

CHEMISTRY IS THE CENTRAL SCIENCE

We offer two four-year degree programmes that reflect training across all areas of chemistry and the current needs for chemistry in industries and society. You can choose optional courses from other science and arts programmes as a minor programme or you can spend one semester in the industry if you choose to register for an Industrial Training course. You shall spend time in our laboratories which are equipped with basic and advanced instrumentation facilities. You shall also have the opportunity to embark on an extended lab, industrial or overseas placement that will equip you with valuable skills that are desirable to any workplace such as problem-solving, presentation, communication, research, management and leadership. This will empower you to either specialise in a science-related career or branch out to different career horizons, should you choose to do so. If you're inclined towards furthering your studies, our Chemistry degrees open up opportunities for a high-level research career.

VISION

To realise the aspiration of Universiti Sains Malaysia in Transforming Higher Education for a Sustainable Tomorrow.

MISSION

- To produce chemistry graduates who are knowledgeable, highly skilled, well-mannered, and possess excellent work ethics suited for the requirements of the public and industrial sectors.
- To provide chemistry students with quality education.
- To instill awareness among chemistry students towards the welfare of the society.
- To provide modern facilities for chemistry teaching and research.
- To attract excellent students from Malaysia and overseas to study chemistry.

OBJECTIVES

- To provide a broad, balanced, and in depth education in chemistry and related areas at the undergraduate level.
- To develop the students into graduates with theoretical and practical knowledges and the ability to apply the knowledge to employment or further studies in chemistry or other related post graduate programmes.
- To develop students with various skills including practical, social, communication, leadership and entrepreneurship skills.
- To develop students with the ability to assess and solve problems critically, logically and creatively.



Programme Structure

Course Component	Credit Unit Requirement B.Sc. (Hons)	Credit Unit Requirement B.App. Sc. (Hons)
Core (T)	70	72
Elective (E) or Elective (E) & Minor (M)	32	30
University (U)	18	18
Total	120	120

CONTACT

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School of Chemical Sciences
UNIVERSITI SAINS MALAYSIA

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Why study this programme?

You will be dynamically nurtured, respected and referred as chemists who are socially responsible in supporting national and global aspirations in science, technology and innovations for a sustainable tomorrow.

Core Courses

First Year

- Safety and Security for Chemical Sustainability
- General Chemistry Practical I
- General Chemistry Practical II
- Inorganic Chemistry I
- Organic Chemistry I
- Physical Chemistry I
- Analytical Chemistry I

Second Year

- Inorganic Chemistry Practical
- Organic Chemistry Practical
- Physical Chemistry Practical
- Analytical Chemistry Practical I
- Physical Chemistry II
- Analytical Chemistry II
- Inorganic Chemistry II
- Organic Chemistry II

Third Year

- Research Methodology in Chemistry
- Inorganic and Analytical Chemistry Practical
- Physical and Organic Chemistry Practical
- Inorganic Chemistry III
- Organic Chemistry III

Fourth Year

- Chemistry Project or Other Courses from Analytical Chemistry, Industrial Chemistry and Pure Chemistry
- Physical Chemistry III

Course duration
Four years

Entry Requirement

General requirement: SPM or equivalent with credit in Bahasa Malaysia/Bahasa Malaysia July papers and obtained at least Band 2 in the Malaysian University English Test (MUET).

STPM: Passed with at least CGPA 3.00. A minimum grade C (CGPA 2.00) in General Studies and minimum grade B (CGPA 3.00) in Chemistry, Biology/Physics, Mathematics T/Advanced Mathematics.

Matriculation/Foundation: Passed with at least CGPA 3.00 and a minimum grade B (CGPA 3.00) in Chemistry, Mathematics, Physics/Biology.

Diploma or equivalent: Hold a Diploma with at least CGPA 3.00 from recognized institutions in the related area.

You will develop a solid foundation of the theoretical and practical skills, to build knowledge on advanced concepts and contemporary chemistry in later years. You can tailor your studies to reflect your interests, and learn how to pursue your own research. You will have hands-on experience with state-of-the-art scientific instruments and techniques. You will apply chemistry in problem solving and present your findings confidently to your audiences.

What will this programme mean for my future?

Many opportunities offered by this programme will equip you to confidently and skillfully pursue your chosen career. You might work in the industry, academia, government or non-profit organization as chemical engineer, research scientist, patent lawyer, technical writer, entrepreneur or auditor. You can also pursue in higher study after the first degree in chemistry, allowing you to specialize in the area of interest such as analytical, forensic or materials chemistry, and eventually work in a wide range of other specialised roles.

Why study this programme?

You will be dynamically nurtured, respected and referred as analytical chemists who are socially responsible in supporting the national and global aspirations in science, technology and innovations for a sustainable tomorrow.

Core Courses

First Year

- Safety and Security for Chemical Sustainability
- General Chemistry Practical I
- General Chemistry Practical II
- Inorganic Chemistry I
- Organic Chemistry I
- Physical Chemistry I
- Analytical Chemistry I

Second Year

- Organic Chemistry Practical
- Inorganic Chemistry II
- Organic Chemistry II
- Physical Chemistry II

Third Year

- Analytical Practical II
- Separation Methods
- Spectroscopic Methods
- Electroanalytical Methods
- Research Methodology in Chemistry

Fourth Year

- Chemistry Project or Other Courses from Analytical Chemistry, Industrial Chemistry and Pure Chemistry
- Physical Chemistry III
- Environmental Pollution Chemistry

Course duration
Four years

Entry Requirement

General requirement: SPM or equivalent with credit in Bahasa Malaysia/Bahasa Malaysia July papers and obtained at least Band 2 in the Malaysian University English Test (MUET).

STPM: Passed with at least CGPA 3.00. A minimum grade C (CGPA 2.00) in General Studies and Physics. A minimum grade B (CGPA 3.00) in Chemistry and Mathematics T/Advanced Mathematics.

Matriculation/Foundation: Passed with at least CGPA 3.00 and a minimum grade B (CGPA 3.00) in Chemistry, Mathematics and a minimum grade C (CGPA 2.00) in Physics.

Diploma or equivalent: Hold a Diploma with at least CGPA 3.00 from recognized institutions in the related area.

You will develop a solid foundation of the theory and practical skills, building to cover advanced concepts and contemporary issues in analytical chemistry. You can tailor your studies to reflect your interests, and learn how to pursue your own research. You will have hands-on experience with state-of-the-art scientific instruments and techniques. You will learn to use analytical skills in chemistry in problem solving and to present your theories and findings confidently to your audiences.

What will this programme mean for my future?

Many opportunities offered by this programme will equip you to confidently and skillfully pursue your chosen career. You might work as analytical chemist or chemical engineer in various industries such as food, pharmaceutical, medical or chemical industries. You can also pursue postgraduate studies in analytical, forensic or environmental chemistry and eventually work in a more specialized field. You can also work in education or research and development field.

Why study this programme?

You will be nurtured, be referred and respected as industrial chemists who can contribute to the current industrial needs and development of the country in supporting the social, an economic and an environmental well-being of the nation.

Core Courses

First Year

- Safety and Security for Chemical Sustainability
- General Chemistry Practical I
- General Chemistry Practical II
- Inorganic Chemistry I
- Organic Chemistry I
- Physical Chemistry I
- Analytical Chemistry I

Second Year

- Inorganic Chemistry II
- Organic Chemistry II
- Materials Chemistry
- Unit Operations
- Analytical Chemistry Practical I
- Physical Chemistry II
- Analytical Chemistry II

Third Year

- Research Methodology in Chemistry
- Unit Operations Practical
- Polymer Chemistry
- Material Chemistry and Chemical Processing Practical

Fourth Year

- Chemistry Project or Other Courses from Analytical Chemistry, Industrial Chemistry and Pure Chemistry
- Chemical Processing

Course duration
Four years

Entry Requirement

General requirement: SPM or equivalent with credit in Bahasa Malaysia/Bahasa Malaysia July papers and obtained at least Band 2 in the Malaysian University English Test (MUET).

STPM: Passed with at least CGPA 3.00. A minimum grade C (CGPA 2.00) in General Studies and Physics. A minimum grade B (CGPA 3.00) in Chemistry and Mathematics T/Advanced Mathematics.

Matriculation/Foundation: Passed with at least CGPA 3.00 and a minimum grade B (CGPA 3.00) in Chemistry, Mathematics and a minimum grade C (CGPA 2.00) in Physics.

Diploma or equivalent: Hold a Diploma with at least CGPA 3.00 from recognized institutions in the related area.

Students in the Industrial Chemistry programme are trained in general, organic, analytical and physical chemistry. In addition, there are special classes focusing on materials, operational unit, chemical industry, safety issues and chemical processing. The Industrial Chemistry courses also provides excellent gateway into other science-based majors. This programme is designed to give students the improved laboratory skills and analytical abilities that will help them to excel in four-year programmes.

What will this programme mean for my future?

Industrial chemists make use of their broad understanding of chemistry and environmental sustainability in pharmaceutical companies, polymer manufacturing, petrochemical processing, manufacturing industries and food industries. Yet they can also be found in the most unexpected places: like cutting edge research.