



# Unit Outline (Higher Education)

**Institute / School:** Institute of Innovation, Science & Sustainability

**Unit Title:** FOOD CHEMISTRY

**Unit ID:** SCCHM3003

**Credit Points:** 15.00

**Prerequisite(s):** (SCCHM2001)

**Co-requisite(s):** Nil

**Exclusion(s):** (SCFST3044)

**ASCED:** 019905

**Description of the Unit:**

This unit focusses on the function, reactions, interactions and effect of processing on food components, primarily focussing on water, carbohydrates, proteins and lipids. There is a major focus on how food composition influences food quality. The composition and nutritional aspects of minerals in foods; stability and analysis of vitamins in food and chemistry of food toxicants and contaminants are also covered.

**Grade Scheme:** Graded (HD, D, C, P, MF, F, XF)

**Work Experience:**

No work experience: Student is not undertaking work experience in industry.

**Placement Component:** No

**Supplementary Assessment:** Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

**Course Level:**

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Learning Outcomes:****Knowledge:**

- K1.** Describe the role of key macro and micro-nutrients in food and their impact on food quality
- K2.** Demonstrate knowledge of the chemical processes that lead to quality deterioration in food and identify ways to minimise them
- K3.** Compare and contrast methods used for chemical analysis of food components
- K4.** Distinguish between nutritive and non-nutritive food components

**Skills:**

- S1.** Identify safety hazards in a laboratory setting and implement processes to minimise them
- S2.** Evaluate and select appropriate methods for determining the compositional analysis and quality of food
- S3.** Demonstrate the capacity to work effectively both individually and in teams
- S4.** Assess experimental data in terms of its compliance with regulations

**Application of knowledge and skills:**

- A1.** Design, plan and implement an investigation of the compositional analysis of a food product
- A2.** Critically evaluate scientific data
- A3.** Apply teamwork skills to the completion of laboratory activities

**Unit Content:**

Food Chemistry is concerned broadly with chemical components present in food, which can have both positive and negative effects on the food. It primarily focusses on the key chemical components and how these might be altered through processing to affect food quality.

Topics may include:

- Properties and function of water in foods
- Chemistry of carbohydrates in foods: monosaccharides, disaccharides and polysaccharides
- Chemistry of proteins in foods: amino acids and polypeptides
- Chemistry of enzymes in food
- Chemistry of lipids in foods
- Composition and nutritional aspects of minerals in foods
- Stability and analysis of vitamins in food: water soluble vitamins and fat soluble vitamins
- Chemistry of food toxicants and contaminants

**FEDTASKS**

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**tttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 1 Interpersonal	<p>Students will demonstrate the ability to effectively communicate, interact and work with others both individually and in groups. Students will be required to display skills in-person and/or online in:</p> <ul style="list-style-type: none"> <li>• Using effective verbal and non-verbal communication</li> <li>• Listening for meaning and influencing via active listening</li> <li>• Showing empathy for others</li> <li>• Negotiating and demonstrating conflict resolution skills</li> <li>• Working respectfully in cross-cultural and diverse teams.</li> </ul>	S3, A3	AT2
FEDTASK 2 Leadership	<p>Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in:</p> <ul style="list-style-type: none"> <li>• Creating a collegial environment</li> <li>• Showing self -awareness and the ability to self-reflect</li> <li>• Inspiring and convincing others</li> <li>• Making informed decisions</li> <li>• Displaying initiative</li> </ul>	Not applicable	Not applicable
FEDTASK 3 Critical Thinking and Creativity	<p>Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in:</p> <ul style="list-style-type: none"> <li>• Reflecting critically</li> <li>• Evaluating ideas, concepts and information</li> <li>• Considering alternative perspectives to refine ideas</li> <li>• Challenging conventional thinking to clarify concepts</li> <li>• Forming creative solutions in problem solving</li> </ul>	K3, S4, A1, A2	AT2
FEDTASK 4 Digital Literacy	<p>Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in:</p> <ul style="list-style-type: none"> <li>• Finding, evaluating, managing, curating, organising and sharing digital information</li> <li>• Collating, managing, accessing and using digital data securely</li> <li>• Receiving and responding to messages in a range of digital media</li> <li>• Contributing actively to digital teams and working groups</li> <li>• Participating in and benefiting from digital learning opportunities</li> </ul>	Not applicable	Not applicable
FEDTASK 5 Sustainable and Ethical Mindset	<p>Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in:</p> <ul style="list-style-type: none"> <li>• Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts</li> <li>• Committing to social responsibility as a professional and a citizen</li> <li>• Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses</li> <li>• Embracing lifelong, life-wide and life-deep learning to be open to diverse others</li> <li>• Implementing required actions to foster sustainability in their professional and personal life.</li> </ul>	S4	AT1, AT2

### Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, S1-S4, A2, A3	Undertake and report on laboratory practicals and complete a laboratory record book	Written reports and laboratory conduct	20-35 %
K2, K3 K4, S1-S4, A1-A3	Analytical investigation of macro- and micro-components in food (Group work)	Written report, laboratory analysis and oral presentation	30-50%
K1, K2, K4, A2	Demonstrate and apply knowledge from unit content in response to case study questions	Case study assignment	15-35%

### Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

**MICS Mapping has been undertaken for this Unit**                      No

Date:

### Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)