ORGANIC CHEMISTRY

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Organic Synthesis, Natural Products (Isolation of Bioactive Compounds)

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Organic Synthesis, Wastewater Treatment, Synthetic Polymer

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USM Universiti Sains Malaysia
APEX
Pusat Pengajian Sains Kimia

POSTGRADUATE Programmes

School of Chemical Sciences
Pusat Pengajian Sains Kimia

2025 Edition

Facilities

The School is equipped with teaching and research laboratories. Existing analytical and characterisation instruments include 500 MHz NMR, ICP-OES, GCMS, LCMS (TOF), DSC/TGA, TOC and GPC, CHN analyser, HPLC, GC, FTIR, UV-Vis, AAS and fluorescence spectrophotometers, electrochemical system, porosimeter, Guoy-Balance, POM and other supporting equipments. The School is also equipped with glass-blowing workshop.

The expertise and facilities available in the School of Chemical Sciences are always tapped by the industries and government agencies in solving their problems. In line with the desire to improve the consultancy services offered by us, the School of Chemical Sciences has taken a proactive step by setting up an Analytical Services and Testing Laboratory (MUPA) in year 2000, to offer more effective services for the industrial sectors.

A. Mixed Mode

MASTER OF SCIENCE IN CHEMICAL INSTRUMENTATION

Courses Offered

KAA 502/4	Atomic Spectroscopy
KAA 503/4	Molecular Spectroscopy
KAA 504/4	Electrochemical Methods
KAA 505/4	Separation Methods
KAA 507/4	Surface and Thermal Analysis
KAA 509/20	Dissertation
KAA 510/2	Quality System and Intellectual Property
KAA 511/2	Research Methodology

Course Structure

Coursework: 20 units **Dissertation:** 20 units

Admission Requirements:

- Bachelor of Science degree from a recognised university.
- An equivalent CGPA of 2.75 and above.
- Candidates with a CGPA between 2.50 – 2.74 with a minimum of one year working experience in the related field.

Duration

Full-time: Min/Max 2/4 semester

Part-time: Min/Max 4/8 semesters

B. Research Mode

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Research areas offered by the School are:

- Analytical Chemistry: Pollution Studies, Chemical Biosensors, Electroanalytical Chemistry, Separation Chemistry, Nanomaterials, Photocatalysis, Conducting Polymers, Environmental Electrochemistry, Water Treatment
- Inorganic Chemistry: Inorganic Polymers, Organometallic Chemistry, Inorganic Synthesis, Coordination Chemistry, Catalysis, Liquid Crystals
- Industrial Chemistry: Material Chemistry, Advanced & Nano Materials, Composite, Hydrogen Storage, Corrosion Chemistry & Coatings, Chemistry in Petroleum Industry, Microbial Fuel Cells, and Polymers
- Organic Chemistry: Organic Synthesis, Natural Products Chemistry, Macrocyclic Chemistry, Liquid Crystal
- Physical Chemistry: Surface Chemistry & Catalysis, Environmental Chemistry, Electroplating/Electroless Plating, Computational Chemistry, Corrosion Chemistry

Admission Requirements:

M.Sc.

- Bachelor of Science degree from a recognised university
- An equivalent CGPA of 2.75 and above.
- Candidates with a CGPA between 2.50 – 2.74 with a minimum of one year working experience in the related field.

Ph.D.

- Candidates for Ph.D. must possess a Master's degree in a related area with a CGPA of 3.00 and above.

Ph.D. Fast-track Programme

- Candidates having Bachelor of Science degree with an equivalent CGPA of 3.67 and above can apply for Ph.D. Fast-track Programme.

Language Requirements for International Student Applications:

- TOEFL minimum score of 40 (iBT)
- TOEFL Essentials (online) minimum 7.5
- IELTS minimum score of 5.0
- MUET minimum score of band 3.5
- PTE Academic minimum 47
- Cambridge English: B1/B2/C1/C2/Linguaskill Online minimum 154

Exemption can be given if:

- English is the candidate's mother tongue or national language, **OR**
- The candidate graduated from an Institution of Higher Learning in which the medium of instruction is English.

Ph.D. CO-TUTELLE UNIVERSITI SAINS MALAYSIA (USM) AND UNIVERSITÉ DE LORRAINE (UL) OR DUAL Ph.D. USM AND NATIONAL TSING HUA UNIVERSITY (NTHU) DEGREE PROGRAMMES

Under these programmes:

- The research will be conducted in Malaysia and France/Taiwan.
- Two Ph.D. are awarded, upon completion of one defence viva-voce.
- The examination committee comprises of Malaysian and French/Taiwanese experts.

Academic Staff

PHYSICAL CHEMISTRY

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