

# PROC 1005 INTRODUCTION TO FOOD SCIENCE AND NUTRITION

**Credit Points** 10

**Legacy Code** 301444

**Coordinator** Arua Kalu (<https://directory.westernsydney.edu.au/search/name/Arua Kalu/>)

**Description** Food provides sustenance to life, nutrition for good health, enjoyment and cultural identity. Students will study the history and cultural significance of food and its traditions in Australia and around the world. This subject introduces the basic principles for understanding the science behind food; its composition, chemical, physical and functional characteristics. Fruits and vegetables, cereal, meat and dairy products will be covered, how they are processed and impacts on food quality and nutrition. Current issues will be discussed, such as world food supply, food-borne disease, diet and health, and new trends in food. Students will further gain a general understanding of the macronutrients such as carbohydrates, proteins and lipids in human metabolism and energy release. The role of water and electrolytes in cellular and tissue functions will be covered. The micronutrients are also studied, including the properties, general requirements, functions.

**School** Science

**Discipline** Food Processing Technology

**Student Contribution Band** HECS Band 2 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 1 subject

**Equivalent Subjects** PROC 1001 - Food Science 1 LGYB 8736 - Food Science Technology Practicum 11 PROC 1002 - Food Science 1 PROC 1003 - Food Science 1 (WSTC)

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain the history and cultural significance of different foods around the world
2. Discuss current food and nutrition issues including diet and health, new trends in foods, food quality, safe food handling and food borne disease
3. Describe the characteristics of food commodities: fruits and vegetables, cereal, dairy and flesh foods, including nutritional value, chemical composition, and functional properties
4. Describe basic food processing practices associated with fruit, cereal, dairy and flesh commodities
5. Demonstrate an understanding of the human digestive system and the metabolism of macro and micro nutrients and effects of deficiency and excesses to human health.
6. Understand the role of essential fatty acids, amino acids, water, vitamins and electrolytes in the diet and their roles in human health.
7. Conduct basic food experiments in the food science laboratory and kitchen safely and competently
8. Methodically and accurately record data when conducting experiments; and use this data to interpret findings

9. Demonstrate communication skills, including report writing and oral presentations

## Subject Content

1. Introduction to the study of food science and nutrition; review of current issues related to food including world food supply
2. History and cultural significance of food
  - Historical changes to the food supply - from the past to today
  - Food traditions in different cultures
3. Safe food handling and food borne disease; Food quality assessment
4. Food Commodities
  - Fruits and vegetables
  - Cereal products
  - Dairy products
  - Flesh products
5. Meat, fruit, cereal and dairy processes
6. Macronutrients and Micronutrients
7. Digestion, absorption and metabolic pathways involving carbohydrates, proteins and lipids
8. Roles of vitamins and essential minerals in health and nutrition
9. Diet and health

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group	Mandatory Task
Quiz	30 minutes each	40	N	Individual	N
Practical	2000 words	40	N	Individual	N
Presentation	5 minutes	20	N	Group	N

### Prescribed Texts

- Campbell-Platt, G. 2018, Food Science and Technology. 2nd edition. IUFoST, John Wiley & Sons, U.K. [e-book]
- Mann, J, Truswell, AS, Hodson, L. 2023, Essentials of human nutrition, 6th edn, Oxford University Press, Oxford.

### Teaching Periods

## Spring (2025)

### Hawkesbury

### Hybrid

**Subject Contact** Arua Kalu (<https://directory.westernsydney.edu.au/search/name/Arua Kalu/>)

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=PROC1005\\_25-SPR\\_HW\\_3#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=PROC1005_25-SPR_HW_3#subjects))