

FACULTY OF APPLIED SCIENCES

- BSC (HONS) BIOTECHNOLOGY
- BSC (HONS) FOOD SCIENCE & NUTRITION

ALSO AVAILABLE

- DOCTORATE OF PHILOSOPHY (SCIENCE)
- MSC FOOD SCIENCE WITH BUSINESS MANAGEMENT
- MSC FOOD SCIENCE
- MSC BIOTECHNOLOGY WITH BUSINESS MANAGEMENT
- MSC BIOTECHNOLOGY
- MSC APPLIED SCIENCES, BY RESEARCH



www.ucsiuniversity.edu.my





FACULTY OF APPLIED SCIENCES

Established in 1999, UCSI University's Faculty of Applied Sciences has distinguished itself as a premier faculty that offers Credit Transfer Programmes for Bachelor of Applied Sciences degrees in the fields of Biotechnology and Food Science and Nutrition.

Our Bachelor of Science (Hons) in Biotechnology has the advantage over similar degrees as it offers all-round training in the major areas of Biotechnology, and is also in line with our national agenda to produce more quality scientists by meeting the needs of biotech research, the commercial biotechnology industry and academic institutions.

Our Bachelor of Science (Hons) Food Science and Nutrition programme is uniquely designed to provide students with the combined knowledge of Food Sciences and Nutritional Sciences, integrating the study of the role of nutrients in the human body, the chemical composition, physical, biological and biochemical behaviour of food materials, as well as the study of microorganisms involved in food deterioration, the interaction of food components with one another, and the principles underlying the processing and preparation of foods.

The Faculty of Applied Sciences also prides itself in having purpose-built, state-of-the-art laboratories and equipment, innovative teaching and learning pedagogies as well as highly-qualified and motivated academic staff.

MINIMUM ENTRY REQUIREMENTS

Biotechnology Degree Programme

UCSI Foundation	CGPA of 2.0
STPM	3 principals (C) in Chemistry, Biology & Mathematics / Physics
A-Levels	3 Principals (E) in Chemistry, Biology & Mathematics / Physics
National Matriculation	CGPA of 2.8 (subject list inclusive Chemistry, Biology, Mathematics/Physics)
International Baccalaureate (IB)	Total score of 26/42 (from 6 subjects inclusive of Chemistry, Biology and Mathematics / Physics)
UEC	5 credits inclusive of Chemistry, Biology & Mathematics / Physics and 2 other subjects
Australian Year 12*	Overall 60% score (subject list inclusive of Biology, Chemistry and Mathematics/Physics)
Other Year 12 Equivalent*	Overall 60% score (subject list inclusive of Biology, Chemistry and Mathematics/Physics)
Other relevant diploma programmes*	CGPA of 2.0

**To be reviewed by the University on a case-to-case basis*

Food Science and Nutrition Degree Programme

UCSI Foundation	CGPA of 2.0
STPM	2 principals (C) in Chemistry, Biology & Mathematics / Physics
A-Levels	2 principals (E) in Chemistry, Biology & Mathematics / Physics
National Matriculation	CGPA of 2.8 (subject list inclusive Chemistry, Biology, Mathematics/Physics)
International Baccalaureate (IB)	Total score of 26/42 (from 6 subjects inclusive of Chemistry, Biology and Mathematics / Physics)
UEC	5 credits inclusive of Chemistry, Biology & Mathematics / Physics and 2 other subjects
Australian Year 12*	Overall 60% score (subject list inclusive of Biology, Chemistry and Mathematics/Physics)
Other Year 12 Equivalent*	Overall 60% score (subject list inclusive of Biology, Chemistry and Mathematics/Physics)
Other relevant diploma programmes*	CGPA of 2.75 (subject list inclusive of Chemistry, Biology and Mathematics/ Physics)

**To be reviewed by the University on a case-to-case basis*

Foundation in Science

SPM / O-Level	5 credits (inclusive of Mathematics and 2 pure science subjects)
UEC	4 credits (inclusive of Mathematics and 2 pure sciences subjects)
Other Year 11 equivalent*	Overall average score of 60% (subject list inclusive of Biology, Chemistry and Mathematics/Physics)

English Language Requirements for Foundation and Degree Programme

A distinction (A+, A or A-) in English Language subject at SPM/UEC level; or MUET Band 5; or a score of 213 (computer-based) / 550 (written-based) / 80 (internet-based) in TOEFL; or Band 5.5 in IELTS.

In the event that the English Language Requirements are not met, student may be required to undertake additional English module(s) prior or concurrently with undergraduate programme, based on the University's decision.



INTAKES

January, May & September

COURSES OFFERED

Year 1

- Chemistry 1
- Biology
- Calculus & Analytical Geometry for Applied Sciences
- University Life (MPU-U2)
- Extra-curricular Learning Experience 1 (MPU-U4)
- Human Physiology
- Chemistry 2
- Microbiology
- Structural Biochemistry
- Bioinformatics
- Co-operative Placement 1

Year 2

- Malaysian Experiential Tourism (MPU-U3)/
Business Law – Malaysian Perspective (MPU-U3)
- Biochemistry & Metabolism
- Microbes & Immunology
- Statistics & Its Applications
- Entrepreneurship for Applied Sciences
- Extra-curricular Learning Experience 2 (MPU-U4)
- Research Methodology, Safety & Ethics
- Pharmacology
- Molecular Cell Biology
- Recombinant Technology
- Enzyme Technology
- Co-operative Placement 2

Year 3

- Human Molecular Genetics
- Environmental Biotechnology & Sustainability
- Cell & Tissue Culture
- Biotechnology Research Project 1
- Extra-curricular Learning Experience 3 (MPU-U4)
- Fermentation Technology & Downstream Processing
- Biotechnology Research Project 2
- Bioprocess Engineering
- Cooperative Placement 3
- Biotechnology Research Project 3
- Elective (Choose one)
 - Food Microbiology
 - Fundamentals of Marketing
 - Introduction to Public Speaking

General Courses (MPU) are compulsory for all students.

- U1 – For Malaysian students :
 1. Ethnic Relations
 2. Islamic Civilisation & Asian Civilisation
- For Foreign students:
 1. Malaysian Studies
 2. Communication in Bahasa Melayu 3

All information is correct at the time of printing and UCSI University reserves the right to make amendments without prior notice.

BSC (HONS) BIOTECHNOLOGY

Biotechnology, the fastest growing science-based industry in the world, is widely regarded as the new engine of growth for the global economy. Covering the medical and health care industries, the agricultural and industrial sectors, the environment, and forensics, it encompasses also the applications of technologies like biochemistry, molecular biology, genetic engineering, bioinformatics, and others for the development of new products and processes. In addition, it also includes vaccines and drugs for the treatment or improvement of life-threatening diseases like AIDS, medical diagnostic kits, agricultural products with improved nutritional values and reduced dependence on chemical pesticides, as well as high quality industrial products, cleaner biochemical process with less waste, and DNA fingerprinting for improved criminal investigation.

Designed with the aid of leading members in the biotechnology field, the 3-year programme helps to bridge the gap between industry and academia. The course content is aimed at providing students with a good foundation of knowledge and hands-on practical experience of the different fields of biotechnology for their future careers which include Pharmacology, Physiological Sciences, Metabolic Biochemistry, Molecular Cell Biology, Human Molecular Genetics, Animal and Plant Cell Culture, Microbial Biotechnology, Enzyme Technology, Fermentation Technology and Downstream processing, Bioprocess Engineering and Environmental Biotechnology.

The course aims to produce competent, confident and consummate graduates in the field of Biotechnology who are internationally employable and who are equipped with various valuable transferable skills like presentation techniques, communication skills, exposure to problem solving, teamwork and the use of information technology. In addition, students will be made to realize the ethical issues and the impact of biotechnology on society, as well as trained to be bioentrepreneurs / technopreneurs that would enable them to translate research outcomes into business opportunities.

CAREER OPPORTUNITIES

A biotechnology graduate can readily apply his/her knowledge and expertise in the following areas:

- Research and Development (R&D) in research institutes; universities; agricultural, clinical and forensic laboratories
- Quality control and quality assurance of pharmaceutical, health care and other industrial products
- Clinical research co-ordination in hospitals and pharmaceutical firms
- Bioinformatics Computational Analysis
- Other career opportunities in
 1. Management
 2. Intellectual Property (IP) and Patent Law
 3. Sales and support services for the biotechnology industry, ecology, waste management and environmental pollution control
 4. Venture capitalist business
 5. Biotechnology technopreneurships



BSC (HONS) FOOD SCIENCE AND NUTRITION

Study in Food Science and Nutrition involves various science disciplines such as chemistry, biochemistry, nutrition and engineering to teach students how diet and nutrition affects the health of individuals, and also the technologies for creating new food products, and designing new processes to improve the safety and quality of foods.

A challenging programme, the study begins with an understanding of the biological and physical sciences as a basis for understanding the science of food and nutrition, as well as the relationship between nutrition and health. Students possessing an analytical, inquisitive mind who are interested in applying food science principles to further enhance the health and welfare of mankind, will benefit greatly from this programme.

Designed to provide students with practical "hands-on" experience through a comprehensive and practical curriculum of cutting edge research and studies in food science and nutrition, the curriculum will not only enable students to gain pertinent knowledge and skills to work in the food manufacturing industry, government agencies, colleges and universities, as well as research laboratories, but will also equip them with good interpersonal communication skills and the ability to work in teams to solve multi-disciplinary problems. Under the direction and guidance of qualified professors and academicians, as well as experienced laboratory technologists, students are exposed to a variety of laboratory equipment and skills at the University.

CAREER OPPORTUNITIES

Graduates will be employed in the following areas:

- research and development of products and processes
- supervision of food manufacturing processes
- as food engineering support
- marketing and sales
- product support and promotion
- consulting laboratories
- government organizations

They may be employed as:

- food scientists
- food microbiologists
- flavour chemists
- food safety inspectors
- community and university educators
- corporate health promotion and wellness specialists
- public relations specialists
- nutrition advisor in public health programmes
- weight loss counsellors
- scientific writers
- researchers
- private practice consultants

COURSES OFFERED

Year 1

- Extra-curricular Learning Experience 1 (MPU-U4)
- Chemistry 1
- Calculus & Analytical Geometry for Applied Sciences
- Human Physiology
- University Life (MPU-U2)
- Chemistry 2
- Structural Biochemistry
- Statistics & its Applications
- Microbiology
- Principles of Nutrition
- Biochemistry & Metabolism
- Co-operative Placement 1

Year 2

- Extra-curricular Learning Experience 2 (MPU-U4)
- Malaysian Experiential Tourism (MPU-U3)/
Malaysian Ethnic Food (MPU-U3)/
Business Law- Malaysian Perspective (MPU-U3)
- Food Chemistry
- Lifespan Nutrition
- Fundamentals of Food Engineering
- Entrepreneurship for Applied Sciences
- Analytical Chemistry
- Food Processing & Packaging
- Food Microbiology
- Halal & Food Legislation
- Free elective subjects (select one)
 - Fundamentals of Marketing
 - Introduction to Public Speaking
 - Introduction to Internet Technologies
- Research Methodology, Safety & Ethics
- Co-operative Placement 2

Year 3

- Extra-curricular Learning Experience 3 (MPU-U4)
- Food Safety & Quality System
- Nutritional Assessment
- Food Commodities
- Food Science & Nutrition Research Project 1
- Nutrition & Chronic Diseases
- Food Science & Nutrition Research Project 2
- Free elective courses (select one)
 - Nutrition in Exercise & Physical Activity
 - Fermentation Technology & Downstream Processing
 - Nutrition and Functional Food
 - Nutrition, Food & Society
- Product Development & Sensory Evaluation
- Food Science & Nutrition Research Project 3
- Co-operative Placement 3

General Courses (MPU) are compulsory for all students.

U1 – For Malaysian students :

1. Ethnic Relations
2. Islamic Civilisation & Asian Civilisation

– For Foreign students:

1. Malaysian Studies
2. Communication in Bahasa Melayu 3

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COURSE OFFERED

Health Sciences FDPHS

- General Chemistry I*
- General Chemistry II*
- General Biology I*
- General Biology II*
- General Physics I*
- Fundamentals of Mathematics
- Algebra & Trigonometry
- Calculus
- Introduction to Probability & Statistics
- Introduction to Business
- Computing Essentials

Engineering Sciences FDPEN

- General Chemistry I*
- General Chemistry II*
- General Physics I*
- General Physics II or General Biology I*
- Accounting Practice
- Fundamentals of Mathematics
- Algebra & Trigonometry
- Calculus
- Introduction to Probability & Statistics
- Introduction to Business
- Computing Essentials

*Courses with Lab

Elective Courses

All students must take any 3 of the 5 elective subjects below during their Foundation studies

- Intro to Malaysian Studies
- Intro to Moral Studies
- Fundamentals of Speech & Oral Communication
- Fundamentals of Computer Graphics
- Architectural Communication

Note:

- Additional requirements (e.g. academic results, interview, IELTS/MUET) will apply for progression into Medicine, Nursing and Pharmacy programmes

Duration:

1 Year / 3 semesters (14 weeks per semester, no short semester)

Assessment

Integrating both coursework and written examinations, this programme incorporates a practice-oriented approach and furnishes students with relevant interesting, stimulating and hands-on experience via a variety of teaching methods and practical exercises. Different dynamic learning processes are employed in the delivery of this programme including lectures, tutorials, computer lab work, team-based projects, real-life system developments, presentations and independent projects, to name a few, supervised by both university lecturers and industry experts alike.

FOUNDATION IN SCIENCE

The Foundation in Science programme is a comprehensive, flexible and dynamic programme specifically designed to prepare students for their specific career path in various UCSI University science-based degrees such as Biotechnology, Food Science and Nutrition, Communication & Electronics, Electrical & Electronics, Mechatronic Engineering, Doctor of Medicine, Nursing and Pharmacy, among others. This one-year programme is tailored for students who are confident of their chosen path of studies, and who are committed to attaining the best preparation for a science-based university degree programme at UCSI University.

INTAKES

January*, May* and September

*ONLY available to the students who wish to do Foundation in science leading to Medicine and Pharmacy.





UCSI Education Sdn. Bhd. (185479-U)

UCSI University, Kuala Lumpur Campus (South Wing)

(KPT / JPT / DFT / US / W06)

No. 1, Jalan Menara Gading, UCSI Heights, Cheras, 56000 Kuala Lumpur, Malaysia

Tel: 603 - 9101 8880 Fax: 603 - 9102 2614

Latitude 3.079548 (3° 4' 46.37" N) Longitude: 101.733216 (101° 43' 59.58" E)

UCSI University, Kuala Lumpur Campus (North Wing)

Lot 12734, Jalan Choo Lip Kung, Taman Taynton View,

56000 Cheras, Kuala Lumpur, Malaysia

Tel: 603 - 9101 8880 Fax: 603 - 9102 3606

Latitude: 3.084869 (3° 5' 5.53" N) Longitude: 101.736844 (101° 44' 12.64" E)

UCSI University, Terengganu Campus

(KPT / JPT / DFT / US / T01)

Bukit Khor, PT 11065, Mukim Rusila, 21600 Marang,

Terengganu Darul Iman, Malaysia

Tel: 609 - 628 1880 / 1889 Fax: 609 - 628 1885

Latitude: 5.216519 (5° 12' 59.47" N) Longitude: 103.161621 (103° 9' 41.84" E)

UCSI University, Sarawak Campus

(KPT / JPT / DFT / US / Y04)

Lot 2498, Block 16, KCLD, Jalan Tun Jugah,

93350 Kuching, Sarawak, Malaysia

Tel: 6082 - 455 255 Fax: 6082 - 455 015

Latitude: 1.517408 (1° 31.0445" N) Longitude: 110.353422 (110° 21.2053" E)

All information is correct at the time of printing but maybe subject to changes.

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