

# PHARMACEUTICAL CHEMISTRY



INTERNATIONAL MEDICAL UNIVERSITY  
MALAYSIA



SCHOOL OF  
PHARMACY  
2020

# What is IMU's Pharmaceutical Chemistry Programme About?



Developing practical and data analysis skills are part of the training in this programme.

## OVERVIEW

The IMU Pharmaceutical Chemistry is completed in 3 years (6 semesters), and is undertaken entirely at IMU, Malaysia. It is the first programme in Malaysia that provides a complete and specialised training in pharmaceutical chemistry. The curriculum begins with foundation sciences in the early phase, and extends to the applied knowledge and skills associated with drug development activities in the later phase. Internship and research are essential components of this programme.

Graduates from the IMU's BSc (Hons) in Pharmaceutical Chemistry will be given credit recognition for certain modules having met the criteria set for certain modules of the Master of Pharmacy programme at the University of Sydney

(USYD) and Curtin University. The full-time Master of Pharmacy programme in these universities is 2 years and is registrable for practice as a pharmacist in Australia, New Zealand and Singapore.

## DEGREE / DURATION

**Bachelor of Science (Hons) in Pharmaceutical Chemistry (IMU) \* — 3 years**

## COMMENCEMENT

**February, July and September**

## PARTNER UNIVERSITIES

### AUSTRALIA



Curtin University



\* This programme is accredited by the Royal Society of Chemistry, UK. It has also received credit recognition from the University of Sydney and Curtin University into their 2-year Master of Pharmacy programme.

## A Word from the Programme Director

“ Through this programme, the students will receive a focused and specialised training on various pharmaceutical drug development techniques. The programme will prepare graduates to be well equipped with contemporary knowledge and skills that are prerequisite for a rewarding career in the pharmaceutical, nutraceutical, cosmetics and toiletries and other chemical industry sectors as well as for a postgraduate study in a relevant field. ”

### **DR CHEONG KOK WHYE**

Senior Lecturer and Programme Director  
BSc (Hons) (UPM), MSc (UPM), PhD (UPM)

# How Does the Programme Work?



Chemistry student learns molecular modeling and drug design in the curriculum.

## PHARMACEUTICAL CHEMISTRY PROGRAMME STRUCTURE

SEMESTER	SEMESTER	SEMESTER	SEMESTER
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Basic Mathematics and Statistics Biological Science and Genetics General Chemistry Human Biology Pharmaceutical Organic Chemistry I MPU-U2 (English for Health Sciences)	Environmental Chemistry and Toxicology Ethics and Laboratory Safety General Pharmacology Pharmaceutical Organic Chemistry II Pharmaceutics I Physical Pharmacy	Basic and Applied Microbiology Introduction to Bioinformatics Pharmaceutical Analysis I Pharmaceutics II Pharmacognosy and Phytochemistry Synthetic Organic Chemistry	Inorganic Chemistry Medicinal Chemistry Pharmaceutical Analysis II Pharmaceutical Biotechnology Pharmaceutics III Polymer Chemistry MPU-U4 (Social Responsibility)
<b>SEMESTER</b>	<b>SEMESTER</b>	<b>SHORT SEMESTER</b>	<b>MPU SEMESTER</b>
<b>5</b>	<b>6</b>	Entrepreneurship Research Methodology Research Project	MPU-U1 MPU-U3
Heterocyclic Chemistry Pharmaceutical Analysis III Pharmaceutical Engineering Pharmaceutics IV Pharmacokinetics Physical Chemistry	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.

MPU Semesters will be offered at the beginning or end of the degree programme to cater for students of various intakes.

## **ASSESSMENT**

Students will be assessed through class tests, practicals, projects, workshops, written reports, logbooks, assignments, portfolios, presentations (oral / poster), dissertation, peer assessments, problem based learning and end-of-semester (EOS) examinations.

## **RECOGNITION OF DEGREE**

The 3-year Pharmaceutical Chemistry degree is accredited by the Royal Society of Chemistry (RSC), United Kingdom, the world's leading chemistry community and professional body committed to advancing excellence in the chemical sciences. This accreditation will improve the visibility and recognition of the IMU Pharmaceutical Chemistry degree and improve the students' chances to go for higher education and obtain employment overseas.

The Pharmaceutical Chemistry graduates from IMU have embarked on various exciting careers after graduating from the programme. Some of them have chosen to pursue their studies in postgraduate degree, at local or overseas universities. These include the Doctor of Philosophy (PhD) and Master degree in areas such as formulation science, drug delivery, polymer chemistry, organic synthesis, pharmaceutical analysis, pharmacy and parasitology, etc.

Most of our graduates are working as analytical chemists in quality control and quality assurance, as research officers in research and development and as product specialists in local pharmaceutical, nutraceutical, cosmetics and other chemical industries. A few of our graduates work as laboratory analysts in biotechnology and life science industry.

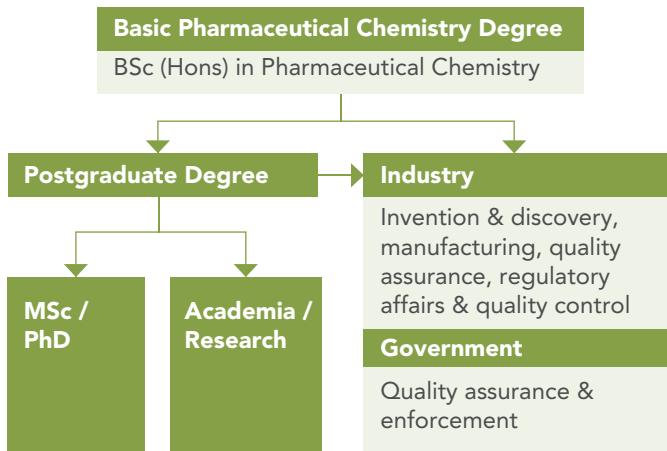
## **CAREER PATHWAY**

Pharmaceutical chemistry is an interdisciplinary science that deals with drug design and synthesis, drug formulation and testing, as well as the delivery of drugs in the body. In view of the increase in the occurrence of existing and new diseases, continuous work to discover new drugs with high therapeutic efficacies but minimal side effects is necessary.

Pharmaceutical chemists play a significant role in this global effort in drug discovery and drug development. The pharmaceutical industry is an important component of the healthcare sector and it is growing locally and globally. The demand for pharmaceutical chemist is high and is expected to grow. Pharmaceutical chemists work together with pharmacists as part of the team to develop or manufacture medicines, in quality control, quality assurance, distribution, sales and marketing of medicines. In addition they can also work in other chemical industries.

# How Does the Programme Work?

## CAREER PATHS FOR PHARMACEUTICAL CHEMISTS



## AREAS & SCOPE OF WORK OF PHARMACEUTICAL CHEMISTS

KEY AREA	WORKSCOPE
Pharmaceutical	Research & development, manufacturing, quality control, quality assurance, regulatory affairs, sales & marketing, clinical trial coordinators
Nutraceutical	Research & development, manufacturing, quality control, quality assurance, sales & marketing
Cosmetics & toiletries	Research & development, manufacturing, quality control, quality assurance
Chemical	Research & development, manufacturing, quality control, quality assurance, sales & marketing
Food and Biotechnology	Manufacturing, quality control, quality assurance, sales & marketing
Academia	Research project assistants, instructors for undergraduate classes
Government agencies	Quality control, quality assurance, enforcement

# Why Study Pharmaceutical Chemistry at IMU?

1

## An Established Private Healthcare University

IMU is Malaysia's first and most established private medical and healthcare university with over 27 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

## First Malaysian University Offering this Undergraduate Programme

IMU is the first university in Malaysia that provides a complete and specialised undergraduate training in pharmaceutical chemistry. The programme is accredited by Malaysian Qualifications Agency (MQA) and recognised by Institut Kimia Malaysia (IKM). Graduates of this programme is eligible to register as a Chemist with IKM.

4

## Curriculum Benchmarked to International Standards

IMU's Pharmaceutical Chemistry curriculum has been developed to meet high international standards and is accepted by University of Sydney and Curtin University for credit exemption in their 2-year Master of Pharmacy programme. The IMU Pharmaceutical Chemistry programme is accredited by the Royal Society of Chemistry (RSC), United Kingdom, the world's leading chemistry community and professional body, which advances excellence in the chemical sciences.

5

## Better Preparation to Become Chemists in the Pharmaceutical Industry and Other Related Industries

With exposure to internship for 16 weeks, students will gain valuable industrial experience and develop their professional network, giving the graduates an advantage in their careers.

# What Our Students Say



“ The programme has been a truly invaluable learning experience for me. Besides knowledge, the well-rounded course structure prepares me as a postgraduate student, by instilling the most in-demand soft skills like critical thinking and communication skills. Helpful lecturers, responsive staff and friendly classmates are what makes my three years' journey in IMU a really memorable one. ”

**Toh Tzi Shin** *Alumni (MSc candidate in Bioinformatics)*

“ I think that the Pharmaceutical Chemistry programme lays the perfect foundation for probably any career line you wish to pursue in the field of pharmaceuticals, be it as a pharmacist, a chemist or a sales representative. While being primarily a chemistry-based degree, it still provided glimpses, sometimes very elaborate, on the multifaceted pharmaceutical industry. Hence, we not only learned about the chemistry or formulation of pharmaceuticals but how to also brand or market them. The teaching and learning methods were also interesting with major focus on hands-on practicals. As students, we participated in lab exercises and lectures but were also given a significant level of independence during peer learning hours. This allowed us to forge our personality as professionals. For me, my degree in Pharmaceutical Chemistry gave me an edge in my academic career. It allowed me to communicate on a similar level as my fellow pharmacist colleagues during my masters and, now, even more so while networking with fellow professionals as a PhD student. In short, the Bachelors in Pharmaceutical Chemistry is a well-grounded, possibly, full-package degree programme. ”

**Marie Emilie Leiticia Hovah** *Alumni  
(Danish Government Scholarship Recipient, PhD candidate in Pharmaceutical/Medicinal Chemistry)*



“ The Pharmaceutical Chemistry programme has equipped me with fundamental knowledge, practical skills as well as soft skills such as multi-tasking and stress management. ”

**Rayce Lim** *Alumni (Analytical Chemist in Pharmaceutical Company)*

“ I was able to cope with my tasks at work and I believe one of the most important reasons is the basic knowledge that I learnt during my Pharmaceutical Chemistry degree. I am very grateful on the diversified modules in my degree programme which prepares me with wide knowledge to cater for more opportunities. ”

**Zhang YuXin** *Alumni (R&D Chemist in Cosmeceutical Company)*



# How Much Does it Cost?

## PHARMACEUTICAL CHEMISTRY 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 Education, international students are required to pay Student Visa Application fee of RM2,500 AND personal bond (depending on nationality) upon registration.
- International students will also be required to pay Student Visa Renewal fee every 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	Malaysian Student	International Student
<b>Bachelor of Science (Hons) Pharmaceutical Chemistry (IMU)</b>	3	3	6	18,500	19,550	111,000	117,300	-	-	-	-	-	-
<b>Credit Transfer to University of Sydney</b> Master of Pharmacy (MPharm)	5	3	6	18,500	19,550	111,000	117,300	2	4	A\$49,000	A\$98,000	390,790	397,090
<b>Credit Transfer to Curtin University</b> Master of Pharmacy (MPharm)	5	3	6	18,500	19,550	111,000	117,300	2	4	A\$42,850	A\$85,700	355,674	361,974

#### Note

\* Current estimates only.

\*\* Based on exchange rates: A\$1 ≈ RM2.8550

• 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](http://www imu.edu.my).

## CONTACT US

 start@imu.edu.my

 www imu.edu.my

 IMUMalaysia

 +603 2727 7457

 InternationalMedicalUniversity

## PROGRAMMES AT IMU

### Pre-University

#### Foundation in Science

KPT/JPT(R/010/3/0186)09/2023  
MQA/FA3974

### Undergraduate

#### Biomedical Science

KPT/JPT(R2/421/6/0011)09/2022  
MQA/A8230

#### Dietetics with Nutrition

KPT/JPT(R2/726/6/0021)09/2022  
MQA/A8176

#### Nursing

KPT/JPT(R/723/6/0125)04/2027  
MQA/FA8944

#### Chinese Medicine

KPT/JPT(R2/721/6/0059)01/2027  
MQA/A10260

#### Medical Biotechnology

KPT/JPT(R2/545/6/0014)09/2022  
MQA/A8228

#### Pharmaceutical Chemistry

KPT/JPT(R2/442/6/0003)01/2023  
MQA/A8229

#### Chiropractic

KPT/JPT(R/726/6/0054)08/2026  
MQA/A9294

#### Medicine

KPT/JPT(R2/721/6/0033)09/2026  
MQA/FA6155

#### Pharmacy

KPT/JPT(R2/727/6/0050)09/2026  
MQA/FA8374

#### Dentistry

KPT/JPT(R2/724/6/0010)01/2023  
MQA/FA7026

#### Nutrition

KPT/JPT(R/726/6/0011)06/2022  
MQA/FA1298

#### Psychology

KPT/JPT(R2/311/6/0013)09/2022  
MQA/A8177

### Postgraduate

#### Acupuncture (MSc)

KPT/JPT(N/721/7/0071)03/2022  
MQA/PA8570

#### Diabetes Management & Education (PG Dip)

KPT/JPT(N/726/7/0030)02/2023  
MQA/PA9086

#### Implant Dentistry (PG Dip)

KPT/JPT(N/724/7/0019)06/2021  
MQA/SWA6111

#### Public Health (MSc)

KPT/JPT(R2/720/7/0077)09/2025  
MQA/A10261

#### Analytical & Pharmaceutical Chemistry (MSc)

KPT/JPT(R-CDL/442/7/0001)01/2022  
MQA/FA1191

#### Endodontics (PG Dip)

KPT/JPT(N/724/7/0043)05/2024  
MQA/PSA12162

#### Molecular Medicine (MSc)

KPT/JPT(R/545/7/0078)07/2022  
MQA/FA1299

#### Medical & Health Sciences (MSc & PhD)

KPT/JPT(R2/720/7/0049)06/2026  
MQA/A10618  
KPT/JPT(R2/721/8/0043)01/2027  
MQA/A3767

#### Business Administration in Healthcare Management (PG Cert/PG Dip/Master)

KPT/JPT(N/345/7/1082)9/2023  
MQA/PSA11354  
KPT/JPT(N/345/7/1090)12/2023  
MQA/PSA11355  
KPT/JPT(N/345/7/1085)10/2023  
MQA/PSA11353

#### Health Professions Education (PG Cert/PG Dip/Master)

KPM/JPT(N/145/7/0064)09/2020  
MQA/SWA05162  
KPM/JPT(N/145/7/0066)09/2020  
MQA/PA5163  
KPM/JPT(N/145/7/0070)09/2020  
MQA/PA/5164

#### Pharmacy Practice (Master)

KPT/JPT(R/727/7/0051)03/2024  
MQA/SWA02796

#### Prosthodontics (PG Dip)

KPT/JPT(N/724/7/0042)05/2024  
MQA/PSA12163



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MALAYSIA



### International Medical University

126, Jalan Jalil Perkasa 19, Bukit Jalil 57000 Kuala Lumpur, Malaysia

Tel +603 8656 7228 Fax +603 8656 1018 KP/JPS/5195/US/2, KP/JPS/DFT/US/W03



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