



# DIPLOMA IN FOOD, NUTRITION & CULINARY SCIENCE (T26)

## Course Overview

Have you ever wanted to experiment with local favourites, such as chicken rice or roti prata, and give them a healthier makeover? Are you curious about the science behind meatless meat and what to look out for in a food label?

We will teach you the science behind the food we consume. Learn to integrate food science, nutrition, and culinary disciplines, while working in our on-campus, central kitchen! Here, you will prepare healthy and delicious meals which are also market-ready and safe. You will also gain the knowledge to plan and conduct community health and nutrition programmes.

Our strong network of industry ties provides you with opportunities for real-world learning through local or overseas internships and industry projects. With a curriculum designed to meet the skills and competencies needed by the different industries, you will be ready to pursue a career you can be passionate about.

Join us and revolutionise the way we see food as you create recipes that are nutritious, sustainable and safe.



### THE ONLY 3-IN-1 FOOD SCIENCE COURSE

The only course in Singapore that integrates three sectors – food, nutrition and culinary science, facilitating multidisciplinary learning.



### REAL-WORLD EXPERIENCE

Get hands-on work experience in our student-run learning enterprise, Bistro Lab, for a seamless transition to the food industry.



### BUILD NEW SKILLS

Build the skills to conduct community health and nutrition programmes that will improve lives.

# Entry Requirements

To be eligible for consideration for admission, applicants must obtain 26 points or better for the net ELR2B2 aggregate score (i.e. English Language, 2 relevant subjects and best 2 other subjects, including CCA Bonus Points) and meet the minimum entry requirements of this course. CCA cannot be used to meet the minimum entry requirements.

Subject	Grade
English Language (EL1)*	1-7
Mathematics (E or A)	1-6
One of the following Science subjects: <ul style="list-style-type: none"><li>Biology</li><li>Biotechnology</li><li>Chemistry</li><li>Combined Science</li><li>Food &amp; Nutrition</li><li>Physics/Engineering Science</li><li>Science (Chemistry, Biology)</li><li>Science (Physics, Biology)</li><li>Science (Physics, Chemistry)/Physical Science</li></ul>	1-6
Any two other subjects, excluding CCA	
<b>2022 Planned Intake</b>	<b>70</b>
<b>Net ELR2B2 aggregate range (2021 JAE)</b>	<b>7 - 14</b>

\* Sijil Pelajaran Malaysia (SPM)/ Unified Examination Chinese (UEC) holders must have a minimum of grade 6 for the relevant English Language subject (e.g. Bahasa Inggeris).

Note:

No colour deficiency.

To ensure compliance on food and workplace safety, applicants with any medical conditions including physical disabilities should make a declaration and obtain pre-enrolment medical clearance.

Students are required to work in non-halal certified kitchens and facilities, as well as handle various ingredients such as meats (including pork and their by-products); emulsifiers and gelling agents of animal origin; as well as alcohol-based products. Students may not necessarily consume these ingredients but will be required to evaluate and assess their physical/chemical properties.

## What You'll Learn

**YEAR 1**

YEAR 2

YEAR 3

TPFUN

You will begin your journey by building a strong broad-based foundation through core subjects ranging from microbiology, cell biology, mathematics to conservation, nutrition and workplace safety.

Core Subjects		
Subject Code	Subject	Credit Units
AMB1005	<b>Basic Microbiology</b> This subject investigates the important fundamentals of microbiology and its relevance to the food, biomedical and biotechnology industries. It covers the types of microorganisms, their cultivation and growth as well as their control.	4
AMT1004	<b>Cell Biology &amp; Biochemistry</b> This subject introduces the biology of cells and the structure-function relationship of cells, cellular membranes and organelles. It covers basic concepts of organic chemistry and the	5

	cellular membranes and organelles. It covers basic concepts of organic chemistry and the structure-property relationship of essential biomolecules. Basic laboratory skills involving the study of cell structures with the use of cell staining and microscopy techniques, as well as basic biochemical analysis will also be introduced.		
<b>AVT1011</b>	<b>Conservation &amp; Sustainability</b> This subject introduces the principles of environmental conservation and sustainable development. Topics include the ecosystem approach in resource management, conservation and environmental stewardship, sustainable development and circular economy.	<b>3</b>	^
<b>AMA1008</b>	<b>Digitalisation in Applied Science</b> This subject covers the basic concept of data analytics as well as the processes of data cleaning, processing and visualisation of data in the contexts of applied science. Basic coding and fundamental computational thinking constructs such as variables, data type and logic will also be addressed.	<b>2</b>	^
<b>APH1004</b>	<b>Laboratory &amp; Workplace Safety</b> This subject covers an introduction to Good Laboratory Practice, and the identification and classification of biological, chemical, physical and ergonomic hazards at the workplace and laboratories. It also involves the conduct of risk assessment, risk controls and monitoring as well as communication of these risks to all persons involved in compliance with the Workplace Safety and Health (Risk Management) Regulations.	<b>3</b>	^
<b>AMA1003</b>	<b>Mathematics for Applied Science</b> This subject covers algebra, differentiation, integration and their applications in applied science contexts.	<b>3</b>	^
<b>ANT1005</b>	<b>Nutrition &amp; Health</b> This subject examines the relationship between food, nutrition and health. It provides an introduction to macro- and micro- nutrients in relation to the well-being of the human body. It covers food sources of these nutrients and their interrelationships as well as the use of basic nutritional tools like My Healthy Plate, food composition tables and online nutritional databases for basic nutritional analysis.	<b>3</b>	^
<b>ACH1009</b>	<b>Principles of Inorganic &amp; Physical Chemistry 1</b> This subject covers the basic theory and practical knowledge of inorganic and physical chemistry. Topics include fundamentals of chemistry, atomic structure and chemical bonding, stoichiometry and equilibria concepts of a chemical reaction.	<b>4</b>	^
<b>AMA1004</b>	<b>Statistics for Applied Science</b> This subject provides you with the basic statistical techniques that are essential for your course of study. Topics covered include basic probability and distributions, basic statistics, sampling distribution, hypothesis testing, analysis of variance and chi-square testing.	<b>3</b>	^

YEAR 1

**YEAR 2**

YEAR 3

TPFUN

Discover the science behind foods through subjects such as Chemistry of Food and Science of Food Ingredients. Learn essential kitchen skills and nutrition to plan diets to meet various nutritional needs. Discover the application of various technologies for efficient mass food production that will support your foundation in areas like product development and food safety.

### Core Subjects

Subject Code	Subject	Credit Units
<b>ABC2024</b>	<b>Baking &amp; Culinary Technology</b> This subject introduces basic knife skills, cooking techniques and bread making skills. Kitchen safety, proper food hygiene practices and operation of equipment will be covered. The principles behind culinary technologies such as cook chill, cook freeze, blast chilling and sous vide as well as advances in frozen dough technology are also covered.	<b>5</b>

<b>AFS2013</b>	<b>Chemistry of Food</b> This subject focuses on the major components in food, namely water, carbohydrates, fats and oils and proteins. The chemical reactions, physical and functional properties of these components as well as their interactions in food systems will be covered.	<b>5</b>	
<b>AFS2015</b>	<b>Food Safety &amp; Quality Assurance</b> This subject introduces important concepts such as Good Manufacturing Practices (GMP) and Good Laboratory Practices (GLP) and food safety management systems such as Hazard Analysis Critical Control Point (HACCP). Sampling techniques and a variety of food testing methods commonly used to assess the safety of food is also covered.	<b>5</b>	
<b>AMT1005</b>	<b>Human Anatomy &amp; Physiology</b> This subject provides you with a basic understanding of human anatomy and physiology. Topics include anatomy of human organs, organ systems and their functions.	<b>4</b>	
<b>ANT2012</b>	<b>Lifespan &amp; Community Nutrition</b> This subject introduces the physiological basis for nutritional requirements of individuals across the lifespan, which underpins the public health and nutrition concerns of community groups. Methods for conducting nutrition assessment for individuals and communities and interpretation of data using appropriate references are covered. Planning meals and evaluating dietary intakes based on nutrition principles, guidelines and standards are also covered. Knowledge, attitude and practices (KAP) survey methodology is also included.	<b>5</b>	
<b>ANT2013</b>	<b>Metabolism &amp; Medical Nutrition Therapy Basics</b> This subject introduces the major metabolic pathways involving carbohydrates and lipids and explains the biochemical mechanisms of common diet-related diseases. It covers the pathophysiology, causes, risk factors, diagnostic criteria and symptoms of obesity, diabetes and cardiovascular diseases. Evidence-based dietary principles, integrated into the four-step Nutrition Care Process (NCP) as the standard approach in formulating individualized nutrition care plans for the dietary management of diseases, is introduced.	<b>5</b>	
<b>AFS3008</b>	<b>Product Development &amp; Marketing</b> This subject covers the fundamentals for developing new food products. You will develop food products that fulfil the legislation through the use of suitable ingredients, processing methods and techniques in food preservation. Principles of marketing and product commercialisation will also be covered.	<b>5</b>	
<b>AFS2014</b>	<b>Science of Food Ingredients</b> This subject focuses on the ingredients and additives used in food production, with special emphasis on bakery products. Reactions and functional properties of ingredients and additives such as emulsifiers, stabilizers, colourings and flavourings will be covered. Regulations on the use of additives are also included.	<b>5</b>	

### Diploma Subjects - Elective Subjects

Subject Code	Subject	Credit Units	
<b>AFS2010</b>	<b>Food Quality Assurance</b> This subject is an integration of food microbiology, food quality control, sampling techniques and quality management system; ensuring quality and safety for compliance with food standards and legislation. Physical, chemical and microbiological testing skills will be taught.	<b>4</b>	
<b>ANT2010</b>	<b>Principles of Biochemistry and Physiology for Nutrition</b> This subject focuses on basic biochemistry and human physiology concepts. The regulation of the integrative metabolic pathways involving glucose, lipid and protein, and their link to adenosine triphosphate (ATP) synthesis is covered in detail. Principles of enzymatic reactions, function and disorders of the immune system are covered as well.	<b>4</b>	
<b>ABC2022</b>	<b>Heritage Cuisine</b>	<b>4</b>	

This subject covers the preparation, presentation and evaluation of local dishes from various ethnic groups in Singapore. The application of culinary skills in the preparation of stocks, soups, sauces, salads, fruits/vegetables, grains, eggs, poultry, red meat, and seafood will be included.

**ACH2004**

**Principles of Instrumental Analysis**

**4**



This subject provides the basic knowledge of the principles and applications of some instruments commonly used in chemical industries.

**ANT2009**

**Community Health and Nutrition**

**4**



This subject focuses on the main public health and nutrition concerns in various community groups, the risk factors involved and the importance of prevention. It covers the steps involved in the planning and delivery of a health and nutrition promotion program. The methods used to assess the health and nutrition status of a community and the appropriate intervention strategies and activities are also discussed.

**ABC2023**

**Catering Technology**

**4**



This subject covers various technologies used to support the efficient production of foods that are safe and with consistent quality in manpower-lean production environments. Applications of various modern technologies in baking and cooking, food packaging, and shelf-life extension will be highlighted.

YEAR 1

YEAR 2

**YEAR 3**

TPFUN

Get ready to gain practical work experience through an exciting internship and a challenging major project. You will further develop industry-specific knowledge and skills in areas such as food technology or applied nutrition.

**Core Subjects**

**Subject Code**

**Subject**

**Credit Units**

**AMP3019**

**Major Project**

**6**



This subject provides a framework for you to solve practical and/ or technical problems, conduct research work and/or develop studies through a self-managed project. The scope of the subject includes project proposal, investigative studies, data analysis and interpretation of results, written report and presentation.

**Diploma Elective Cluster Subjects**

**Applied Nutrition**

**Subject Code**

**Subject**

**Credit Units**

**ABC3012**

**Central Kitchen Operations**

**5**



This subject provides practical training in high-volume food production for a food service operation. Topics include quantity food production, event catering, food safety and workplace safety. Fundamental culinary skills will be reinforced and new skills in using modern equipment for scaled-up production will be covered. Menu items from different cuisines common to fast casual dining will also be covered. Current trends impacting food service operations will be introduced.

**ANT3006**

**Metabolism & Advanced Medical Nutrition Therapy**

**4**



This subject covers the major metabolic pathways involving protein and alcohol. It covers the biochemical mechanisms, pathophysiology, causes, risk factors, diagnostic criteria and symptoms of chronic kidney and liver diseases. Gastrointestinal and neurological disorders, dysphagia, hyperuricemia, cancer and nutrition support are introduced. Dietary management of these diseases using the four-step Nutrition Care Process (NCP) is the standard approach used.

## Food Technology

Subject Code	Subject	Credit Units
ABC3012	<p><b>Central Kitchen Operations</b></p> <p>This subject provides practical training in high-volume food production for a food service operation. Topics include quantity food production, event catering, food safety and workplace safety. Fundamental culinary skills will be reinforced and new skills in using modern equipment for scaled-up production will be covered. Menu items from different cuisines common to fast casual dining will also be covered. Current trends impacting food service operations will be introduced.</p>	5
AFS3011	<p><b>Food Processing &amp; Packaging</b></p> <p>This subject provides a general overview of current food processing methods used in the food industry. Elements of food engineering, process control, processing conditions and equipment are introduced. This subject also provides insights into food packaging technology, including packaging materials, types of machinery used, packaging techniques, and active and intelligent packaging.</p>	4

YEAR 1

YEAR 2

YEAR 3

**TPFUN**

You will also undergo TP Fundamentals (TPFun) – a set of subjects that equips you with the crucial life skills you need to navigate the modern world as an agile and forward-thinking individual, and team player.

## TP Fundamentals (TPFun) Subjects

Subject Code	Subject	Credit Units
GTP1301	<p><b>Current Issues &amp; Critical Thinking</b></p> <p>This subject covers current issues, including diverse local and global concerns, that will impact lives and may have critical implications for Singapore. There will be opportunities to build competence through self-directed learning, communicate and collaborate in active discussions and objectively analyse issues using digital and information literacy skills and critical thinking scaffolds.</p> <p>This subject aims to provide students with the knowledge and skills to:</p> <ul style="list-style-type: none"> <li>• apply critical thinking tools to examine current issues.</li> <li>• effectively search for relevant information from a variety of sources.</li> <li>• evaluate research information.</li> <li>• cite sources to support their views.</li> <li>• articulate an informed opinion about current issues.</li> </ul>	3
ATX1001	<p><b>Effective Communication</b></p> <p>This subject introduces the fundamentals of effective communication. It also covers how to communicate with and convince an audience through writing and speaking tasks. The skills in this subject will include the application of strategies for communication, appropriate vocabulary, language features, visual aids, tone and style. The <b>Message, Audience, Purpose and Strategy (MAPS)</b> framework will also be applied when planning and engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.</p> <p>This subject aims to equip students with the knowledge and skills to:</p> <ul style="list-style-type: none"> <li>• apply the factors that influence effective communication.</li> <li>• structure a compelling point of view through a writing task.</li> <li>• express their ideas convincingly to an audience in an oral presentation.</li> </ul>	3
ATX1002	<p><b>Professional Communication</b></p> <p>This subject covers professional communication skills for the workplace and employability skills in the areas of career preparation. It covers communication and interpersonal skills, including effective virtual communication etiquette, and conducting oneself professionally in the workplace. In addition, essential career preparation skills such as resume writing and interview</p>	3

skills, needed to seek and secure work would be included. The **Message, Audience, Purpose** and **Strategy (MAPS)** framework would also be applied when engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.

The subject aims to equip students with the knowledge and skills to:

- **communicate effectively in the workplace using principles of effective written communication and interpersonal skills.**
- **apply effective job search and interview skills in their career preparation.**

**GTP1101**

**Leadership Fundamentals**

**2**



This subject focuses on self-leadership based on the values of integrity, respect, and responsibility. Increasing awareness of self and others will lay the foundations for personal and relationship effectiveness. Consequential thinking, clear articulation of personal values and visions, emphatic listening, and collaboration in serving others are some of the essential skills covered in this leadership journey. There will be opportunities to build and to apply the concepts of being a values-centred leader.

The aim of this subject is to guide students to:

- **design a personal growth plan based on strengths, values and purpose.**
- **apply the attributes of logical and emotional intelligence to improve team effectiveness.**
- **identify the key messages of respect in relationships.**
- **apply the principles of effective personal financial management.**

**GTP1102**

**Leadership in Action**

**1**



This subject focuses on Service Learning as an experiential platform to apply the tenets of Self and Team Leadership. Service Learning will be the capstone project for this subject, which will require an analysis of the diverse needs of the community, collaboration with community partners and demonstration of learning, including key elements of empathy. There will be opportunities to build and to apply the concepts of being a values-centred leader.

This subject aims to equip students with the knowledge and skills to:

- **plan and carry out a project to demonstrate empathy towards people in a diverse community.**
- **apply diploma core knowledge and skills through the Service Learning platform to address community needs.**
- **reflect on the Service Learning experience when working in teams and with community partners.**

**GTP1201**

**Career Readiness CARE1**

**1**



This subject focuses on personal management skills. It develops an understanding of one's career interests, values, personality and skills for career success. It covers the necessary knowledge, skills and attitudes needed to succeed in the workplace and achieve professional goals. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning methods and acquire the skills of being a lifelong learner.

This subject aims to equip students with the knowledge and skills to:

- **analyse personal characteristics that can contribute positively to achieving personal, educational and career goals.**
- **make career decisions that are aligned with their interests, skills and values.**

**GTP1202**

**Career Readiness CARE2**

**1**



This subject focuses on career management skills. It covers the importance of workplace readiness skills to adapt and respond to the changing job market environment. Career ownership and continuous learning for lifelong employability will be emphasised. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning, and acquire the skills of being a lifelong learner.

This subject aims to equip students with the knowledge and skills to:

- **identify their work profiles to help them in their career choices in a changing job market environment.**
- **take career ownership for continuous learning and lifelong employability.**








**LSW1002**

**Sports & Wellness**

**2**



The subject enables students to build a good foundation for healthy living. Students will have the opportunity to participate in hands-on practical sessions where they will experience and develop both physical and technical skills in their chosen sports or fitness activities. Through a structured

	<p>curriculum that facilitates group participation, practice sessions and mini competitions, students will be able to build lifelong skills such as resilience, leadership, communication and teamwork. Physical activity sessions will also be supplemented by health-related topics that span the dimensions of health, such as diet, nutrition, stress and weight management, to provide students with a holistic approach to healthy living. This subject also prepares students to be self-directed and accountable for lifelong learning for good health.</p>		
<b>AIN1001</b>	<p><b>Innovation &amp; Entrepreneurship</b></p> <p>The subject is designed for learners from all disciplines to embrace innovation in either their specialised field or beyond. Learners will be taught to apply the Design Thinking framework to develop problem statements, ideate and identify feasible solutions. Learners will be exposed to several tools for prototyping. In addition, commercial awareness will be imbued in learners through various innovation and entrepreneurship concepts or tools. This subject also prepares students to be self-directed lifelong learners who are digital and information literate. It nurtures communicative and collaborative citizens who can use objective analysis in problem-solving.</p>	<b>2</b>	
<b>AGS1002</b>	<p><b>Global Studies</b></p> <p>This subject provides essential skills and knowledge to prepare students for an overseas experience. They will examine the elements of culture and learn the key principles of cross-cultural communication. In addition, they will gain an appreciation and awareness of the political, economic, technological and social landscape to function effectively in a global environment. The subject prepares students to be responsible citizens and leaders who can contribute to the global community through effective communication and collaboration.</p>	<b>3</b>	
<b>AGS1003</b>	<p><b>Managing Diversity at Work*</b></p> <p>This subject explores the concepts of identity, diversity and inclusion at the workplace. It examines the relationship between identity and diversity, the benefits and challenges of diversity and the strategies that promote inclusion and inspire collaboration in a diverse workplace. Examples of the elements of diversity covered in this subject include nationality, generation, ethnicity and gender. The subject prepares students to be responsible citizens and leaders who can contribute to the global community through effective communication and collaboration.</p>	<b>3</b>	
<b>AGS1004</b>	<p><b>Global Citizenship &amp; Community Development*</b></p> <p>Students will examine the meaning and responsibilities of being a Global Citizen, in order to contribute towards a more equitable and sustainable world. In addition, students will learn how sustainable solutions can support community development, and, execute and critique a community action plan that addresses the needs of a specific community/cause. The subject prepares students to be responsible citizens and leaders who can contribute to the global community through effective communication and collaboration.</p>	<b>3</b>	
<b>AGS1005</b>	<p><b>Expressions of Culture*</b></p> <p>This subject provides a platform for an understanding of culture and heritage through modes of expression. Students will be introduced to global and local cultures via everyday objects, places and human behaviour seen through time and space. Students will explore issues and challenges in culture and heritage sustainability in community, national and global contexts. The subject prepares students to be responsible citizens and leaders who can contribute to the global community through effective communication and collaboration.</p>	<b>3</b>	
<b>GTP1302</b>	<p><b>Guided Learning</b></p> <p>The subject introduces students to the concepts and process of self-directed learning in a chosen area of inquiry. The process focusses on four stages: planning, performing, monitoring and reflecting. Students get to plan their individual learning project, refine and execute the learning plan, as well as monitor and reflect on their learning progress and project. The learning will be captured and showcased through a curated portfolio. The self-directed learning project will broaden and/or deepen a student's knowledge and skills. Students will enhance their problem solving and digital literacy skills through this subject.</p>	<b>3</b>	
<b>ASI3033</b>	<p><b>Student Internship Programme</b></p> <p>This structured programme is designed to link your learning with the real work environment. You will be placed in organisation(s) with opportunities to apply the concepts and skills acquired in the course of your study. Besides reinforcing technical concepts and mastering of skills in areas that you have been trained, the practical training will enable you to build important skills such as problem-solving, communication, teamwork, and to cultivate good attitude and a strong work ethic</p>	<b>14</b>	



*\* Students must choose one of these three electives under the 'Global Studies 2' subject, or take 'Guided Learning'*

## GRADUATION REQUIREMENTS

Cumulative Grade Point Average	min 1.0
TP Fundamentals Subjects	38 credit units
Diploma Subjects - Core Subjects	75 credit units
Diploma Subjects - Elective Subjects	min 9 credit units
<b>Total Credit Units Completed</b>	min 120 credit units