



INTERNATIONAL MEDICAL UNIVERSITY
MALAYSIA

MEDICAL BIOTECHNOLOGY

SCHOOL OF
HEALTH SCIENCES

2019



What Is IMU's Medical Biotechnology Programme About?

Overview

Even though you may not be aware of this Biological discipline in secondary or high schools in Malaysia, medical biotechnology has been in existence for centuries. From the early days of diseases where medicine alone could not save dying people from very simple bacteria infections, medical biotechnology has grown out of necessity to save human lives. Medical Biotechnology is a subset of biotechnology that teaches us how to use all living organisms to come up with products to help us live long and more productive lives.

Because of the medical biotechnological discoveries, we have benefitted from these amazing discoveries; from Edward Jenner who created the world's first vaccination for small pox, to the use of contact lenses to non-invasively monitor blood glucose in diabetic patients, and up to today where scientists have created: biotechnology software to identify human faces with DNA left behind at crime scenes as well as wearable tattoos to monitor our important body functions by sending the information directly to the smart phones of our doctors. All the information from science subjects that you have studied in secondary and high schools will be used in Medical Biotechnology classes such as Forensic Science, Cancer Biology, Biopharming, Medical Microbiology & Parasitology and Cell & Molecular Biology.

Medical biotechnology students at IMU will also learn how to contribute towards developing beneficial products to prevent and treat human diseases, learn how to communicate your findings to the general public and eventually to market your own biotechnology products and set up your own companies.

Amongst the teaching methodologies conducted in the program include: face-to-face lectures, laboratory practicals, small group teaching (problem based learning and tutorials), workshops, computer-aided learning (CAL), seminars, presentations, industrial visits, video reviews, internships, guided reading and portfolio as well as original and independent research work. As preparation for the workplace/internship, in year 3, the students will participate in peer-review feedback as part of enhancing communication skills.

Those joining the Medical Biotechnology programme have the option to complete the entire 3-year programme in IMU or credit transfer to one of our partner universities in Australia. Students will receive academic credits for the subjects they have successfully completed in IMU and use these towards the completion of their degree. In addition, IMU's collaboration with Bioeconomy Corporation in the establishment of the Graduate Employability, Adaptability and Reshaping (GEAR) Programme whereby IMU students participate in a series of workshops designed to enhance their interactive abilities, promote professional attitudes and develop their strength of purpose in preparation for the real-workplace.

DEGREE / DURATION

**Bachelor of Science (Hons)
Medical Biotechnology (IMU)**

— 3 years

Degree from partner university

— 3 years

COMMENCEMENT

July and September

PARTNER UNIVERSITY

AUSTRALIA



A Word from the Programme Director

“The robust curriculum of Medical Biotechnology in IMU teaches and prepares the students to apply current biotechnology techniques in real-world settings, in particular, during industrial training in biotechnology companies, government agencies and international institutions. They will also learn how to use their communication, problem-solving and team-working skills in modules which incorporate presentations, mock interviews, entrepreneurship and final year research projects. Our dedicated and passionate faculty with vast experience in biotechnology are ready to provide students a rigorous training in biotechnology and prepare students for successful careers within the healthcare and biotechnology industry.”

DR WONG CHIEW YEN - Lecturer & Programme Director
BSc (Hons) (UM), PhD (UM)

How Does the Programme Work?

Medical Biotechnology Programme Structure

MPU SHORT SEMESTER

MPU U1 (2 compulsory modules)
Hubungan Etnik and Tamadun Islam dan Tamadun Asia OR

Pengajian Malaysia 3 and Bahasa Melayu Komunikasi 2

MPU U3 (Intro to Media Literacy or; History of Health Professionals or; Science, Fictions, Horror and Fantasy or; Survey of Asian Literature)

SEMESTER

1

Basic Mathematics and Statistics

General Chemistry

Fundamentals of Biological Sciences & Genetics

Human Biology

Organic Chemistry 1

Diversity of Life

MPU U2 (English for Health Sciences)

SEMESTER

2

General Pharmacology

Physical Chemistry

Organic Chemistry 2

IT for Biotechnologists

Physics of Instrumentation

Medical Microbiology & Parasitology

Instrumentation, Biosafety & Standardisation

SEMESTER

3

Natural Products for Health

Analytical Chemistry for Biotechnologists 1

Cell & Molecular Biology

Pathology for Biotechnologists

An Introduction to Bioinformatics

Applied Biochemistry

Applied Microbiology & Parasitology

SEMESTER

4

Immunology

Analytical Chemistry for Biotechnologists 2

Utilisation of Biological Resources

Cell & Tissue Culture Techniques

Genomics & Molecular Diagnostics

Concepts of Human Genetics

Fundamental of Structural Biology

MPU U4 Social Responsibility

SEMESTER

5

Bioprocess Technology

Biopharming: Harvesting Therapeutics

Enterprise Management

Forensic Science

Cancer Biotechnology

Toxicology & Toxinology

Communication Skills & Etiquette

Selective: Neurobiology

Selective: Introduction to Traditional Chinese Medicine

SEMESTER

6

Research Methodology

Medical Biotechnology Research Projects

Current Trends in Medical Biotechnology

Applied Biotechniques in Biotechnology & Community Health

Legal, Ethical & Social Aspects of Biotechnology

SHORT SEMESTER

Biotechnology Internship

The curriculum is reviewed periodically and is subject to change.

The MPU modules are compulsory modules imposed by Ministry of Higher Education under the Private Higher Educational Institutions Act 1996 (Act 555). All students must take these modules and pass as a prerequisite for the award of the degree.

Assessment

Various assessment tools are used to monitor the quality and competency of the students. Students are assessed through class tests, practical reports, workshops, portfolios, project, presentations, dissertations and end-of-semester examinations. The students' laboratory skills and competencies, two key aspects which are invaluable to a medical biotechnologist, will be assessed and evaluated through Objective Structured Laboratory Examination (OSLE).

Career Pathway

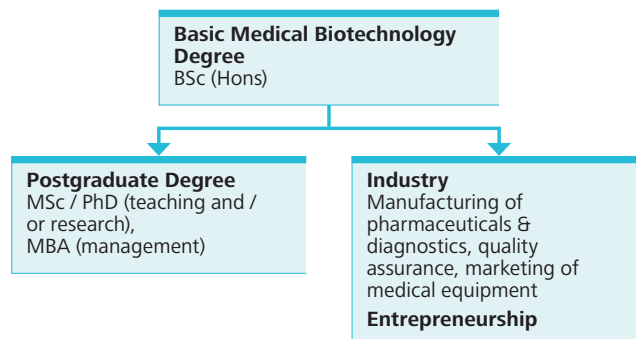
Employment opportunities are readily available in both public and private universities, research organisations, multinational and BioNexus-status companies. BioNexus status is only awarded to international and Malaysian companies which have the capacity to develop technically and nurture biotechnologically skills with the right infrastructure and production capabilities. Since 2005, Bioeconomy Corporation has facilitated the development of 268 BioNexus-status companies in Malaysia and these companies are critically in need of a skilled work force in biotechnology industries.

Additional employment opportunities are also available abroad, for example in neighbouring Singapore, Australasia, Europe and the United States of America.

Some graduates have also pursued postgraduate studies, either at Master or PhD level locally or abroad.

Our graduates have moved onto: post-graduate studies in Europe, Australia and Asia, working in Biotechnology and health-related companies as well as CEOs and Managing Directors of their own start-up companies.

CAREER PATHS FOR MEDICAL BIOTECHNOLOGISTS



AREAS & SCOPE OF WORK OF MEDICAL BIOTECHNOLOGISTS

Key Area	Workscope
Academia	<ul style="list-style-type: none"> Specialist educators and communicators
Healthcare Research	<ul style="list-style-type: none"> Scientists who drive new discoveries Gene therapy and stem cell research Research officer in CRO Therapeutic medicines Diagnostics detection kits for various diseases Innovation of medical devices
Pharmaceutical Industries	<ul style="list-style-type: none"> Executives in bioprocessing and biomanufacturing Quality assurance personnel
Entrepreneurship	<ul style="list-style-type: none"> Entrepreneurs Marketing professionals
Patent Law	<ul style="list-style-type: none"> Intellectual property consultants Regulatory affairs specialists
Forensics	<ul style="list-style-type: none"> DNA fingerprinting for crime solving Paternity identification Toxicology studies
Bioinformatics	<ul style="list-style-type: none"> Drug discovery (molecular docking, medicinal chemistry) Proteomics and genomics study of disease
Food industries	<ul style="list-style-type: none"> New products and processes in food manufacturing Biomolecules with high nutritional values Probiotics for disease improvement

Why Study Medical Biotechnology at IMU?

1

An Established Private Healthcare University

IMU is Malaysia's first and most established private medical and healthcare university with over 26 years of dedicated focus in healthcare education. IMU achieved the SETARA-2017 Tier 6 status (Outstanding) under the Mature University category.

2

Build Your Future Healthcare Professional Network

As IMU offers the widest range of healthcare programmes, our students are fully immersed in a vibrant community of students and practitioners from all healthcare fields. This allows for the development of strong friendship amongst peers that will be the foundation of an extensive healthcare professional network upon graduation.

3

Curriculum Benchmarked to International Standards

IMU's Medical Biotechnology curriculum is aligned with the Malaysian biotechnology priorities and it has been developed to meet high international standards and is accepted by University of Newcastle, Australia for credit transfer into their programme.

4

Exposure to Entrepreneurship

With enterprise management as part of the curriculum, students will be able to have a better understanding of biotechnology-related business matters which can transform their future careers.

5

Well-Established Rapport with Biotechnology-Based Industries and the Bioeconomy Corporation

IMU works closely with biotechnology-based industries and the bioeconomy corporation for industrial attachments locally or abroad and latest information on the industry.

How Much Does It Cost?

Medical Biotechnology Programme Fees

All fees quoted are in Ringgit Malaysia unless stated otherwise.

FEES OVERVIEW

Fee	Amount (RM)	
	Malaysian Student	International Student
Application Fee	150	500
Registration Fee	850	2,000
Refundable Caution Deposit	1,000	1,000
Tuition Fee	111,000	117,300

- Application fee is payable upon submission of application.
- Registration fee and refundable caution deposit are payable upon acceptance of the offer letter issued by the IMU Admissions Office.
- As stipulated by Malaysian Ministry of Higher Education, international students will have to pay Student Visa Application fee of RM1,000 and Medical Health Check fee of RM250 and Visa endorsement fee (depending on nationality) upon registration.
- International students will also be required to pay Student Visa Renewal Administrative fee of RM140/year and Medical Health Check fee of RM250/year.
- Students must adhere to the "Policy on Payment of Fees".
- All students are required to pay Student Association Fees of RM40 per semester.

FEES BY PROGRAMME ROUTES

Programme Route	Total Duration (years)		At International Medical University (IMU)						At Partner University (PU)				At IMU + PU	
			Years	Total Semesters	Tuition Fee				Years	Total Semesters	Tuition Fee *		Total Tuition Fees **	
					Per Semester		Total				Per Year	Total		
					Malaysian Student	International Student	Malaysian Student	International Student					Malaysian / International Student	Malaysian / International Student
Bachelor of Science (Hons) Medical Biotechnology (IMU)	3	3	6	18,500	19,550	111,000	117,300	–	–	–	–	–	–	
Credit Transfer to University of Newcastle Bachelor in Biotechnology	3	1½	3	18,500	19,550	55,500	58,650	1½	3	A\$33,335	A\$54,503	219,880	223,030	

Note

* Current estimates only.

** Based on exchange rates: A\$1 ≈ RM3.016

• Tuition and ancillary fees at partner universities overseas are subject to annual increases.

• All fees are accurate at time of print. For latest fees and information, please go to www.imu.edu.my.

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Programmes at IMU

Pre-University

Foundation in Science
KPT/JPT(R/010/3/0186)09/2023

Undergraduate

Medicine
KPT/JPT(R2/721/6/0033)09/2026

Psychology
KPT/JPT(R2/311/6/0013)09/2022

Dentistry
KPT/JPT(R2/724/6/0010)01/2023

Pharmacy
KPT/JPT(R2/727/6/0050)09/2026

Pharmaceutical Chemistry
KPT/JPT(R2/442/6/0003)01/2023

Dietetics with Nutrition
KPT/JPT(R2/726/6/0021)09/2022

Nutrition
KPT/JPT(R/726/6/0011)06/2022

Biomedical Science
KPT/JPT(R2/421/6/0011)09/2022

Medical Biotechnology
KPT/JPT(R2/545/6/0014)09/2022

Chiropractic
KPT/JPT(R/726/6/0054)08/2026

Chinese Medicine
KPT/JPT(R/721/6/0059)01/2020

Nursing
KPT/JPT(R/723/6/0125)04/2020

Nursing Science
(for registered nurses)
KPT/JPT(R/723/6/0101)01/2019

Postgraduate

Acupuncture (MSc)
KPT/JPT(N/721/7/0071)03/2022

Analytical & Pharmaceutical
Chemistry (MSc)
KPT/JPT(R-CDL/442/7/0001)01/2022

Business Administration in
Healthcare Management
(Postgraduate Certificate/Master)
KPT/JPT(N/345/7/1082)9/2023
KPT/JPT(N/345/7/1085)10/2023

Diabetes Management & Education
(Postgraduate Diploma)
KPT/JPT(N/726/7/0030)02/2023

Health Professions Education (HPE)
(Postgraduate Certificate/
Postgraduate Diploma/Master)
KPM/JPT(N/145/7/0066)09/2020
KPM/JPT(N/145/7/0064)09/2020
KPM/JPT(N/145/7/0070)09/2020

Implant Dentistry (Postgraduate Diploma)
KPT/JPT(N/724/7/0019)06/2021

Molecular Medicine (MSc)
KPT/JPT(R/545/7/0078)07/2022

Pharmacy Practice (Master)
KPT/JPT(N/727/7/0051)03/2019

Public Health (MSc)
KPT/JPT(R/720/7/0077)09/2020

Medical & Health Sciences
(MSc & PhD by Research)
KPT/JPT(R/721/8/0043)01/2020
KPT/JPT(R2/720/7/0049)06/2026



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The IMU has been certified with ISO 9001: 2015 for the provision of Pre-University, Undergraduate and Postgraduate Programmes for the Medical and Healthcare Professions.

Every effort has been made to ensure the accuracy of the information given in this brochure but it is subject to alteration without notice.

The University reserves the right to alter or delete any of the information included at any time and it shall not be bound by any errors or omissions and cannot accept liability in respect thereof.

Please visit www.imu.edu.my for the most up-to-date information.

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