

ANALYTICAL AND PHARMACEUTICAL CHEMISTRY

(MSc)



INTERNATIONAL MEDICAL UNIVERSITY
MALAYSIA



SCHOOL OF
POSTGRADUATE
STUDIES

2020

What is IMU's Analytical and Pharmaceutical Chemistry Programme About?



Apart from hands-on laboratory practical in chemical analysis, computer aided learning sessions enhance your understanding of specific scientific facts and concepts in the field of pharmaceutical drug discovery.

OVERVIEW

The IMU MSc in Analytical and Pharmaceutical Chemistry programme provides graduates with an opportunity to enhance their knowledge and work-ready skills for a career in industry or academia. For students who wish to progress to PhD research, the programme will provide an excellent foundation and pathway for this next level of study.

The programme is also geared to those who want to advance their careers in chemical or pharmaceutical industries and those entering the field from related areas. The modular programme is designed to fit in with full-time employment to help students balance their work commitments with learning.

In the practical and workshop sessions, students will develop a range of transferable technical skills. Practical sessions in the programme includes hands-on high performance liquid chromatography (HPLC) operation, chromatography, spectrometry and spectroscopy techniques and computer-aided drug discovery tools that are used in the industry as well as academia research.

In one of the modules, 'Quality Management and Regulatory Systems' will equip students with the tools and knowledge needed to progress as a regulatory professional and stay ahead of the competition.

Students will undertake an in-dept individual research project under expert guidance in which students will acquire specialist skills.

DEGREE / DURATION

MSc in Analytical and Pharmaceutical Chemistry

Full-time: 1 - 2 years

Part-time: 2 - 6 years

COMMENCEMENT

March and September

DELIVERY MODE

- **Conventional**
- **Open and Distance Learning (ODL)**



ROYAL SOCIETY
OF CHEMISTRY

ACCREDITED
DEGREE

* This programme is accredited by the Royal Society of Chemistry, UK.

A Word from the Programme Director

“ The programme builds on your undergraduate chemistry experience and provides specialised knowledge and practical experience in a wide range of modern analytical techniques. The programme also develops advanced knowledge and skills in pharmaceutical chemistry focusing on various aspects of drug discovery, design and development. As the programme has a unique blend of both analytical and pharmaceutical chemistry disciplines, you will have good opportunities for career progression and job prospects in a range of industries. ”

DR WONG LAI CHUN

Senior Lecturer and Programme Director
BSc (Hons) (UM), MRes (UNN, UK),
PhD (UNN, UK), MRSC, CChem

How Does the Programme Work?

PROGRAMME STRUCTURE

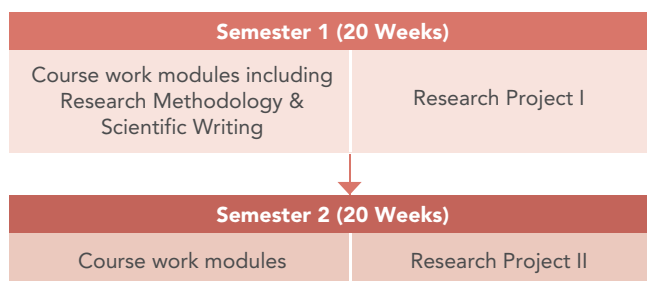
The mixed mode programme consists of two semesters and is a combination of course work (21 credits) and research (22 credits). New semesters commence in March and September each year and each semester comprises 20 weeks.

Face-to-face teaching and learning activities are conducted on weekends.

The Course Modules include:

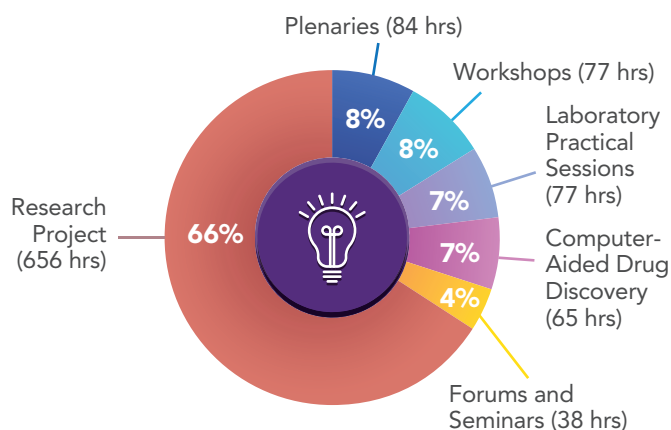
- Modern Analytical Techniques for Qualitative Analysis (4 credits)
- Modern Analytical Techniques for Quantitative Analysis (4 credits)
- Principles of Drug Discovery (4 credits)
- Computational Drug Discovery Techniques (4 credits)
- Quality Management and Regulatory Systems (2 credits)
- Research Methodology and Scientific Writing (3 credits)
- Research Project I (4 credits)
- Research Project II (18 credits)

The curriculum is reviewed periodically and is subject to change.

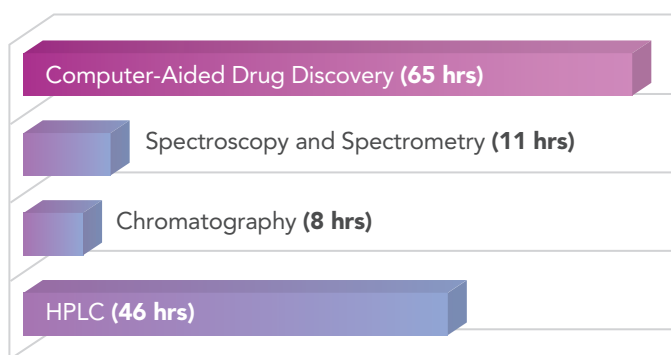


LEARNING AND DELIVERY METHODS

Teaching and learning methods are in line with objectives of programme modules. The research module and student centered learning delivery methods throughout the programme enhances your analytical, critical thinking and problem solving skills, promote your professional development and prepares you for the current challenging work environment.



HOURS OF LABORATORY PRACTICAL AND COMPUTER-AIDED DRUG DISCOVERY SESSIONS



ASSESSMENT

There are no end of semester examinations. Students' progress is evaluated based on continuous assessment including assignments, progress reports, supervisory evaluation and presentations. Research dissertation will be assessed at the end of Semester 2.

MODE OF DELIVERY

Conventional

Teaching is conducted in a blended learning approach whereby students learn via online and face-to-face sessions. Students may conduct their research in campus or at their workplace.

Or

Open and Distance Learning (ODL)

Teaching is conducted via online to provide flexibility and accessibility. The ODL platform contains comprehensive course materials and the platform is used for online discussions. Face-to-face sessions in campus includes laboratory practical sessions. Students may conduct their research in campus or at their workplace.

ENTRY REQUIREMENTS

A Bachelor Degree in related discipline with a minimum cGPA of 2.75 or equivalent, as accepted by the University's Senate; or

A Bachelor Degree in related discipline with a minimum cGPA of 2.50, but not meeting cGPA of 2.75, can be accepted subject to rigorous internal assessment; or

A Bachelor Degree in related discipline not meeting cGPA of 2.50, can be accepted subject to a minimum of 5 years working experience in relevant field.

ENGLISH LANGUAGE REQUIREMENTS

For International Students

1. IELTS : Band score 5.0; or
2. TOEFL (PBT) : Overall score of 410-413; or
3. TOEFL (iBT) : Overall score of 34; or
4. Cambridge English : Advanced (CAE) : Overall score of 160; or
5. Cambridge English : Proficiency (CPE) : Overall score of 180; or
6. Pearson Test of English (PTE) : Overall score of 36

The following categories of students are exempted from the above requirements:

1. International students from countries in which English is the first language.
2. International students who graduated from any Malaysian or other institutions where the curriculum is delivered in English.

Why Study Analytical and 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 28 years of dedicated focus in healthcare education. IMU achieved the SETARA-2017 Tier 6 status (Outstanding) under the Mature University category.

2

Renowned and Highly Experienced Faculty

Students will be taught and supervised by staff who are experts in their field with well-established reputations nationally and internationally. The academic community of IMU pursues and achieves excellence in a wide range of research activities. Many of them present their research findings in international conferences to keep up to date with the latest development in specialised areas. They also publish their findings in international peer-reviewed journals.

3

Curriculum Benchmarked to International Standards

The curriculum has been developed to meet high international standards and stringent Malaysian Qualifications Agency (MQA) standards. The programme is accredited by the Royal Society of Chemistry, UK. The Royal Society of Chemistry is the world's leading chemistry community and the oldest chemical society in the world.

4

Pursue a Master's Degree While Working Full Time

Face-to-face teaching and learning activities are conducted on weekends for convenience of students who have personal or work commitments on weekdays. Students have the option to conduct the research project at their workplace, and the flexibility to choose the optimum number of credits to take each semester to suit their personal, work and study commitments. ODL mode offers additional flexibility to study out of campus.

5

Research Partnerships

Students will benefit from IMU's national and international research collaborations with renowned institutions in areas such as drug discovery, design and development, natural products, drug synthesis, pharmaceutical and biomedical analysis. Students have the opportunity to conduct the research in industry and research institutes.

How Much Does It Cost?

ANALYTICAL AND PHARMACEUTICAL CHEMISTRY PROGRAMME FEES

All fees quoted are in Ringgit Malaysia unless stated otherwise.

All IMU alumni who are self-funding their postgraduate studies and meet the eligibility criteria will be eligible for a 25% bursary.

FEES OVERVIEW

FEE	AMOUNT (RM)	
	Malaysian Student	International Student
Application Fee	150	500
Registration Fee	1,100	3,400
Refundable Caution Deposit	2,000	2,000
Student Association Fee per Semester	40	40
Tuition Fee	43,000	57,500

- 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.

FEE	TOTAL (RM)	
	Malaysian Student	International Student
Fees (Conventional Mode)	43,000	57,500
Fees (ODL)	34,400	34,400

* Students for the 2020 intakes are eligible for a 10% tuition fees bursary.

Learn from Our Experienced Lecturers



**PROF MALLIKARJUNA
RAO PICHIKA**

Professor, Associate Dean (Research and Consultancy), School of Pharmacy
BPharm (India), MPharm (India),
PhD (India), FRSC

Prof Mallikarjuna Rao Pichika is a Professor in Pharmaceutical Chemistry at the School of Pharmacy. He is at present the Associate Dean (Research and Consultancy), School of Pharmacy looking after the research activities in the School and the Head for the Center of Excellence, 'Bioactive Molecules and Drug Delivery', Institute for Research, Development and Innovation (IRDI). Prof Mallikarjuna's research specialisation is in medicinal chemistry with a special emphasis on drug discovery and development. He has authored more than 60 research papers in national and international indexed journals and his publications receive about 1000 citations. He has patents for the development of herbomineral formulations.



A/PROF NG CHEW HEE

Associate Professor, Department
of Pharmaceutical Chemistry
BSc (Hons) (USM), MSc (USM),
PhD (USM), MRSC, MMIC, SBIC

A/Prof Ng Chew Hee has been teaching undergraduate and postgraduate chemistry courses for more than 20 years. He has been awarded more than RM1.8 million of research grants and published more than 70 journal papers. His research areas cover Coordination Chemistry, Biological Inorganic Chemistry, Medicinal Chemistry, application of metallodrugs as anticancer and antiprotozoal agents, nanoparticle-metal complex conjugates, and recently genetic and epigenetic factors affecting the drug resistance/ sensitivity of anticancer metal complexes. He is currently a member of the International Advisory Committee for Asian Biological Inorganic Chemistry Conferences (AsBIC). He is an active member of the Malaysian Institute of Chemistry as member of the Industrial Chemistry Section, Chemistry Education Section and Malaysian Chemistry Quiz Technical Committee (K3M).



A/PROF OOI ING HONG

Associate Professor, Department of
Pharmaceutical Chemistry
BSc (Hons) (UM), MSc (UM),
PhD (UA, Ohio), MACS, MRSC, AMIC

A/Prof Ooi Ing Hong is the former head of department of Pharmaceutical Chemistry, School of Pharmacy. He received the IMU Achievement Award for T&L Innovation for leading the pharmaceutical team in designing and developing the MAPC programme in 2012, which was accredited by MQA with a perpetual status in 2014. He is a member of Joint Technical committee-Institut Kimia Malaysia (IKM) working group for chemistry degree programme standards, and a member of IKM industrial chemistry section. He also serves as a scientific committee of international conferences on nanotechnology: fundamentals and applications. His research interest is on synthesis and characterisation of polymeric materials for biomedical applications.



DR LEE CHOY SIN

Head, Department of
Pharmaceutical Chemistry
BSc (Hons) (UM), PhD (UM)

Dr Lee Choy Sin has 11 years of teaching and postgraduate research supervision experience. Her research expertise is in organic synthesis, polymer chemistry and oleochemistry and her research products include biocompatible and biodegradable polymeric scaffolds, polymer excipients for pharmaceutical formulations and bioactive polymeric reactants for antimicrobial coatings. She has secured numerous national and international research grants, namely Japan Toray Science Fund, ERGS, FRGS, MPOB-GSAS and e-science funds and she has filed 2 patents in Malaysia and regional countries. Dr Lee was awarded The Young Scientist Award 2018 by the Malaysian Oil Scientists' and Technologists' Association (MOSTA). She won two Silver Medals in the International Invention, Innovation & Technology Exhibition (ITEX) under the categories of Materials (2017) and Medical and Health (2019).

Learn from Our Experienced Lecturers



**DR SREENIVASA RAO
SAGINEEDU**

BPharm (India), MPharm (India),
PhD (UPM), CChem, MRSC



DR CHIN SWEE YEE

BSc (Hons) (UMS), MSc (UM),
PhD (UKM)



**DR MURUGESH
KANDASAMY**

BPharm (India), MPharm (India),
PhD (India)



**DR VASUDEVA RAO
AVUPATI**

DPharm (India), BPharm (India),
MPharm (India), PhD (India),
RPh (India)



DR LOW MAY LEE

BSc (Hons) (UPM),
Endeavour Fellow (Monash),
Dual PhD (UPM-UPMC Paris VI)



**DR THIAGARAJAN
MADHESWARAN**

BPharm (India), MPharm (India),
PhD (South Korea)



DR WONG LAI CHUN

BSc (Hons) (UM), MRes (UNN, UK),
PhD (UNN, UK), MRSC, CChem

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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

Chinese Medicine

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

Chiropractic

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

Dentistry

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

Dietetics with Nutrition

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

Medical Biotechnology

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

Medicine

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

Nutrition

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

Nursing

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

Pharmaceutical Chemistry

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

Pharmacy

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

Psychology

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

Postgraduate

Acupuncture (MSc)

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

Analytical & Pharmaceutical Chemistry (MSc)

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

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

Diabetes Management & Education (PG Dip)

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

Endodontics (PG Dip)

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

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

Implant Dentistry (PG Dip)

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

Molecular Medicine (MSc)

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

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

Public Health (MSc)

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

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



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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.

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