. D. (2018). Casarelte & Doull's Toxicology :The Basic Science of Poisons (9th Edition). McGraw Hill Professional.

Course Coordinator

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03-79675727

Course Assessment

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

MIC2017: Haematology (3 Credit hours)

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 (3 Credit hours)

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. (2015). Phlebotomy Essentials (6th Edition). Wolters Kluwer.
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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03-79674901

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2013: Laboratory Animal Science (3 Credit hours)

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%)

MIC2019: Molecular Biology Techniques (3 Credit hours)

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

Professor Dr. Chua Kek Heng

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03-79676607

Course Assessment

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

MIC2020: Epidemiology and Clinical Research (3 Credit hours)

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. Gordis, L. (2018). Epidemiology (6th edition). Saunders Elsevier.
2. Friis, R. H., & Sellers, T. (2013). Epidemiology for public health practice. Jones & Bartlett Publishers.

Course Coordinator

Dr. Kee Boon Pin

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03-79676601

Course Assessment

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

MIC2021: Biomedical Ethics (3 Credit hours)

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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03-79674903

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2022: Cancer Biology (3 Credit hours)

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. Pezzella, F., Tavassoli M., and Kerr, D. (eds). (2019). Oxford Textbook of Cancer Biology. Oxford University Press.
2. Fior, R. and Zilhão, R. (eds). (2019). Molecular and Cell Biology of Cancer. Springer Nature Switzerland.
3. Weinberg, R. (2014). The Biology of Cancer. (2nd Edition). Garland Publishing.

Course Coordinator

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03-79677522

Course Assessment

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

MIC2023: Blood Transfusion Technology (3 Credit hours)

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. Blaney, K. D. & 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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03-79676649

Course Assessment

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

MIC2024: Principles of Biomedical Imaging (3 Credit hours)

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

Dr. Anwar Norazit

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03-79676649

Course Assessment

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

MIC2025: Bioinformatics for Biomedical Science (3 Credit hours)

Learning Outcomes

1. Demonsrate suitable bioinformatics tools to generate meaningful types of data.
2. Apply basic principles of bioinformatics which 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. The Biostar Handbook. (2021). Bioinformatics Data Analysis Guide. (2nd Edition). https://www.biostars.org/

Course Coordinator

Dr. Kamariah Ibrahim

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03-79676649

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2026: Diagnostic Parasitology and Entomology (3 Credit hours)

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

Dr. Cheong Fei Wen

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03-7967 6618

Course Assessment

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

MIC3008: Chemical Pathology (4 Credit hours)

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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03-79676611

Course Assessment

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

MIC3013: Research Skills for Biomedical Science (3 Credit Hours)

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

Dr. Anwar Norazit

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03-79676604

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC3014: Advanced Medical Microbiology (3 Credit hours)

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

Dr. Tee Kok Keng

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03-79676660

Course Assessment

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

MIC3015: Laboratory Management (3 credit hours)

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

Dr. Nur'Ain Salehen

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03-79674902

Course Assessment

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

MIC3016: Anatomic Pathology (3 credit hours)

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

Associate Professor Dr. Ong Kien Chai

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03-79674799

Course Assessment

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

MIC3017: Neuroscience (3 credit hours)

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

Associate Professor Dr. Azlina Ahmad Annuar

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03-79674948

Course Assessment

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

MIC3018: Recombinant DNA Technology (3 credit hours)

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

Dr. Kee Boon Pin

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03-79676601

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC3019: Applied Pharmacology and Therapeutics (3 credit hours)

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. Rang, H. P., Ritter, Flower, R. J., & Henderson, G. (2020). Rang and Dale's Pharmacology (9th edition). Elsevier.
2. Katzung, B., & Trevor, A. (2015). Basic & Clinical Pharmacology (13th edition). McGraw Hill Professional.
3. Whalen, K., Finkel, R. & Panarell, T. (2015). Lippincott Illustrated Reviews: Pharmacology (6th edition). Wolters Klumer.

Course Coordinator

Dr. Zaridatul Aini Ibrahim

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03-79675727

Course Assessment

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

MIC3020: Advanced Parasitology and Entomology (3 credit hours)

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

Dr. Romano Ngui

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03-79674978

Course Assessment

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

MIC3021: Industrial Training (9 credit hours)

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

Not Available

Course Coordinator

Associate Professor Dr. Ong Kien Chai

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03-79674799

Course Assessment

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

MIC4001: Research Design in Biomedical Science (6 credit hours)

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

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Course Assessment

Course will be assessed by Continuous Assessment (100%) – Proposal presentation, Supervisor Evaluation and Log book report.

MIC4012: Critical Discourse Analysis and Case Studies (4 credit hours)

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 to 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

Not Available

Course Coordinator

Dr. Tan Soon Hao

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03-79676654

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC4002: Biomedical Science Horizons

MIC4013 Advances in Biomedical Science (4 credit hours)

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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03-79677898

Course Assessment

Course will be assessed by Continuous assessment (100%)

MIC4005: Research in Biomedical Science (6 credit hours)

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, Written report, Supervisor's evaluation.