

Undergraduate Studies

Agriculture and Food Science



UNIVERSITI TUNKU ABDUL RAHMAN UTAR
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Agricultural Science
Food Science

Bachelor of Science (Honours) Agricultural Science

(R/621/6/0001)10/21(MQA/FA0657)

Overview

Agricultural Science is an interdisciplinary field that encompasses essential aspects of agriculture and agronomy. Agriculture involves a holistic understanding of the techniques and efficient and careful management of resources for the sustainable production of animals and plants for human consumption. Agronomy included research and development that leads to improve production.

The success of agriculture in Malaysia is largely the result of a rich biodiversity base in tropical climate. An Agriculture Science programme will provide an opportunity to understand the rich agrobiodiversity of Malaysia and lead students to better comprehend why agriculture has been the most important building block of economic growth. Sustaining this success demands better understanding of our rich heritage that will protect and conserve the rich biodiversity and meet the demand of exports of healthy food.

In UTAR, Bachelor of Science (Hons) Agriculture Science students will learn the principles and applications of science, economics and management of animal and plant production, agribusiness, land and water management, and systems analysis. They will be introduced to the fundamental scientific concepts of agricultural production in order to understand the current issues faced by the industry as well as to develop novel technologies to assess and improve the agricultural sectors.

The students will be introduced to modern commercial scale farming involving agro-biodiversity, development of higher yielding plant varieties that are tolerant to plant diseases and pests, improved fish and animal husbandry, enhancing downstream agriculture activities, and better understanding of the agro-ecosystem that promotes sustainable production. There are special privileges offered only to Agricultural Science students, for instance, scholarship offered by agriculture-based

giant corporates such as Kuala Lumpur Kepong Berhad, United Malacca Plantation Berhad, IOI Group and Kuok Foundation. The students will have international exposure opportunity in terms of student exchange or internship in renowned agriculture related university (e.g. National Pingtung University of Science and Technology). An agriculture park is available to support students' learning in terms of field work and experiment as well. Besides, students studying Agricultural Science in UTAR will have the opportunity to interact with other biological science students.

Career prospects

- Agricultural consultant/ journalist/technical writer
- Agronomist
- Animal nutritionist/ behaviourist/pathologist
- Aquaculturist
- Biological researcher
- Botanist
- Entomologist
- Environmental management specialist
- Horticulturist
- Plant pathologist
- Soil Scientists
- Zoologist

Duration of study: 3 years

Medium of instruction: English

Campus: Kampar



| Courses | | |
|--|--|---|
| Year 1 | Year 2 | Year 3 |
| <ul style="list-style-type: none"> • Agricultural Chemistry • Agricultural Policy • Agro-Biodiversity • Basic Laboratory Skills for Bioscience • Computer Systems and Applications • Ecology • Introduction to Animal Science • Plant Biology • Principles and Practices of Aquaculture | <ul style="list-style-type: none"> • Agricultural Genetics • Agricultural Biotechnology • Agriculture Pest Management • Biostatistics • Cell and Tissue Culture Techniques • Environmental Toxicology • Industrial Training • Microbiology • Research Methodology • Soil Science | <ul style="list-style-type: none"> • Aquatic Hatchery Technology • Crop Production • Farm Animal Breeding and Reproduction Technology • Farm Management and Mechanization • Project (I & II) • Weed Science |

| | |
|---|---|
| <p>Electives</p> <ul style="list-style-type: none"> • Interpersonal Communication • Organisation and Human Resource • Culture and Communication • Introduction to Sociology • Management Principles • Organisational Behaviour • Entrepreneurship • Leadership and Team Building <p>University Courses</p> <ul style="list-style-type: none"> • Co-curriculum • Sun Zi's Art of War and Business Strategies | <p>MPU Courses</p> <ul style="list-style-type: none"> • Hubungan Etnik • Malaysian Studies 3 • Tamadun Islam dan Tamadun Asia • Bahasa Melayu Komunikasi 2 • English of Science |
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Students will choose one out of three options offered:

OPTION 1: Agronomy

- Agribusiness
- Agricultural and Food Industrial Waste Management
- Economic Botany
- Food Safety and Quality Assurance
- Horticulture
- Plant Breeding
- Plant Pathology
- Post-harvest Technology

OPTION 2: Aquaculture

- Agribusiness
- Agricultural and Food Industrial Waste Management
- Aquatic Diseases of Fish and Shellfish
- Aquatic Reproduction Technology
- Fisheries Management
- Food Safety and Quality Assurance
- Marine Biology
- Post-harvest Technology

OPTION 3: Animal Science

- Agribusiness
- Agricultural and Food Industrial Waste Management
- Farm Animal Diseases and Health
- Farm Animal Feed and Nutrition
- Farm Animal Production and Management
- Food Safety and Quality Assurance
- Post-harvest Technology
- Production of Farm Animal Products

Bachelor of Science (Hons) Food Science

(R/541/6/0020)02/24(MQA/FA3601)

Overview

Food Science is a multidisciplinary science that integrates various fundamental and potential aspects of food molecules, post-harvest processing and food quality assessment. It includes the application of scientific/technological knowledge in minimising post-harvest losses, increasing agricultural productivity, improving the quantity, safety and nutritional quality of crops and animals by all available “tools”, including biotechnology and food safety. Students pursuing the Food Science programme would be equipped with an in-depth understanding of science as it applies to food and involves hands-on laboratory activities.

As food and its nutrients are essential for our survival, the opportunity to understand and tackle some of the greatest challenges facing mankind is one which you may find appealing. Food Science applies the pure science subjects, such as chemistry, biology, nutrition, biochemistry, and microbiology, to the study of the nature, properties and composition of food and the changes which they undergo during storage and processing. It takes a scientific and technical approach to understand the nature of raw food materials and their transformation into final consumable products - “From farm to fork”. In fact, it plays an important role in producing safe, nutritious, and wholesome food to meet the high demand of the increasing global population.

In this programme, students will be introduced to the good laboratory practice, manufacturing practice, current food preservation techniques, food processing technologies, food microbial risk assessment and the industrial best practices and will apply them in the form of assignments and final year projects.

There will be advantages if studying Food Science in UTAR, as the students will have opportunity to interact with other science students, for example Agricultural Science, Biotechnology, Microbiology, Biomedical Science and soon Dietetics with Nutrition.

Career prospects

- Food Biotechnologist
- Food Labelling Advisor
- Food Scientist
- Food Supplement Specialist
- Food Technologist
- Nutritionist
- Operations Improvement
- Production Manager
- Product/Process Development Scientist
- Quality Control Manager
- Raw Materials Buyer
- Sensory Scientist

Duration of study: 3 years
Medium of instruction: English
Campus: Kampar



Courses

| Year 1 | Year 2 | Year 3 |
|--|---|---|
| <ul style="list-style-type: none"> • Chemistry-Properties and Energetics • Computer Systems and Applications • English for Science • Food Biophysics • Food Chemistry • Introduction to Food Science • Introductory Microbiology • Mathematics for Bioscience • Organic Chemistry | <ul style="list-style-type: none"> • Design of Analysis and Experiment • Food Analysis I (Chemical Methods) • Food Analysis II (Instrumental Methods) • Food Microbiology • Food Preservation • Human Nutrition • Industrial Training • National Language/Other Language • Sensory Evaluation • Unit Operations for Food Processing | <ul style="list-style-type: none"> • Food Biotechnology • Food Product Innovation • Food Packaging Science • Food Processing • Food Safety and Quality Assurance • Food Standards, Food Laws and Regulations • Project |

Electives

- Management Principles
- Organisational Behaviour
- Entrepreneurship
- Culture and Communication
- Introduction to Sociology
- Food Biochemistry and Toxicology
- Functional Foods and Nutraceuticals
- Leadership and Team Building
- Food Shelf Life Evaluation
- Interpersonal Communication
- Organisation and Human Resource

University Courses

- Co-curriculum
- Sun Zi's Art of War and Business Strategies

MPU Courses

- Hubungan Etnik
- Malaysian Studies 3
- Tamadun Islam dan Tamadun Asia
- Bahasa Melayu Komunikasi 2
- English of Science





About Faculty of Science

The Faculty of Science aims to spearhead the development, application and dissemination of knowledge related to biological, chemical and mathematical sciences. The Faculty's team of dedicated staff is actively engaged in key research in improving human condition and addressing community and environmental issues and industries. The Faculty invested tremendously in modern scientific instruments so that students have practical learning opportunity which is an important feature for Science education today.

For more faculty and programmes information, visit www.utar.edu.my/fs/



For more information, please contact
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