



UNSW Course Outline

FOOD1120 Food Science, Society and Sustainability - 2024

Published on the 15 May 2024

General Course Information

Course Code : FOOD1120

Year : 2024

Term : Term 2

Teaching Period : T2

Is a multi-term course? : No

Faculty : Faculty of Engineering

Academic Unit : School of Chemical Engineering

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Postgraduate, Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

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

Course Learning Outcomes
CL01 : Define introductory concepts in food science, including the components, properties, and functions of foods.
CL02 : Discuss how food science contributes to individual, societal, planetary, and economic health.
CL03 : Apply systems thinking to current and future challenges in the supplying the world with sufficient, sustainable, and nutritious food.
CL04 : Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.
CL05 : Critically analyse relevant material from a range of scientific and public information sources.
CL06 : Formulate scholarly and reflective perspectives through written and oral communication

Course Learning Outcomes	Assessment Item
CLO1 : Define introductory concepts in food science, including the components, properties, and functions of foods.	• Quizzes
CLO2 : Discuss how food science contributes to individual, societal, planetary, and economic health.	• Topical essay on Food Science • Food science video • Quizzes
CLO3 : Apply systems thinking to current and future challenges in the supplying the world with sufficient, sustainable, and nutritious food.	• Topical essay on Food Science • Food science video
CLO4 : Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.	• Quizzes • Topical essay on Food Science • Food science video
CLO5 : Critically analyse relevant material from a range of scientific and public information sources.	• Topical essay on Food Science • Food science video
CLO6 : Formulate scholarly and reflective perspectives through written and oral communication	• Topical essay on Food Science • Food science video

Learning and Teaching Technologies

Moodle - Learning Management System | Echo 360

Other Professional Outcomes

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

Additional Course Information

As in the previous year, we welcome students from the UNSW faculty of Medicine. As a result, FOOD-1120 will be presented to a large group made up to about 60% of students from the Engineering and Science faculties and about 40% of aspiring Dietitians from the faculty of Medicine.

Throughout the initial lectures and classes we will obtain a better understanding of the existing background knowledge in these cohorts and we might adapt the content accordingly.

It is expected that all students engage personally with the subject matter, with their peers, and with the teaching academics.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Quizzes Assessment Format: Individual	40%	Due Date: Week 4, Week 10
Topical essay on Food Science Assessment Format: Individual Short Extension: Yes (1 day)	30%	Start Date: Not Applicable Due Date: 11/08/2024 11:59 PM
Food science video Assessment Format: Group Short Extension: Yes (2 days)	30%	Start Date: Not Applicable Due Date: 11/08/2024 11:59 PM

Assessment Details

Quizzes

Assessment Overview

Students will complete online quizzes consisting of multiple choice and short-answer questions. The quizzes are designed to encourage student engagement with the content of the technical lectures and provide feedback on their progress in the course. Students will receive feedback in the form of correct answers and marks.

Course Learning Outcomes

- CL01 : Define introductory concepts in food science, including the components, properties, and functions of foods.
- CL02 : Discuss how food science contributes to individual, societal, planetary, and economic health.
- CL04 : Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.

Detailed Assessment Description

Student will complete Quiz 1 in Week 4 and Quiz 2 in Week 10.

Assessment Length

30 minutes

Assignment submission Turnitin type

Not Applicable

Topical essay on Food Science

Assessment Overview

Students will write a brief essay on a current topic in the context of Food Science. The topic will be announced in class. Students will receive feedback via written comments and marks against a rubric.

Course Learning Outcomes

- CLO2 : Discuss how food science contributes to individual, societal, planetary, and economic health.
- CLO3 : Apply systems thinking to current and future challenges in the supplying the world with sufficient, sustainable, and nutritious food.
- CLO4 : Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.
- CLO5 : Critically analyse relevant material from a range of scientific and public information sources.
- CLO6 : Formulate scholarly and reflective perspectives through written and oral communication

Detailed Assessment Description

Provide a forward looking essay (one-pager !) on the recent rise of GLP1 RA based weight loss drugs such as Ozempic or Wegovy. Please share your own thoughts about these treatments. Please discuss as well their impact on public health, economy, industry, and environment.

Assessment Length

1 page

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Food science video

Assessment Overview

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.

Students will receive written feedback and comments against a rubric. Team evaluation may be employed to account for individual contributions.

Course Learning Outcomes

- CL02 : Discuss how food science contributes to individual, societal, planetary, and economic health.
- CL03 : Apply systems thinking to current and future challenges in the supplying the world with sufficient, sustainable, and nutritious food.
- CL04 : Explain the contributions that people, professions, and food science disciplines can make to addressing current and future food challenges.
- CL05 : Critically analyse relevant material from a range of scientific and public information sources.
- CL06 : Formulate scholarly and reflective perspectives through written and oral communication

Detailed Assessment Description

Students will work in a group to complete this assignment and receive a group mark.

Assessment Length

3 minute video

General Assessment Information

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Introduction to Food Science Tu 28. May • Food & Nutrition Science – a look back in time • UNSW Food Science Association (FSA) Wed 29. May • Food categories and their sources
Week 2 : 3 June - 9 June	Lecture	Food Chemistry Tu 04. Jun • Chemistry of food components Wed 05. Jun • Food properties and functionality
Week 3 : 10 June - 16 June	Lecture	Food Microbiology Tu 11. Jun • Food and bugs – an introduction to microorganisms in food Wed 12. Jun • Microbial food poisoning and spoilage; fermented foods
Week 4 : 17 June - 23 June	Lecture	Food Safety Tu 18. Jun • Food safety – major food hazards for society • (build teams for group assignment) Wed 19. Jun • Quiz 1 • Food Safety - How to ensure food safety • Food Allergy - Public health and Food Safety
Week 5 : 24 June - 30 June	Lecture	Food Engineering and Processing Tu 25. Jun • Food Engineering in the Industry Wed 26. Jun • Engineering Fundamentals for Food Processing
Week 6 : 1 July - 7 July	Other	Flexibility week - No classes
Week 7 : 8 July - 14 July	Lecture	Food Preservation & Packaging Tu 09. Jul • Principles of food preservation • Traditional and novel technologies for food preservation Wed 10. Jul • The Food packaging dilemma: Shelf life and sustainability
Week 8 : 15 July - 21 July	Lecture	Sensory Analysis & Nutrition Tu 16. Jul • Sensory analysis - how do we taste food? Wed 17. Jul • Food for nutrition – nutritional requirements and sources of nutrients; how do we digest and absorb nutrients?
Week 9 : 22 July - 28 July	Lecture	Food & Health Tu 23. Jul • Food and health – major disorders of nutrient deficiency/over-consumption Wed 24. Jul • Guest lecture "Surprise Speaker"
Week 10 : 29 July - 4 August	Lecture	Food Security Tu 30. Jul • Food Anthropology – Consumers, wanting, liking & perception Wed 31. Aug • Quiz 2 • Foods for the future

Attendance Requirements

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

Course 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:

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.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Johannes le Coutre		SEB Room 437	02 9385 7195	9:00am - 5:00pm	No	Yes
Lecturer	Jayashree Arcot					No	No
	Ernest Tse					No	No
	Jian Zhao					No	No
	Yong Wang					No	No

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

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, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, 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](#).

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and policies. In particular, students should be familiar with the following:

- [Attendance](#)
- [UNSW Email Address](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: <https://www.unsw.edu.au/engineering/student-life/student-resources/program-design>.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be

awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School-specific Information

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. Most 6 UoC courses will involve approximately 10-12 hours per week of work on your part. If you're not sure what to do in these hours of independent study, the resources on the [UNSW Academic Skills](#) pages offer some suggestions including: making summaries of lectures, read/summarise sections from the textbook, attempt workshop problems, reattempting workshop problems with some hints from the solutions, looking for additional problems in the textbook.

Full-time enrolment at university means that it is a *full-time* occupation for you and so you would typically need to devote 35 hours per week to your studies to succeed. Full-time enrolment at university is definitely incompatible with full-time employment. Part-time/casual employment can certainly fit into your study schedule but you will have to carefully balance your study obligations with that work and decide how much time for leisure, family, and sleep you want left after fulfilling your commitments to study and work. Everyone only gets 168 hours per week; overloading yourself with both study commitments and work commitments leads to poor outcomes and dissatisfaction with both, overtiredness, mental health issues, and general poor quality of life.

On-campus Class Attendance

Most classes at UNSW are "In Person" and run in a face-to-face mode only. Attendance and participation in the classes is expected. As an evidence-driven engineer or scientist, you'll be interested to know that education research has shown students learn more effectively when they come to class, and less effectively from lecture catch-up recordings. If you have to miss a class due to illness, for example, we expect you to catch up in your time, and within the coming couple of days.

For most courses that are running in an "in person" mode:

- Lectures are normally recorded to provide an opportunity to review material after the lecture; lecture recordings are not a substitute for attending and engaging with the live class.
- Workshops/tutorials are not normally recorded as the activities that are run within those sessions normally cannot be captured by a recording. These activities may also include

assessable activities in some or all weeks of the term.

- Laboratories are not recorded and require in-person attendance. Missing laboratory sessions may require you to do a make-up session later in the term; if you miss too many laboratory sessions, it may be necessary to seek a Permitted Withdrawal from the course and reattempt it next year, or end up with an Unsatisfactory Fail for the course.
- Assessments will often require in-person attendance in a timetabled class or a scheduled examination.

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 *not* required unless specifically requested for an individual assessment task; 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 respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect. Please make it easy for the markers who are looking at your work to see your achievement and give you due credit.

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.

Academic Integrity

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>.

To help describe what we are looking for, here are some things that we consider to be quite acceptable (even desirable!) actions for many assessments, and some that we consider to be unacceptable in most circumstances. Please check with the instructions for your assessments and your course coordinator if you're unsure. As a rule of thumb, if you don't think you could look the lecturer in the eye and say "this is my own work", then it's not acceptable.

Acceptable actions

- ☒ reading/searching through material we have given you, including lecture slides, course notes, sample problems, workshop problem solutions
- ☒ reading/searching lecture transcripts
- ☒ reading/searching resources that we have pointed you to as part of this course, including textbooks, journal articles, websites
- ☒ reading/searching through your own notes for this course
- ☒ all of the above, for any previous courses
- ☒ using spell checkers, grammar checkers etc to improve the quality of your writing
- ☒ studying course material with other students

Unacceptable actions

- ☒ asking for help completing an assessment from other students, friends, family
- ☒ asking for help on Q&A or homework help websites
- ☒ searching for answers to the specific assessment questions online or in shared documents
- ☒ copying material from any source into your answers
- ☒ using generative AI tools to complete or substantially complete an assessment for you

✗ paying someone else to do the assessment for you

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.

Artificial intelligence tools such as ChatGPT, CodePilot, and built-in tools within Word are modern tools that are useful in some circumstances. In your degree at UNSW, we're teaching you skills that are needed for your professional life, which will include how to use AI tools responsibly plus lots of things that AI tools cannot do for you. AI tools already are (or will soon be) part of professional practice for all of us. However, if we were only teaching you things that AI could do, your degree would be worthless, and you wouldn't have a job in 5 years.

Whether the use of AI tools in an assessment is appropriate will depend on the goals of that assessment. As ever, you should discuss this with your lecturers – there will certainly be assessments where the use of AI tools is encouraged, as well as others where it would interfere with your learning and place you at a disadvantage later. Our goal is to help you learn how to ethically and professionally use the tools available to you. To learn more about the use of AI, [see this discussion we have written](#) where we analyse the strengths and weaknesses of generative AI tools and discuss when it is professionally and ethically appropriate to use them.

While AI may provide useful tools to help with some assessments, UNSW's policy is quite clear that taking the output of generative AI and submitting it as your own work will never be appropriate, just as paying someone else to complete an assessment for you is serious misconduct.

Asking Questions

Asking questions is an important part of learning. Learning to ask good questions and building the confidence to do so in front of others is an important professional skill that you need to develop. The best place to ask questions is during the scheduled classes for this course, with the

obvious exception being questions that are private in nature such as special consideration or equitable learning plans. Between classes, you might also think of questions – some of those you might save up for the next class (write them down!), and some of them you might ask in a Q&A channel on Teams or a Q&A forum on Moodle. Please understand that staff won't be able to answer questions on Teams/Moodle immediately but will endeavour to do so during their regular working hours (i.e. probably not at midnight!) and when they are next working on this particular course (i.e. it might be a day or two). Please respect that staff are juggling multiple work responsibilities (teaching more than one course, supervising research students, doing experiments, writing grants, ...) and also need to have balance between work and the rest of their life.

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.

For course administration matters, please contact the Course Coordinator.

Questions about the this course should normally be asked during the scheduled class so that everyone can benefit from the answer and discussion.