

FOOD1120

Food Science, Society and Sustainability

Term 1, 2022



Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Johannes Le Coutre	johannes.lecoutre@unsw.edu.au	working hours	SEB Room 437	02 9385 7195

Lecturers

Name	Email	Availability	Location	Phone
Jayashree Arcot	j.arcot@unsw.edu.au			
Alison Jones	alison.jones@unsw.edu.au			
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School Contact Information

For assistance with enrolment, class registration, progression checks and other administrative matters, please see [the Nucleus: Student Hub](#). They are located inside the Library – first right as you enter the main library entrance. You can also contact them via <http://unsw.to/webforms> or reserve a place in the face-to-face queue using the UniVerse app.

If circumstances outside your control impact on submitting assessments, Special Consideration may be granted, usually in the form of an extension or a supplementary assessment. Applications for Special Consideration must be submitted [online](#).

For course administration matters, please contact the Course Coordinator.

Course Details

Units of Credit 6

Summary of the Course

These days everyone has an opinion on food - its health effects, its quality and taste, its environmental impact. In this course you will examine the development, the science, and the place of food in society so you can engage in these contemporary debates about the future of food.

Society's attitudes and understanding of the role that food plays in our health has been rapidly changing in the last decade. Existing food hierarchies have been overturned and diet orthodoxies disrupted. We are learning more and more how changes to diet can promote or discourage chronic disease like diabetes, osteoporosis, and Alzheimer's. At the same time, we are increasingly aware of the way that food production, packaging, and distribution is impacting the environment and contributing to climate change. This leads many to consider the ethics of food creation and consumption.

This course will give you insights into the breadth and depth of food science - a rapidly evolving discipline. The course will introduce you to some of the common scientific principles, practices, and challenges related to our food systems. You will examine the interactions between the food industry and consumer ethics, health, and behaviour. Finally, you will consider the arguments around food packaging and the role of innovation in food product development, food waste and sustainability.

Course Aims

This course aims to introduce students to the origins of our diets, food supply chains, and the connections between food and health. Further, the course will expose students to breadth and depth of food science and explore how a multi-disciplinary systems approach is addressing contemporary challenges to provide food that is cheap and nutritious, safe and sustainable.

Course Learning Outcomes

1. Define introductory concepts in food science, including the components, properties, and functions of foods
2. Explain how food science contributes to individual, societal, planetary, and economic health.
3. Apply systems thinking to current and future challenges in the supplying the world with sufficient, sustainable, and nutritious food.
4. Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.
5. Critically analyse relevant material from a range of scientific and public information sources.
6. Explain scholarly and reflective perspectives through written and oral communication

This course is part of UNSW Food Science specializations approved (2021-2026) by the Institute of Food Technologists Higher Education Review Board (IFT HERB).


Teaching Strategies

As an Introductory Knowledge and General Education course, this course combines both didactic, deliberative and discursive learning activities to enable students achieve the course outcomes. The course will follow a semi-asynchronous format with students working through course content

Each topic will be introduced through a combination of weekly mini-lectures and online activities, where students will be encouraged to consider and debate the ethical considerations, social implications and technological challenges in delivering a safe, healthy, sustainable and affordable food supply globally. These self-directed online activities are also designed to inspire students on how they can make informed decisions regarding their food choices as well as considering ways to address global food issues such as climate change, poverty and increased population pressure on limited food resources.

Students will also be prepared to critically evaluate real-world issues via a series of self-directed online activities where they will draw on their prior knowledge and course learning to debate issues in a collaborative setting with their peers. Each student's general knowledge and understanding of the course content will be assessed via online quizzes. Students will demonstrate higher order learning through the portfolio task as collate readings from the scholarly and popular literature, and reflect on their connections course content, personal values and their broader program of study. Finally, the video presentation will develop peer learning communities as they work collaboratively to identify and evaluate solutions to current and future challenges in food production, composition, and consumption.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Quiz 1	35%	Not Applicable	2, 3, 4, 5, 6
2. Quiz 2	35%	Not Applicable	1, 2, 3, 4
3. Food science video 	30%	26/04/2022 12:00 AM	2, 3, 4, 5, 6
4. Bonus assessment	5%	Not Applicable	1, 2, 3, 4, 5, 6

Assessment 1: Quiz 1

Start date: 09/03/2022 03:00 PM

Assessment length: 30 minutes

Submission notes: Moodle quiz will open at 3:00pm and close at 3:30pm

In-class Moodle quiz in week 4. The quiz is 3-3.30 PM during class on Wednesday 09 March. Quiz is 30 minutes, consisting mostly of multiple choice or short-answer questions based on the lectures. This is designed to engage you with the content of the technical lectures, and to provide feedback on your progress in the course.

Assessment 2: Quiz 2

Start date: 20/04/2022 03:00 PM

Assessment length: 30 minutes

Online quiz consisting of multiple choice and short-answer questions based on the classes. Designed to engage you with the content of the technical lectures, and to provide feedback on your progress in the course.

Assessment 3: Food science video (Group)

Assessment length: ongoing from week five

Due date: 26/04/2022 12:00 AM

Student teams will prepare a video on a current or future challenge to our food systems. Groups will have the choice to select their own topic or choose from a list of topics. Teams will investigate the problem and proposed solutions to their chosen challenge. This will require teams to gather and review scholarly information related to the topic, investigate, and evaluate potential solutions. The video should highlight the problem and impacts, the evidence and the solution.

Team evaluation will be employed to account for individual contributions.

Assessment 4: Bonus assessment

Food Science and Technology students are encouraged to attend the first year weekend camp. Five bonus marks are given for attendance and participation.

Optional assignment for other students: Write a short essay explaining "why you studied this course/degree". Details on the assignment, and its submission, will be provided via Moodle posting.

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Schedule

[View class timetable](#)

Timetable

Date	Type	Content
Week 1: 14 February - 18 February	Lecture	Tu 15. Feb <ul style="list-style-type: none">• Food & Nutrition – a look back in time; JleC Wed 16. Feb <ul style="list-style-type: none">• Food categories and their sources; JleC• UNSW Food Science Association (FSA, 1h); J Licitra
Week 2: 21 February - 25 February	Lecture	Tu 22. Feb <ul style="list-style-type: none">• Chemistry of food components; AL Wed 23. Feb <ul style="list-style-type: none">• Food properties and functionality; AL
Week 3: 28 February - 4 March	Lecture	Tu 01. Mar <ul style="list-style-type: none">• Food and bugs – an introduction to microorganisms in food; JZ Wed 02. Mar <ul style="list-style-type: none">• Microbial food poisoning and spoilage; fermented foods; JZ
Week 4: 7 March - 11 March	Lecture	Tu 08. Mar <ul style="list-style-type: none">• Food safety – major food hazards; AL• (build teams for group assignment) Wed 09. Mar Quiz 1 <ul style="list-style-type: none">• Food Safety - how to ensure food

		<p>safety; AL</p> <ul style="list-style-type: none"> • Food Allergy - Public health and Food Safety; AL
Week 5: 14 March - 18 March	Lecture	<p>Tu 15. Mar</p> <ul style="list-style-type: none"> • Food engineering basics; ET <p>Wed 16. Mar</p> <ul style="list-style-type: none"> • Food preservation - principles and technologies; AJ • Thermal preservation (heating and cold chain); AJ
Week 6: 21 March - 25 March	Homework	<p>Flexibility week: Students to revise lessons learned so far, start working in teams & get started with group assignment.</p>
Week 7: 28 March - 1 April	Lecture	<p>Tu 29. Mar</p> <ul style="list-style-type: none"> • Food processing - drying, chemical methods, novel technologies; AJ <p>Wed 30. Mar</p> <ul style="list-style-type: none"> • Food packaging; JleC
Week 8: 4 April - 8 April	Lecture	<p>Tu 05. Apr</p> <ul style="list-style-type: none"> • Food for nutrition – nutritional requirements and sources of nutrients; how do we digest and absorb nutrients?; JA <p>Wed 06. Apr</p> <ul style="list-style-type: none"> • Food and health – major disorders of nutrient deficiency/over-consumption; JA
Week 9: 11 April - 15 April	Lecture	<p>Tu 12. Apr</p> <ul style="list-style-type: none"> • Food and consumers – wanting, liking & perception; JleC <p>Wed 13. Apr</p> <ul style="list-style-type: none"> • Sensory analysis - how do we taste food?; JleC
Week 10: 18 April - 22 April	Lecture	<p>Tu 19. Apr</p> <ul style="list-style-type: none"> • Landscape of the food industry; JleC

Wed 20. Apr

Quiz 2

- Foods for the future; JleC

Resources

Recommended Resources

There is no dedicated textbook for this course, though texts dealing with food science, and used in later courses, are available through the UNSW Bookshop and Library. You may consult or obtain these texts as references:

1. Hutton, T. (2004) Food Preservation: an introduction. Key Topics in Food Science and Technology, No. 9. Chipping Camden.
2. Vieira, E.R. (1996) Elementary food science. 4th ed. Chapman & Hall, New York.
3. Mark Wahlqvist (2011) Food and Nutrition. Food and Health Systems in Australia and New Zealand. 3rd Edition. ISBN: 9781741758979. A&U Academic, Australia.
4. Potter, N.N. and Hotchkiss, J.H. (1998) Food science. 5th ed. Chapman & Hall, New York.
5. Fellows, P.J. 1998, Food processing technology. Woodhead Publ. Ltd, London.
6. Excellent review articles summarising recent development and advances in areas of food science and technology are available from a range of journals. Students aiming for higher grades should get familiar with the recent literature. Some of the key journals are:
 - Food Technology
 - Trends in Food Sci. Tech.
 - Frontiers in Nutrition
 - Food Australia
 - NATURE Food.

All these journals can be accessed electronically through the UNSW Library.

<http://www.library.unsw.edu.au/servicesfor/students.html>

Course Evaluation and Development

Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, informal discussion in the final class for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

Submission of Assessment Tasks

In the School of Chemical Engineering, all written work will be submitted for assessment via Moodle unless otherwise specified. Attaching cover sheets to uploaded work is generally not required; when you submit work through Moodle for assessment you are agreeing to uphold the Student Code.

Some assessments will require you to complete the work online and it may be difficult for the course coordinator to intervene in the system after the due date. You should ensure that you are familiar with assessment systems well before the due date. If you do this, you will have time to get assistance before the assessment closes.

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work and should be treated with due respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

Marking guidelines for assignment submissions will be provided at the same time as assignment details to assist with meeting assessable requirements. Submissions will be marked according to the marking guidelines provided.

Late penalties

Unless otherwise specified, submissions received after the due date and time will be penalised at a rate of 5% per day or part thereof (including weekends). For some activities including Moodle quizzes and Team Evaluation surveys, extensions and late submissions are not possible.

Special consideration

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to submitting an assessment or sitting an exam.

UNSW has a [Fit to Sit / Submit rule](#), which means that if you attempt an exam or submit a piece of assessment, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's [Special Consideration page](#).

Please note that students will need to provide some documentary evidence to support absences from any assessments missed because of COVID-19 public health measures such as isolation. UNSW will **not** be insisting on medical certificates for COVID-related absences of 7 days or less, with the positive PCR or RAT result being sufficient. Longer absences due to self-isolation or COVID-related illness will still need documentation such as a medical certificate.

Applications for special consideration **will still be required** for assessment and participation absences related to COVID-19. Special consideration requests should not be lodged for missing classes if there are no assessment activities in that class.

Academic Honesty and Plagiarism

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage (International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013). At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and plagiarism can be located at:

- The [Current Students site](#)
- The [ELISE training site](#)

The Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism. Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>.

For assessments in the School of Chemical Engineering, we recommend the use of referencing software such as [Mendeley](#) or [EndNote](#) for managing references and citations. Unless required otherwise specified (i.e. in the assignment instructions) students in the School of Chemical Engineering should use either the APA 7th edition, or the American Chemical Society (ACS) referencing style as canonical author-date and numbered styles respectively.

Academic Information

To help you plan your degree, assistance is available from academic advisors in [The Nucleus](#) and also in the [School of Chemical Engineering](#).

Additional support for students

- [Current Student Gateway](#)
- [Engineering Current Student Resources](#)
- [Student Support and Success](#)
- [Academic Skills](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [IT Service Centre](#)

Course workload

Course workload is calculated using the Units-Of-Credit (UOC). The normal workload expectation for one UOC is approximately 25 hours per term. This includes class contact hours, private study, other learning activities, preparation and time spent on all assessable work.

Most coursework courses at UNSW are 6 UOC and involve an estimated 150 hours to complete, for both regular and intensive terms. Each course includes a prescribed number of hours per week (h/w) of scheduled face-to-face and/or online contact. Any additional time beyond the prescribed contact hours should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

On-campus class attendance

Physical distancing recommendations must be followed for all face-to-face classes. To ensure this, only students enrolled in those classes will be allowed in the room. Class rosters will be attached to corresponding rooms and circulated among lab demonstrators and tutors. No over-enrolment is allowed in face-to-face class. Students enrolled in online classes can swap their enrolment from online to a **limited** number of on-campus classes by Sunday, Week 1.

In certain classroom and laboratory situations where physical distancing cannot be maintained or the staff running the session believe that it will not be maintained, face masks will be designated by the course coordinator as **mandatory PPE** for students and staff. Students are required to bring and use their own face mask. Mask can be purchased from IGA Supermarket (Map B8, Lower Campus), campus pharmacy (Map F14, Middle Campus), the post office (Map F22, Upper Campus) and a vending machine in the foyer of the Biological Sciences Building (Map E26, Upper Campus).

Your health and the health of those in your class is critically important. You must stay at home if you are sick or have been advised to self-isolate by [NSW health](#) or government authorities. Current alerts and a list of hotspots can be found [here](#). Do not come to campus if you have any of the following symptoms: fever (37.5 °C or higher), cough, sore throat, shortness of breath (difficulty breathing), runny nose, loss of taste, or loss of smell. If you need to have a COVID-19 test, you must not come to campus and remain in self-isolation until you receive the results of your test.

You will not be penalised for missing a face-to-face activity due to illness or a requirement to self-

isolate. We will work with you to ensure continuity of learning during your isolation and have plans in place for you to catch up on any content or learning activities you may miss. Where this might not be possible, an application for fee remission may be discussed. Further information is available on any course Moodle or Teams site.

For more information, please refer to the FAQs: <https://www.covid-19.unsw.edu.au/safe-return-campus-faqs>

Image Credit

Photo: UNSW School of Chemical Engineering

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Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.