UNIVERSITI MALAYA

FAKULTI PERUBATAN
Faculty of Medicine

Session **2025/2026**

https://medicine.um.edu.my | @medicineum | @medicineumalaya

Bachelor of Biomedical Science

More Information

Dean Office, Faculty of Medicine
+603 - 7967 4941 / 6686
ddu_fom@um.edu.my

INDEX

WELCOME TO THE FACULY OF MEDICINE, UNIVERSITI MALAYA

Salam Sejahtera and warm greetings

To all new students—whether you are beginning your journey in **Medicine**, **Nursing** and **Biomedical Science**—welcome to the **Faculty of Medicine, Universiti Malaya**.

Congratulations on securing a place at one of Malaysia's premier institutions for health and biomedical sciences. You have earned your spot through dedication, determination, and the desire to make a meaningful impact in the world. We are honoured to welcome you into our family.

Each of you has chosen a unique but equally vital path in healthcare. Whether your future lies in the hospital, the clinic, the laboratory, or the community, your contribution will be essential to the health and well-being of society. At the heart of it all is one common goal—to serve humanity with knowledge, skill, and compassion.

The journey ahead will be transformative. You will gain deep scientific knowledge, develop critical thinking skills, and cultivate the values that underpin ethical and compassionate care. You will be challenged to grow—not just intellectually, but personally and professionally.

At Universiti Malaya, we believe in education that is holistic, integrative, and future-focused. You will be part of an academic and authentic environment that encourages early exposure to real-world problems, community engagement, interprofessional learning, and research. You will explore the frontiers of knowledge—from molecular science and diagnostics to patient-centred care and population health. And while this journey will be rigorous, you will not walk it alone. You will be supported by dedicated educators, inspiring mentors, and a community of peers who will learn and grow alongside you. There will be late nights, demanding assignments, and perhaps moments of uncertainty. But there will also be great joy—discovering your calling, touching lives, and forming friendships that last a lifetime. Lean into the challenges, trust the process, and remember why you began this journey in the first place.

Biomedical science students, your role in understanding disease, advancing diagnostics, and driving innovation is indispensable to the health system of the future.

Medical students, you carry the responsibility and privilege of caring for others at their most vulnerable. It is a path of lifelong learning and service.

Nursing students, you are the heartbeat of compassionate care. You will be the comfort in crisis, the strength during recovery, and the advocate for those whose voices may go unheard.

Together, you form the backbone of a health ecosystem that must be collaborative, resilient, and ethical. So, wear your scrubs and white coats with pride—but also with humility and purpose. Be open, be kind, and be brave. The world needs more thinkers, healers, and changemakers like you.

Once again, welcome to the Faculty of Medicine, Universiti Malaya. We are proud to have you with us, and we look forward to witnessing your journey unfold. Thank you.

PROFESSOR DATO' DR. YANG FARIDAH ABDUL AZIZ
Dean

MESSAGE FROM THE DEPUTY DEAN (UNDERGRADUATE STUDIES)

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

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

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

Medical education does not only revolve around science, but also involves the art of practicing it. We want you to be curious about the programme. Everything that goes on in this institution is a learning opportunity. The skills that you will acquire include good communication skills between you and your colleagues, your patients and their families (when applicable), your teachers and 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.

PROFESSOR DR. MUHAMMAD YAZID JALALUDIN
Deputy Dean (Undergraduate Studies)

UNDERGRADUATE ADMINISTRATION

PROFESSOR DR. MUHAMMAD YAZID JALALUDIN

DEPUTY DEAN (UNDERGRADUATE)
yazidjal@um.edu.my
yazidj@ummc.edu.my
ddu@um.edu.my
ddu@ummc.edu.my

IUNAIDAH BINTI IAMALUDIN

ASSISTANT REGISTRAR
junaidahj@um.edu.my
junaidahj@ummc.edu.my
03-7967 3796

AZWATI BINTI YUSOF

SECRETARY
azwayusof@um.edu.my
603 – 7949 2156

NORANA BINTI ABU

ASSISTANT ADMINISTRATIVE OFFICER
norana@um.edu.my
603 – 7967 7584

NURSYARAFINA NAJWA ZULKIFLI

ASSISTANT ADMINISTRATIVE OFFICER
syarafinanajwa@um.edu.my
603 – 7967 4941

YUSNIZA BINTI MOHD YUNUS

ADMINISTRATIVE ASSISTANT
yusnizamy@um.edu.my
yusniza@ummc.edu.my
603 – 7967 7584

DAMIA HUDA BINTI MAAMOR

ADMINISTRATIVE ASSISTANT
damiahuda@um.edu.my
603 – 7967 6686

KUHAN A/L KRISHNAN

ADMINISTRATIVE ASSISTANT
kuhank@um.edu.my
kuhan@ummc.edu.mY
603 - 7967 6686

MASHAYU BAIDURI BINTI MIHAD

ADMINISTRATIVE ASSISTANT
mashayu@um.edu.my
603-7967 3796

UNDERGRADUATE ADMINISTRATION

DEAN

Professor Dato' Dr. Yang Faridah Abdul Aziz	Tel: Email:	03-7949 2050 yangf@um.edu.my yangf@ummc.edu.my

DEPUTY DEANS

Professor Dr. Shahrul Bahyah Kamaruzzaman (Postgraduate)	Tel: Email:	03-7949 2108 shahrulk@um.edu.my shahrulbahyah@ummc.edu.my
Professor Dr. Muhammad Yazid Jalaludin (Undergraduate Studies)	Tel: Email:	03-7949 2156 yazidjal@um.edu.my yazidj@ummc.edu.my
Professor Dr. Azlina Amir Abbas (Development & Infrastructure)	Tel: Email:	03-7949 2103 azabbas@um.edu.my
Professor Dr. Noran Naqiah Mohd Hairi (Research)	Tel: Email:	03-7949 2103 noran@um.edu.my
Professor Dr. Tengku Ahmad Shahrizal Tengku Omar (Student Affairs)	Tel: Email:	03-7954 0533 tshahrizal@ummc.edu.my tshahrizal@um.edu.my

ADMINISTRATION

Puan Sarinah Sallip Faculty Manager	Tel: Email:	03-7967 2077 sarinahs@um.edu.my
Puan Salifah Hasanah Ahmad Bedawi Senior Assistant Registrar (Postgraduate)	Tel: Email:	03-7967 7503 salifah@um.edu.my
Puan Junaidah Jamaluddin Assistant Registrar (Undergraduate Studies)	Tel: Email:	03-7967 3796 junaidahj@um.edu.my junaidahj@ummc.edu.my
Puan Maizatul Shida Md Daham Finance Officer	Tel: Email:	03-7967 7585 maizatulshida@um.edu.my

HEADS OF DEPARTMENTS

ANAESTHESIOLOGY

PROFESSOR DR. RAFIDAH BINTI ATAN

rafidah.atan@um.edu.my
03-7949 3116

ANATOMY

DR. INTAN SUHANA BINTI ZULKAFLI

intansuhanazulkafli@um.edu.my
03-7967 4735

PHARMACOLOGY

PROFESSOR DR. KIEW LIK VOON

lvkiew@ummc.edu.my | lvkiew@um.edu.my
03-7967 4702/ 03-7967 4735

PHYSIOLOGY

PROFESSOR DR. NAGUIB BIN SALLEH

naguibsalleh@um.edu.my
03-7967 4707

MEDICAL MICROBIOLOGY

ASSOCIATE PROFESSOR DR. CHANG LI YEN

changliyenum.edu.my
03-7949 3116

OBSTETRICS AND GYNAECOLOGY

PROFESSOR DR. MUKHRI BIN HAMDAN

mukhri@um.edu.my I mukhri@ummc.edu.my
03-7949 2049/2059

OPHTHALMOLOGY

PROFESSOR DR. TENGKU AIN FATHLUN BINTI TENGKU KAMALDEN

t.ain.kamalden@ummc.edu.my
03-79677967/ 79492060

OTORHINOLARYNGOLOGY

PROFESSOR DR. ZUKIFLEE BIN ABU BAKAR

abzulkiflee@ummc.edu.my
03-7949 2062

PARASITOLOGY

PROFESSOR DR. LAU YEE LING

lauyeeling@um.edu.my
03- 7967 4746

PATHOLOGY

ASSOCIATE PROFESSOR DR. MUN KEIN SEONG @ MAN KEIN SEONG

ksmun@um.edu.my I ksmun@ummc.edu.my
03-7949 2064/2375

PAEDIATRICS

ASSOCIATE PROFESSOR DR. AZANNA BINTI AHMAD KAMAR

azanna@um.edu.my
03-7949 2425

MEDICINE

PROFESSOR DR. GAN SHIAW SZE @ GAN GIN GIN

gangg@um.edu.my I gangg@ummc.edu.my
03-7949 2429

SOCIAL & PREVENTIVE MEDICINE

PROFESSOR DR. VICTOR HOE CHEE WAI BIN ABDULLAH

victorhoe@um.edu.my/ victor@ummc.edu.my
03-7967 4756

MOLECULAR MEDICINE

PROFESSOR DR. FUNG SHIN YEE

syfungum.edu.my
03-03-7967 4906

PRIMARY CARE MEDICINE

ASSOCIATE PROFESSOR DR. SITI NURKAMILLA BINTI RAMDZAN

sitinurkamilla@um.edu.my
03-7949 2306

PSYCHOLOGICAL MEDICINE

ASSOCIATE PROFESSOR DR. MUHAMMAD MUHSIN BIN AHMAD ZAHARI

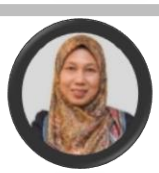
maz721@um.edu.my
03-7949 2068

BIOMEDICAL IMAGING

PROFESSOR DR. KARTINI BINTI RAHMAT

katt_xr2000@um.edu.my
03-7949 2069

REHABILITATION MEDICINE



PROFESSOR DR. MAZLINA BINTI MAZLAN

mazlinamazlan@um.edu.my
03-7949 2972/3120

BIOMEDICAL SCIENCE

PROFESSOR DR. CHUA KEK HENG

khchua@um.edu.my I khchua@ummc.edu.my
03-7967 6616

NURSING SCIENCE

ASSOCIATE PROFESSOR DR. TANG LI YOONG

liliantang@um.edu.my I lytang@ummc.edu.my
03-7949 3646

SURGERY

PROFESSOR DR. SHANGGAR KUPPUSAMY

drshanggar@um.edu.my I shanggar@ummc.edu.my
03-7949 2441 / 2070

ORTHOPAEDIC SURGERY

ASSOCIATE PROFESSOR DR. NOR FAISSAL BIN YASIN

drfaissal76@um.edu.my I faissal@ummc.edu.my
03-7949 2061

SPORT MEDICINE

ASSOCIATE PROFESSOR DR. MOHAMAD SHARIFF BIN A HAMID

ayip@um.edu.my
03-79498031

TRAUMA & EMERGENCY

DR. AIDAWATI BINTI BUSTAM @ MAINUDIN

aidabustam@um.edu.my
03-7949 4198

CLINICAL ONCOLOGY

ASSOCIATE PROFESSOR DR. WAN ZAMANIAH BINTI WAN ISHAK

zamachi@um.edu.my | wzamaniah@ummc.edu.my
03-7949 2498/2183

UNIVERSITI MALAYA
EDUCATIONAL GOALS

Graduates of Universiti Malaya will be able to:

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

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

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

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

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

VISION & MISSION
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

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.

OUR HISTORY

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

Establishment of the Faculty of Medicine, 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 Universiti 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 Universiti 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 of 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.

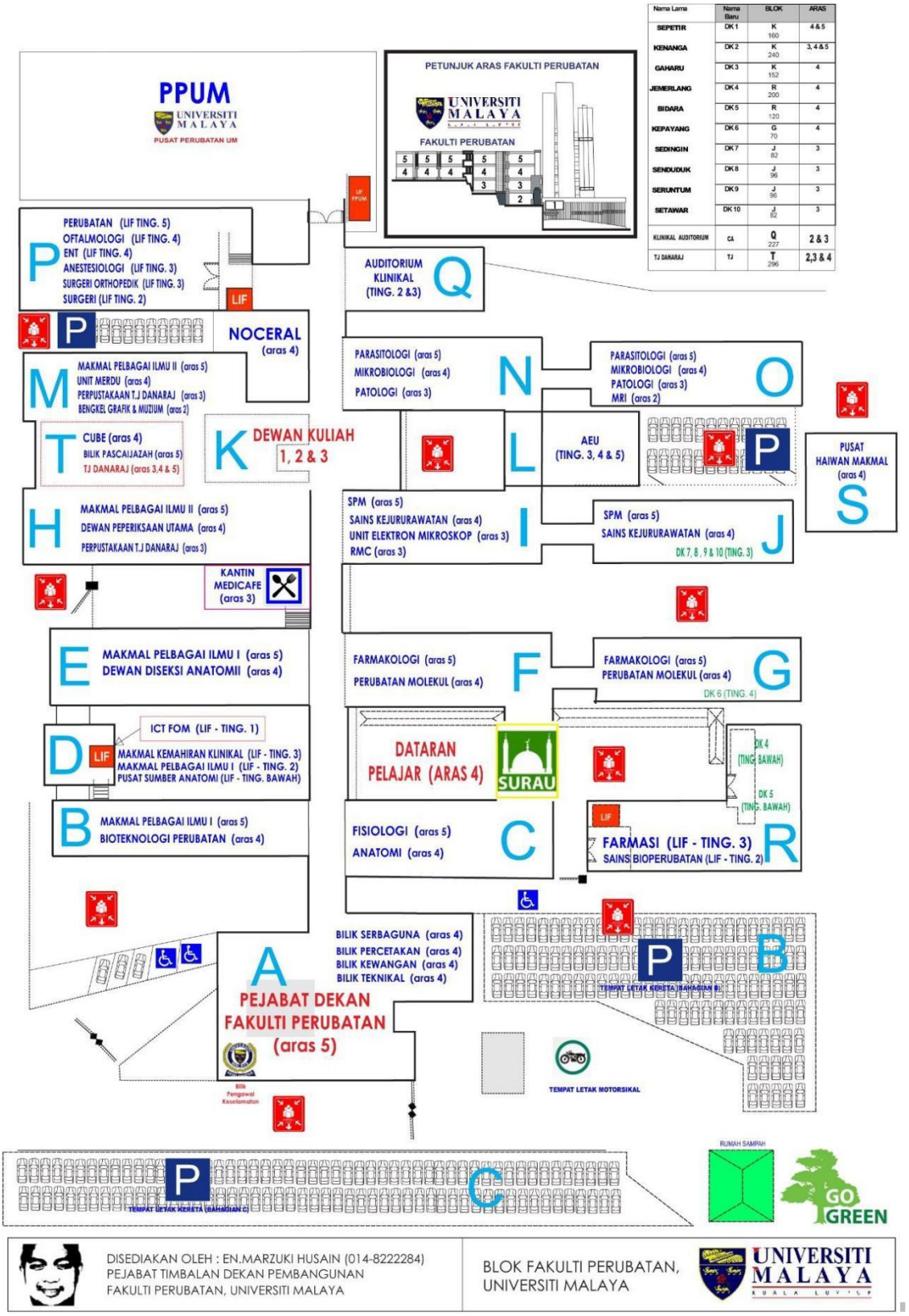
FACILITIES

1	TAN SRI DANARAJ MEDICAL LIBRARY
2	MULTIDISCIPLINARY LABORATORIES
3	CLINCAL SKILLS LABORATORY
4	COMPUTER LABORATORIES
5	MEDICAL ILLUSTRATION AND MULTIMEDIA DEVELOPMENT UNIT
6	ANATOMY RESOURCE CENTRE
7	TAN SRI DR. LIM WEE CHAI MEDICAL MUSEUM

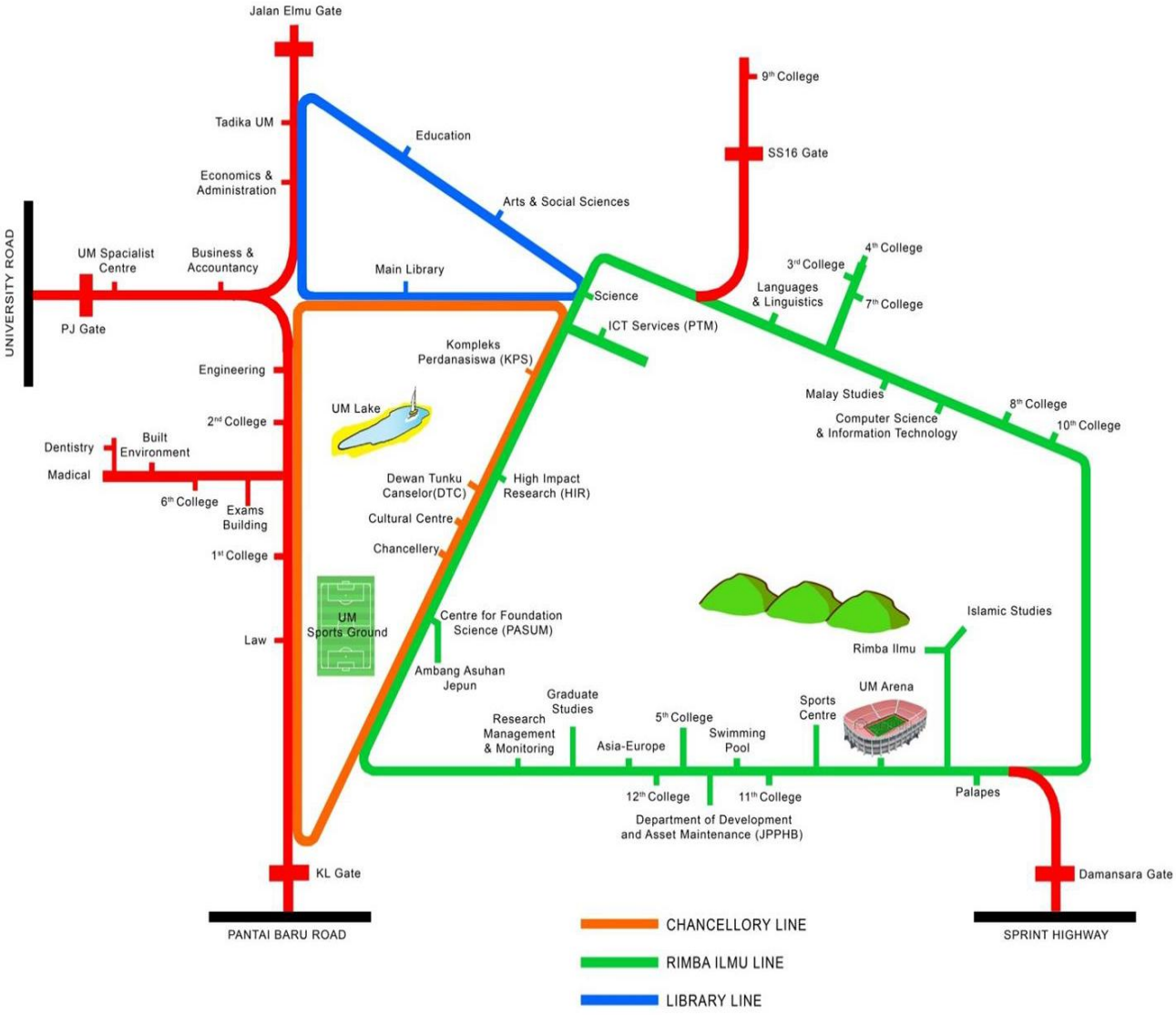
STUDENT SUPPORT

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

FACULTY MAP


PPUM
UNIVERSITI MALAYA
PUSAT PERUBATAN UM
PETUNJUK ARAS FAKULTI PERUBATAN
UNIVERSITI MALAYA
FAKULTI PERUBATAN
Nama Lama | Nama Baru | BLOK | ARAS
SEPETIR | DK 1 | K 160 | 4 & 5
KENANGA | DK 2 | K 240 | 3, 4 & 5
GAHARU | DK 3 | K 152 | 4
JEMERLANG | DK 4 | R 200 | 4
BIDARA | DK 5 | R 120 | 4
KEPAYANG | DK 6 | G 70 | 4
SEDINGIN | DK 7 | J 82 | 3
SENDUDUK | DK 8 | J 96 | 3
SERUNTUM | DK 9 | J 96 | 3
SETAWAR | DK 10 | J 82 | 3
KLINIKAL AUDITORIUM | CA | Q 227 | 2 & 3
TJ DANARAJ | TJ | T 296 | 2,3 & 4
P
PERUBATAN (LIF TING. 5)
OFTALMOLOGI (LIF TING. 4)
ENT (LIF TING. 4)
ANESTESIOLOGI (LIF TING. 3)
SURGERI ORTHOPEDIK (LIF TING. 3)
SURGERI (LIF TING. 2)
LIF
AUDITORIUM KLINIKAL (TING. 2 &3)
Q
NOCERAL (aras 4)
M
MAKMAL PELBAGAI ILMU II (aras 5)
UNIT MERDU (aras 4)
PERPUSTAKAAN T.J DANARAJ (aras 3)
BENGKEL GRAFIK & MUZIUM (aras 2)
T
CUBE (aras 4)
BILIK PASCAIJAZAH (aras 5)
TJ DANARAJ (aras 3,4 & 5)
K
DEWAN KULIAH 1, 2 & 3
H
MAKMAL PELBAGAI ILMU II (aras 5)
DEWAN PEPERIKSAAN UTAMA (aras 4)
PERPUSTAKAAN T.J DANARAJ (aras 3)
KANTIN MEDICAFE (aras 3)
E
MAKMAL PELBAGAI ILMU I (aras 5)
DEWAN DISEKSI ANATOMII (aras 4)
D
LIF
ICT FOM (LIF - TING. 1)
MAKMAL KEMAHIRAN KLINIKAL (LIF - TING. 3)
MAKMAL PELBAGAI ILMU I (LIF - TING. 2)
PUSAT SUMBER ANATOMI (LIF - TING. BAWAH)
B
MAKMAL PELBAGAI ILMU I (aras 5)
BIOTEKNOLOGI PERUBATAN (aras 4)
A
PEJABAT DEKAN FAKULTI PERUBATAN (aras 5)
Bilik Pengawal Keselamatan
BILIK SERBAGUNA (aras 4)
BILIK PERCETAKAN (aras 4)
BILIK KEWANGAN (aras 4)
BILIK TEKNIKAL (aras 4)
PARASITOLOGI (aras 5)
MIKROBIOLOGI (aras 4)
PATOLOGI (aras 3)
N
PARASITOLOGI (aras 5)
MIKROBIOLOGI (aras 4)
PATOLOGI (aras 3)
MRI (aras 2)
O
L
AEU (TING. 3, 4 & 5)
P
PUSAT HAIWAN MAKMAL (aras 4)
S
SPM (aras 5)
SAINS KEJURURAWATAN (aras 4)
UNIT ELEKTRON MIKROSKOP (aras 3)
RMC (aras 3)
I
SPM (aras 5)
SAINS KEJURURAWATAN (aras 4)
DK 7, 8 , 9 & 10 (TING. 3)
J
FARMAKOLOGI (aras 5)
PERUBATAN MOLEKUL (aras 4)
F
FARMAKOLOGI (aras 5)
PERUBATAN MOLEKUL (aras 4)
DK 6 (TING. 4)
G
DATARAN PELAJAR (ARAS 4)
SURAU
DK 4 (TING. BAWAH)
DK 5 (TING. BAWAH)
FISIOLOGI (aras 5)
ANATOMI (aras 4)
C
LIF
FARMASI (LIF - TING. 3)
SAINS BIOPERUBATAN (LIF - TING. 2)
R
P
B
TEMPAT LETAK KERETA BAHAGIAN B
TEMPAT LETAK MOTORSIKAL
P
C
TEMPAT LETAK KERETA BAHAGIAN C
RUMAH SAMPAH
GO GREEN
DISEDIAKAN OLEH : EN.MARZUKI HUSAIN (014-8222284)
PEJABAT TIMBALAN DEKAN PEMBANGUNAN
FAKULTI PERUBATAN, UNIVERSITI MALAYA
BLOK FAKULTI PERUBATAN,
UNIVERSITI MALAYA
UNIVERSITI MALAYA
KUALA LUMPUR

CAMPUS MAP


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
6th College
Exams Building
Dewan Tunku Canselor(DTC)
High Impact Research (HIR)
Cultural Centre
Chancellery
1st College
UM Sports Ground
Centre for Foundation Science (PASUM)
Law
Ambang Asuhan Jepun
Islamic Studies
Rimba Ilmu
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

STUDENT DRESS CODE

Students must follow the official dress code of the Universiti Malaya when in Campus and Faculty. For laboratory/practical sessions, students need to abide by the dress code below:

KALENDAR AKADEMIK SESI 2025/2026
(PERINGKAT PENGAJIAN SARJANA MUDA)

SEMESTER I					
Haluansiswa *(Week of Welcome) - WOW*	1	minggu	05.10.2025	-	12.10.2025
Kuliah	6	minggu*	13.10.2025	-	23.11.2025
Cuti Pertengahan Semester I	1	minggu	24.11.2025	-	30.11.2025
Kuliah	8	minggu*	01.12.2025	-	25.01.2026
Minggu Ulangkaji	1	minggu*	26.01.2026	-	01.02.2026
Peperiksaan Akhir Semester I	3	minggu*	02.02.2026	-	22.02.2026
Cuti Semester	2	minggu	23.02.2026	-	08.03.2026
	22	minggu			
SEMESTER II					
Kuliah	7	minggu*	09.03.2026	-	26.04.2026
Cuti Pertengahan Semester II	1	minggu	27.04.2026	-	03.05.2026
Kuliah	7	minggu*	04.05.2026	-	21.06.2026
Minggu Ulangkaji	1	minggu*	22.06.2026	-	28.06.2026
Peperiksaan Akhir Semester II	3	minggu*	29.06.2026	-	19.07.2026
Cuti Semester	4	minggu	20.07.2026	-	16.08.2026
	23	minggu			
SEMESTER KHAS					
Kuliah	7	minggu*	27.07.2026	-	13.09.2026
Peperiksaan Akhir Semester Khas	1	minggu*	14.09.2026	-	20.09.2026
Cuti	1	minggu	21.09.2026		28.09.2026
	9	minggu			

Nota:

(1) Jadal Pendaftaran Kursus dan Peperiksaan, boleh dirujuk di https://umsitsguide.um.edu.my. Maklumat adalah tertakluk kepada pindaan.

(*) Kalendar Akademik telah mengambil kira cuti umum dan cuti perayaan. Maklumat cuti adalah tertakluk kepada perubahan.

Deepavali	**20 Oktober 2025 (Isnin)**
Hari Krismas	25 Disember 2025 (Khamis)
Cuti Tahun Baharu	01 Januari 2026 (Khamis)
Hari Thaipusam	01 Februari 2026 (Ahad)
Hari Wilayah	01 Februari 2026 (Ahad)
Tahun Baharu Cina	17 & 18 Februari 2026 (Selasa & Rabu)
Nuzul Al-Quran	07 Mac 2026 (Sabtu)
Hari Raya Aidilfitri	20 & 21 Mac 2026 (Jumaat & Sabtu)
Hari Pekerja	01 Mei 2026 (Jumaat)
Hari Raya Aidiladha	27 Mei 2026 (Rabu)
Hari Wesak	31 Mei 2026 (Ahad)
Hari Keputeraan Agong	01 Jun 2026 (Isnin)
Awal Muharram	16 Jun 2026 (Selasa)
Maulidur Rasul	25 Ogos 2026 (Selasa)
Hari Kebangsaan	31 Ogos 2026 (Isnin)
Hari Malaysia	16 September 2026 (Rabu)
(*) UM UG iFest 2026	***09 - 11 Jun 2026 (Selasa - Khamis)***

UNDERGRADUATE PROGRAMMES

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

BACHELOR OF BIOMEDICAL SCIENCE

BACHELOR OF NURSING SCIENCE

BACHELOR OF BIOMEDICAL SCIENCE

Message from the Head of Department

On behalf of the Biomedical Science Programme and our dedicated academic staff, I am pleased to extend a heartfelt welcome to all new Biomedical Science students. We are truly eager to begin this journey with you and are confident that your time at this university will be both academically enriching and personally rewarding.

This handbook has been carefully designed to be your trusted guide throughout your studies, especially in your first year. Inside, you will find essential information, practical advice, and helpful resources to support your academic progress as well as your personal development.

The Biomedical Science Programme is a four-year journey that culminates in the award of your degree. Throughout this period, we are committed to delivering high-quality education and comprehensive scientific training. In return, we encourage you to approach your studies with focus, perseverance, and curiosity. Our aim is not only to provide knowledge but also to help you build the analytical, practical, and professional skills necessary for a successful career in biomedical science.

University life extends well beyond lectures and labs. Each class, laboratory posting, and group project offers opportunities to grow not just in science, but also in self-awareness. You will refine your communication skills, strengthen your problem-solving abilities, and benefit from the mentorship of our lecturers, guidance from your seniors, and support from your peers. Equally important, this programme emphasises character development, fostering values such as integrity, resilience and compassion. These qualities are essential both in biomedical science and in life.

We wish you great success as you begin this exciting new chapter. May these years become some of the most rewarding and transformative experiences of your life. I look forward to meeting you in person and witnessing the progress, achievements, and growth you will accomplish during your time with us.

Professor Dr. Chua Kek Heng
Head
Department of Biomedical Science

ACADEMIC STAFF

PROFESSOR

Professor Dr. Chua Kek Heng
BSc (Mal), MSc (Mal), PhD (Mal)
Email: khchua@um.edu.my
Tel: +603-79676607

ASSOCIATE PROFESSOR

Associate Professor Dr. Azlina Ahmad Annuar
BSc (UCL), PhD (Imperial)
Email: azlina_aa@um.edu.my
Tel: +603-79674948

Associate Professor Dr. Ong Kien Chai
BBiomedSci (UKM), PhD (Mal)
Email: kcong@um.edu.my
Tel: +603-79674799

ASSOCIATE PROFESSOR

Associate Professor Dr. Anwar Norazit
BBiomedSc (Mal), MMedSc (Mal),
PhD (Griffith)
Email: anwar.norazit@um.edu.my
Tel: +603-7967660

Associate Professor Dr. Suzita Mohd Noor
BBiomedSc (Mal), MMedSc (Mal), PhD (Deakin)
Email: suzita@um.edu.my
Tel: +603-79674901

ASSOCIATE PROFESSOR

Associate Professor Dr. Puah Suat Moi
BSc (Mal), MMedSc (Mal), PhD (Mal)
Email: suatmoi@um.edu.my
Tel: +603-79677511

SENIOR LECTURER

Dr. Rozaida Poh Yuen Ying
BSc (Mal), MMedSc (Mal), PhD (Mal)
Email: rozaiday@um.edu.my
Tel: +603-79676611

Dr. Nur'Ain Salehen
BSc (Bradford), MSc (Leicester), PhD (Leicester)
Email: nurain_36@um.edu.my
Tel: +603-79674902

SENIOR LECTURER

Dr. Chai Hwa Chia
BBiomedSc (Mal), MMedSc (Mal), PhD (Monash)
Email: hccha18@um.edu.my
Tel: +603-7967522

Dr. Kee Boon Pin
BBiomedSc (Mal), PhD (Mal)
Email: bpkee@um.edu.my
Tel: +603-79676601

SENIOR LECTURER

Dr. Tan Soon Hao
BSc (UTAR), PhD (Mal)
Email: tansoonhao@um.edu.my
Tel: +603-79676654

Dr. Kamariah Ibrahim
BBiomedSc (Mal), MMedSc (Mal), PhD (UKM)
Email: kamariahibrahim2106@um.edu.my
Tel: +603-79676654

SENIOR LECTURER

Dr. Bavani Arumugam
BSc (Mal), MSc (Mal), PhD (Mal)
Email: bavani@um.edu.my
Tel: +603-79674903

Dr. Tan Kim Kee
BBiomedSc (Mal), PhD (Mal)
Email: kimkee@um.edu.my
Tel: +603-79676605

SENIOR LECTURER

Dr. Hasmawati Yahaya
BSc (UK), PhD (Mal)
Email: hasmy@um.edu.my
Tel: +603-79676670

Dr. Tiong Vunjia
BSc (Mal), MBiotech (Mal), PhD (Mal)
Email: evationg@um.edu.my
Tel: +603-79676605

Administrative/Teaching & Learning Support Staff

SCIENCE OFFICER

Pn. Siti Nurul'ashikin Binti Sabaruddin
Email: ashikin85@um.edu.my
Tel: +603-79677507

ASSISTANT SCIENCE OFFICERS

Cik Noor Haswani Binti Hamidy
Email: haswanihamidy@um.edu.my
Tel: +603-79677507

Pn. Noor Khairina Binti Hashim
Email: khairinahashim@um.edu.my
Tel: +603-79677507

MEDICAL LAB TECHNOLOGISTS

Pn. Jauhar Lisa Binti Junaidi
Email: lisa@um.edu.my
Tel: +603-79674949

Pn. Siti Aisha Binti Hassan
Email: aisha1@um.edu.my
Tel: +603-79674949

Pn. Norhayati Binti Md. Arifin
Email: yatie87@um.edu.my
Tel: +603-79674949

Pn. Norul Ezzah Binti Ismail
Email: ezzah87@um.edu.my
Tel: +603-79676603

Cik Nur Wahida Binti Abdul Rahman
Email: nurwahida@um.edu.my
Tel: +603-79674949

Cik Noor Faten Binti Dollah
Email: faten@um.edu.my
Tel: +603-79676603

ADMINISTRATIVE ASSISTANTS

Pn. Nur Syuhada Binti Mat Sodo
Email: nur_syuhada@um.edu.my
Tel:+603-79676616

En. Mohamad Iskandar Bin Ismail
Email: is21@um.edu.my
Tel:+603-7966605

OPERATIONAL ASSISTANT

En. Mohd Zamri Bin Hasin
Email: mohdzamri@um.edu.my
Tel:+603-79676605

INTRODUCTION

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

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

SELF-DIRECTED LEARNING

'In its broadest meaning, self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulation learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes'.
(Knowles, M. (1975). Self-Directed Learning. Chicago: Follet. p.18)

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

Ownership of Learning

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

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

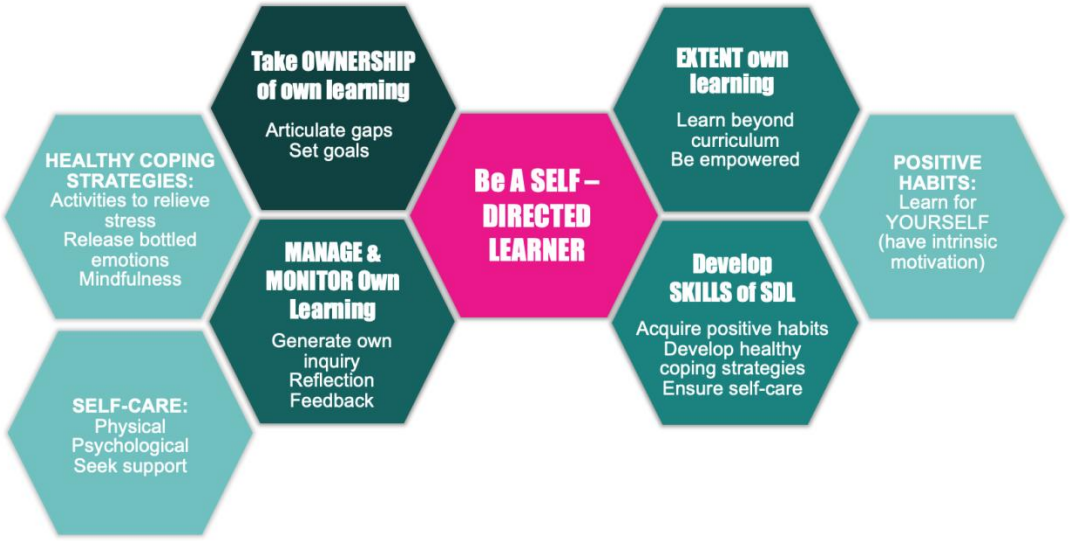


Figure 1: Training guide to become a Self-Directed Learner

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

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 GOAL

The Programme is designed to produce graduates who are laboratory-focused and technically proficient. Graduates will be equipped to meet the growing demand for skilled professionals in Biomedical Science—an evolving and globally expanding discipline—while adhering to national regulatory and professional requirements.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1 Graduates demonstrate and apply knowledge and skills in health and biomedical science-related fields.
PEO2 Graduates engage in life-long learning pursuits related to health and biomedical science.
PEO3 Graduates contribute to the promotion of health practices for the wellbeing of society.

PROGRAMME LEARNING OUTCOMES (PLO)

At the end of the 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 academic year consists of three semesters. Two are normal semesters and one is a special semester.

Each normal semester consists of:

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

The special semester consists of 8 weeks of lectures and examination. Biomedical Science Programme spans 4 years comprising 8 normal semesters.

Each student is given 3 weeks off within the 2 normal semesters.

Courses offered are categorized under:

I. University Courses
II. Faculty Courses (Core and Electives)
III. Student Holistic Empowerment courses

Students are required to register and pass all 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.

PROGRAMME STRUCTURE

1. Malaysian Students:

Course Level	Course Name		Credits
University Courses	GIG1012	Philosophy and Current Issues *Falsafah dan Isu Semasa (FIS)*	2
	GIG1013	Appreciation of Ethics and Civilisations *Penghayatan Etika dan Peradaban (PEP)*	2
	GIG1003	Basic Entrepreneurship Enculturation *Asas Pembudayaan Keusahawanan (APK)*	2
	GIG1016	Integrity and Anti-Corruption *Integriti dan Anti-Rasuah (KIAR)*	2
	GLTXXXX	English Communication/Foreign Language# *Bahasa Inggeris Komunikasi/Bahasa Asing#*	4
	GKXXXXX	Co-Curriculum Course *Kursus Ko-Kurikulum*	2
	SHE	Student Holistic Empowerment (SHE) ¥ *Pemerkasaan Holistik Pelajar* ¥	6
		Total	20
Faculty Courses **Core Courses**	Basic Module Including Basic Sciences *Modul Asas Termasuk Sains Asas*		22
	Professional Module *Modul Profesional*		76
	Industrial Training *Latihan Industri*		9
Elective Course	Elective Courses* *Kursus Elektif**		9
		Total Credits	**136**

GLT Courses: selection depends on the student's MUET/IELTS/TOFEL result.
* Biomedical Science Elective Courses: select at least 3 of the 8 elective courses offered.
¥ SHE Courses: select at least 3 of the SHE courses offered.

PROGRAMME STRUCTURE

2. International Students:

Course Level	Course Name		Credits
University Courses	GLT1049	Malay Language Communication	2
	GIG1013	Appreciation of Ethics and Civilisations	2
	GIG1003	Basic Entrepreneurship Enculturation	2
	GIG1016	Integrity and Anti-Corruption (KIAR)	2
	GLTXXXX	English Communication/Foreign Language#	4
	GKXXXXX	Co-Curriculum Course	2
	SHE	Student Holistic Empowerment (SHE) ɣ	6
		Total	20
Faculty Courses **Core Courses**	Basic Module Including Basic Sciences		22
	Professional Module		76
	Industrial Training		9
Elective Course	Elective Courses*		9
		Total Credits	**136**

GLT Courses: selection depends on the student's MUET/IELTS/TOFEL result.
* Biomedical Science Elective Courses: select at least 3 of the 8 elective courses offered.
ɣ SHE Courses: select at least 3 of the SHE courses offered.

ENGLISH COMMUNICATION PROGRAMME (UNIVERSITY COURSES) *(KURSUS BAHASA INGGERIS KOMUNIKASI - KURSUS UNIVERSITI)* *LIST OF COURSES TO BE COMPLETED BY ALL STUDENTS (NEW COHORT)*			
DESCRIPTION	**PATH 2**	**PATH 3**	**PATH 4**
English Language Proficiency during Admission	• **MUET Band 3 & 3.5 (2021)** • **IELTS Band 4.5 – 5.0** • **TOEFL Internet – Based Test (53 – 64)**	• **MUET Band 4 & 4.5 (2021)** • **IELTS Band 5.5 – 6.0** • **TOEFL Internet – Based Test (65 – 78)**	• **MUET Band 5 & 5+ (2021)** • **IELTS Band 6.5 – 9.0** • **TOEFL Internet – Based Test (79 – 120)**
Total Credits to Complete	4 Credits	4 Credits	4 Credits
Modules to Register	**GLT 1021 – Proficiency in English II** **AND** **GLT1022 – Speak Up** **or** **GLT1023 – Effective Workplace Writing**	**GLT 1024 – Proficiency in English III** **AND** **GLT1025 – Effective Oral Communication** **or** **GLT1026 – Writing at the Workplace**	**GLT 1024 – Advanced Oral Communication*** **and/or** **GLT1028 – Advanced Business Writing*** **and/or** **Foreign Language** ***(Students can only register for one course per semester)**

Notes: ** These courses have pre-requisites and students can only register for them after obtaining a PASS in the compulsory course as stipulated in the respective PATH
** *Kursus ini mempunyai Pra Syarat dan hanya boleh didaftar selepas pelajar LULUS kursus WAJIB mengikut Path yang ditetapkan.*

COURSE STRUCTURE

Year 1
Semester I

Category	Course Code	Course Name	Credits
University Courses	GIG1003	Basic of Entrepreneurship Culture **(M)**	2
	GLT1049	Malay Language Communication **(I)**	2
	GLTXXXX	English Language Communication	2
Core Courses	MIC1007	Biochemistry	4
	MIC1008	Genetics and Developmental Biology	3
	MIC1009	Human Body System I	3
	MIC1010	Biomedical Science Techniques	3
	MIC1011	Biosafety and Biosecurity	3
		Total Credits	**20**

(M): Malaysian (I): International Students

*For English Language Module, please refer to page 45.

Semester II

Category	Course Code	Course Name	Credits
University Courses	GIG1012	Philosophy and Current Issues	2
	GIG1016	Integrity and Anti-Corruption (KIAR)	2
	XXXXX	SHE ɣ	2
Core Courses	MIC1012	Medical Microbiology	3
	MIC1013	Human Body System II	3
	MIC1014	Immunology	3
	MIC1015	Histological Techniques for Biomedical Science	3
	MIC1016	Parasitology and Entomology	3
		Total Credits	**21**

ɣ For University Elective Courses: select 1 of the SHE courses offered by the university. Complete list of courses offered are available on the CITRA website (https://citra.um.edu.my/Highlight/SHE%20Courses%20Guidebook.pdf).

Year 2
Semester I

Category	Course Code	Course Name	Credits
University Courses	GIG1013	Appreciation of Ethics and Civilisations	2
	GLTXXXX	English for Communication Programme	2
	GKXXXXX	Co-Curriculum Course	2
Core Courses	MIC2001	Genomics and Gene Expression	3
	MIC2004	Principles in Pharmacology and Toxicology	3
	MIC2017	Haematology	3
	MIC2018	Phlebotomy	3
	MIC2027	Human Pathology	4
		Total Credits	**22**

*For English Language Module, please refer to page 45.

Semester II

Category	Course Code	Course Name	Credits
University 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
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
Semester I

Category	Course Code	Course Name	Credits
University Courses	XXXXX	SHE ¥	2
	XXXXX	SHE ¥	2
Core Courses	MIC4001	Research Design in Biomedical Science	6
	MIC4012	Critical Discourse Analysis and Case Studies	4
		Total Credits	**14**

¥ For University Elective Courses: select 1 of the SHE courses offered by the university. Complete list of courses offered are available on the CITRA website (https://citra.um.edu.my/Highlight/SHE%20Courses%20Guidebook.pdf).

Semester II

Category	Course Code	Course Name	Credits
Core Courses	MID4005	Research in Biomedical Science	6
	MID4013	Advances in Biomedical Science	4
		Total Credits	**10**

MIC1007: Biochemistry (Core: 4 credits)

Learning Outcomes:

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Bavani Arumugam
bavani@um.edu.my
03-79674903

Course Assessment

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

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

Learning Outcomes:

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

Course Synopsis:

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

Reference Texts:

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

Course Coordinator

Associate Professor Dr. Suzita Mohd Noor
suzita@um.edu.my
03-79674901

Course Assessment

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

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

Learning Outcomes:

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

Course Synopsis:

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

Reference Texts:

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

Course Coordinator

Dr. Tan Soon Hao
tansoonhao@um.edu.my
03-79676654

Course Assessment

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

MIC1010: Biomedical Science Techniques (Core: 3 credits)

Learning Outcomes:

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

Course Synopsis:

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

Reference Texts:

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

Course Coordinator
Associate Professor Dr. Anwar Norazit
anwar.norazit@um.edu.my
03-79676604

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

MIC1011: Biosafety and Biosecurity (Core: 3 credits)

Learning Outcomes:

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

Course Synopsis:

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

Reference Texts:

1. World Health Organization (2020). Laboratory Biosafety Manual (4th edition).
2. National Institutes of Health (2010). Biosafety in Microbiological and Biomedical Laboratories (6th edition)
3. Ministry of Health Malaysia (2015). Malaysia Laboratory Biosafety and Biosecurity Policy and Guidelines (1st edition)
4. e-learning Resources (uploaded onto SPeCTRUM)

Course Coordinator

Associate Professor Dr. Cindy Teh Shuan Ju
cindysjteh@um.edu.my
03 – 7967 6674

Course Assessment

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

MIC1012: Medical Microbiology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Puah Suat Moi
suatmoi@um.edu.my
03-79677511

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Tan Soon Hao
tansoonhao@um.edu.my
03-79676654

Course Assessment

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

MIC1014: Immunology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. Flajnik, M. F. (2023). Paul's Fundamental Immunology (8th Edition). Wolters Kluwer/Lippincott Williams & Wilkins.
2. Abbas, A. K., Lichtman, A.H & Pillai, S. (2023). Basic Immunology: Functions and Disorders of the Immune System (7th 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. (tiada latest edition)

Course Coordinator

Dr. Nur'Ain Salehen
nurain_36@um.edu.my
03-79674902

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Tan Soon Hao
tansoonhao@um.edu.my
03-79676654

Course Assessment

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

MIC1016: Parasitology and Entomology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Wahib Mohammed Mohsen Atroosh/ Lecturers from Department of Parasitology
wahib@um.edu.my
03-7967 4753

Course Assessment

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

YEAR 2 SEMESTER I (2026/2027)

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Azlina Ahmad Annuar
azlina_aa@um.edu.my
03-79674948

Course Assessment

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

MIC2027: Human Pathology (Core: 4 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Text

1. Kumar, V., Abbas, A. K., Aster, J. C., & Perkins, J. A. (2018). Robbins Basic Pathology (10th ed.). Elsevier.
2. Kumar, V., Abbas, A. K., Aster, J. C., & Perkins, J. A. (2021) Robbins and Cotran Pathologic Basis of Disease (10th ed.). Elsevier.

Course Coordinator

Dr. Tan Soon Hao
tansoonhao@um.edu.my
03-79676654

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Shamsul Bin Mohd Zain
shamsul@um.edu.my
03-79676685

Course Assessment

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

MIC2017: Haematology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Nur'Ain Salehen
nurain_36@um.edu.my
03-79674902

Course Assessment

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

MIC2018: Phlebotomy (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. McCall, R. E. (2024). Phlebotomy Essentials, Enhanced Edition (8th Edition). Jones & Bartlett Learning.
2. Strasinger, S. K. & Di Lorenzo M. S. (2020). Urinalysis and Body Fluids (7th edition). F.A. Davis Company.

Course Coordinator

Associate Professor Dr. Suzita Mohd Noor
suzita@um.edu.my
03-79674901

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2019: Molecular Biology Techniques (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Professor Dr. Chua Kek Heng
khchua@um.edu.my
03-79676607

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. Celentano, D. D., Szklo, M., & Farag, Y. (2023). Gordis Epidemiology E-Book: Gordis Epidemiology E-Book. Elsevier Health Sciences.
2. Friis, R. H., & Sellers, T. (2020). Epidemiology for public health practice (6th edition). Jones & Bartlett Learning.
3. Aschengrau, A., & Seage, G. R. (2020). Essentials of epidemiology in public health. Jones & Bartlett Publishers.
4. Webb, P., Bain, C., & Page, A. (2020). Essential epidemiology: an introduction for students and health professionals. Cambridge University Press.

Course Coordinator

Dr. Kee Boon Pin
bpkee@um.edu.my
03-79676601

Course Assessment

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

MIC2021: Biomedical Ethics (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Bavani Arumugam
bavani@um.edu.my
03-79674903

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC2022: Cancer Biology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Chai Hwa Chia
hccha18@um.edu.my
03-79677522

Course Assessment

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

MIC2023: Blood Transfusion Technology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. Shaz, B.H., Hillyer, C. D., Roshal, M. & Abrams, C. S. (2024). Transfusion Medicine and Hemostasis: Clinical and Laboratory Aspects (4th Edition). Elsevier.
2. Howard, P. R. (2021). 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

Dr. Kamariah Ibrahim
kamariahibrahim2106@um.edu.my
03-79676649

Course Assessment

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

MIC2013: Laboratory Animal Science (Elective: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Suzita Mohd Noor
suzita@um.edu.my
03-79674901

Course Assessment

Course will be assessed by Continuous Assessment (100%)

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

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

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

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

Course Coordinator
Associate Professor Dr. Anwar Norazit
anwar.norazit@um.edu.my
03-79676649

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. Pevsner, J. (2015). Bioinformatics and functional genomics. (3rd Edition). John Wiley & Sons.
2. Ramsden, J. (2023). Bioinformatics: An Introduction. Springer Science & Business Media.
3. Liang, K.H. Bioinformatics for biomedical science and clinical applications (2013). Woodhead Publishing.
4. Baxevanis A.D, Bader G.D (Editor), Wishart D.S. (Editor). (2020). Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins (4th Edition). John Wiley & Sons.

Course Coordinator

Dr. Kamariah Ibrahim
kamariahibrahim2106@um.edu.my
03-79676649

Course Assessment

Course will be assessed by Continuous Assessment (100%)

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Cheong Fei Wen
fwcheong18@um.edu.my
03-7967 6618

MIC3008: Chemical Pathology (Core: 4 credits)

Learning Outcomes

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

Course Synopsis

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

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

Reference Texts

1. Rifai, N., Chiu, R.W.K., Young, I., & Wittwer, C.T. (2023). Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics (9th Edition). Elsevier.
2. Ahmed, N. (2025). Clinical Biochemistry (3rd Edition). Oxford University Press.
3. Al-Balushi, B. & Essa, M. (2019). A Quick Guide for Clinical Biochemistry. Nova Science Pub. Inc.

Course Coordinator

Dr. Rozaida Poh Yuen Ying
rozaiday@um.edu.my
03-79676611

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Anwar Norazit
anwar.norazit@um.edu.my
03-79676604

Course Assessment

Course will be assessed by Continuous Assessment (100%)

MIC3014: Advanced Medical Microbiology (Core: 3 credits)

Learning Outcomes

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

Course synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Wong Won Fen
wonfen@um.edu.my
03-79676660

MIC3015: Laboratory Management (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts:

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

Course Coordinator

Dr. Nur'Ain Salehen
nurain_36@um.edu.my
03-79674902

Course Assessment

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

MIC3016: Anatomic Pathology (Core: 3 credits)

Learning Outcomes

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

Course Synopsis

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

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Ong Kien Chai
kcong@um.edu.my
03-79674799

Course Assessment

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

MIC3017: Neuroscience (Elective: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Azlina Ahmad Annuar
azlina_aa@um.edu.my
03-79674948

Course Assessment

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

MIC3018: Recombinant DNA Technology (Elective: 3 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. Brown, T. A. (2021) Gene cloning and DNA analysis (8th edition). Blackwell Publishing.
2. Glick, B. R., & Patten, C. L. (2022). Molecular biotechnology: principles and applications of recombinant DNA. John Wiley & Sons.

Course Coordinator

Dr. Kee Boon Pin
bpkee@um.edu.my
03-79676601

Course Assessment

Course will be assessed by Continuous Assessment (100%)

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr. Muhammad Farid Nazer bin Muhammad Faruqu
faridnazer@um.edu.my
03-79675720

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Dr Tan Tiong Kai
tantk@um.edu.my
03-79675732

Course Assessment

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

YEAR 3 SEMESTER II (2027/2028)

MIC3021: Industrial Training (Core: 9 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Texts

Not Available

Course Coordinator

Associate Professor Dr. Ong Kien Chai
kcong@um.edu.my
03-79674799

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

1. O'Leary, Z. (2025). The Essential Guide to Doing Your Research Project. (5th edition). SAGE Publications Ltd.
2. Robson, C. (2016). How to do a research project: A guide for undergraduate students. (2nd edition). Wiley-Blackwell.

Course Coordinator

Dr. Kamariah Ibrahim
kamariahibrahim2106@um.edu.my
03-79676649

Course Assessment

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

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

Not Available

Course Coordinator

Dr. Hasmawati Yahaya
hasmy@um.edu.my
03-79676670

Course Assessment

Course will be assessed by Continuous Assessment (100%)

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

Learning Outcomes

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

Course Synopsis

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

Reference Texts

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

Course Coordinator

Associate Professor Dr. Azlina Ahmad Annuar
azlina_aa@um.edu.my
03-79674948

Course Assessment

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

MIC4013 Advances in Biomedical Science (Core: 4 credits)

Learning Outcomes

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

Course Synopsis

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

Reference Text

Scientific publications, newspaper articles, scientific magazines, online resources

Course Coordinator

Dr. Tan Kim Kee
kimkee@um.edu.my
03-79676605

Course Assessment

Course will be assessed by Continuous Assessment (100%)

Editors:

Dr. Rozaida Poh Yuen Ying

Associate Professor Dr. Suzita Mohd Noor

Dr. Kamariah Ibrahim

Puan Siti Aisha Hassan