UNSW Course Outline

# FOOD4110 Advanced Food Chemistry - 2024

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## General Course Information

**Course Code :** FOOD4110
**Year :** 2024
**Term :** Term 3
**Teaching Period :** T3
**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 :** Undergraduate
**Units of Credit :** 6

**Useful Links**

Handbook Class Timetable

## Course Details & Outcomes

### Course Description

In the era marked by rising life expectancy and looming threat of climate change, fostering a healthy population, and ensuring sustainable food production are crucial national priorities. How does food influence our quality of life? In what way can food contribute to healing and how can

advancements of food science mitigate the impacts of climate change? These are the grand challenging questions that demand innovative scientific and technological solutions in the future.

Welcome to Advanced Food Chemistry. In this course, you will develop the knowledge base and technical skills to control and manipulate food molecules and their reactions. You will learn how to stabilise food molecules to prolong shelf life (e.g., food additives), how to make food more appealing and pleasant to eat (e.g., food colourants and food flavours), how to make food processing more environmentally sustainable (e.g., food enzymes), and how to make foods that heal (e.g., bioactive phytochemicals). By integrating food chemistry knowledge and skills into food science and technology, you will be able to design and formulate innovative food products of your desire.

## Course Aims

This course aims to enable students to develop a deeper understanding of the relationships between the structure and functional properties of food molecules (particularly food enzymes, plant bioactive constituents (e.g., polyphenols, food additives, food colourants and food aromas) and how they may be manipulated through food technology and processing.

## Relationship to Other Courses

The prerequisite for this course is satisfactory completion of FOOD2921. In designing this course, it is assumed that the students are familiar with basic elements of chemistry, food chemistry (e.g., food composition) and analytical chemistry. These will be frequently referred to, but will not be repeated in the course. If you encounter difficulties in understanding these concepts, please review these elements by consulting the appropriate recommended books.

## Course Learning Outcomes

| Course Learning Outcomes |
| --- |
| CLO1 : Demonstrate advanced understanding of food chemistry principles. |
| CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods. |
| CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem. |
| CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles. |

| Course Learning Outcomes | Assessment Item |
|---|---|
| CLO1 : Demonstrate advanced understanding of food chemistry principles. | • Assignment 1 - Product Survey of Food Ingredients and Functionality<br>• Progress Exam<br>• Assignment 2 - Written report<br>• Final Exam |
| CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods. | • Assignment 1 - Product Survey of Food Ingredients and Functionality<br>• Progress Exam<br>• Assignment 2 - Written report<br>• Final Exam |
| CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem. | • Assignment 1 - Product Survey of Food Ingredients and Functionality<br>• Progress Exam<br>• Assignment 2 - Written report<br>• Final Exam |
| CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles. | • Assignment 1 - Product Survey of Food Ingredients and Functionality<br>• Progress Exam<br>• Assignment 2 - Written report<br>• Final Exam |

## Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams | Echo 360

## Learning and Teaching in this course

This course will teach principles of food chemistry to facilitate understanding of concepts and increase the knowledge base of food chemistry. Students become more engaged in the learning process if they can see the relevance of their studies to professional, disciplinary and/or personal contexts. Thus, the course adopts contextualising approach by providing opportunities to relate the leant food chemistry concepts to the real food systems via product surveys and group assignments. This is also to facilitate critical thinking and judgement for the development of a creative mind for future food innovation (i.e., "thinking outside the box"), as well as further develop several graduate attribute skills such as writing professional reports and communicating.

## Other Professional Outcomes

This course is part of UNSW Food Science specialisations approved (2021-2026) by the Institute of Food Technologists Higher Education Review Board (IFT HERB). The following is the alignment of the UNSW Course Learning Outcomes to the IFT Essential Learning Outcomes:

- *Course Learning Outcome 1:*

FC.1. Discuss the major chemical reactions that limit shelf life of foods.

FC.2. Explain the chemistry underlying the properties and reactions of various food components.

- *Course Learning Outcome 2:*

FC.1. Discuss the major chemical reactions that limit shelf life of foods.

FC.2. Explain the chemistry underlying the properties and reactions of various food components.

FC.3. Apply food chemistry principles used to control reactions in foods.

- *Course Learning Outcomes 3:*

FC.6. Explain the principles behind analytical techniques associated with food.

FC.8. Design an appropriate analytical approach to solve a practical problem.

- *Course Learning Outcomes 4:*

CT 2 Apply critical thinking skills to solve problems.

CT 3 Apply principles of food science in practical, real-world situations and problems.

CT 5 Evaluate scientific information.

PL 1 Demonstrate the ability to work independently and in teams.

FC = Food Chemistry; CT = Critical Thinking; PL = Professionalism and Leadership

# Assessments

## Assessment Structure

| Assessment Item | Weight | Relevant Dates |
|---|---|---|
| Assignment 1 - Product Survey of Food Ingredients and Functionality<br>Assessment Format: Group | 10% | Start Date: Not Applicable<br>Due Date: 27/09/2024 09:00 PM |
| Progress Exam<br>Assessment Format: Individual | 15% | Start Date: Not Applicable<br>Due Date: 07/10/2024 12:00 PM |
| Assignment 2 - Written report<br>Assessment Format: Individual<br>Short Extension: Yes (1 day) | 40% | Start Date: Not Applicable<br>Due Date: 15/11/2024 09:00 PM |
| Final Exam<br>Assessment Format: Individual | 35% | Start Date: Not Applicable<br>Due Date: Exam Period |

## Assessment Details

### Assignment 1 - Product Survey of Food Ingredients and Functionality

**Assessment Overview**

This is a group assessment involves a product survey and assesses student understanding of food ingredients and their functionality.

**Course Learning Outcomes**

- CLO1 : Demonstrate advanced understanding of food chemistry principles.
- CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods.
- CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem.
- CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles.

**Detailed Assessment Description**

This is a group assessment based on the food ingredients and functionality through a product survey. Please refer to the Assignment 1 sheet for detailed assessment criteria.

**Assignment submission Turnitin type**

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

**Generative AI Permission Level**

**No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

## Progress Exam

**Assessment Overview**

This exam assesses students knowledge and understanding of the chemical fundamentals presented in the early weeks of term and its application to problem-based inquiry. The progress exam is intended primarily as formative assessment.

**Course Learning Outcomes**

- CLO1 : Demonstrate advanced understanding of food chemistry principles.
- CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods.
- CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem.
- CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles.

**Detailed Assessment Description**

Individual assessment of the knowledge and understanding of the chemical fundamentals presented in Weeks 1-3 and application to problem-based inquiry. The first two topics will be examined - more information about the progress exam will be given later. The progress exam is intended primarily as a formative assessment, but is counted towards the final mark at a significant level to
encourage you to take it seriously.

**Assessment Length**

1h

**Assignment submission Turnitin type**

Not Applicable

**Generative AI Permission Level**

**No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate

information or answers.

For more information on Generative AI and permitted use please see here.

## Assignment 2 - Written report

**Assessment Overview**

Students will demonstrate independent and reflective learning by applying food chemistry knowledge to a specific food innovation. The assignment will be assessed on the thoroughness of the review, the clarity of expression and logical discussion supported by evidence, as well as demonstrated critical thinking and reasoned judgment.

**Course Learning Outcomes**

- CLO1 : Demonstrate advanced understanding of food chemistry principles.
- CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods.
- CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem.
- CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles.

**Detailed Assessment Description**

Individual and group assessments on review and critical analysis of one current ((bio)chemical based) food challenge and develop/assess one potential solution (problem-based critical thinking). Please refer to the Assignment 2 sheet for detailed assessment criteria.

There are three sub-components to this assignment:
Week 4 (individual topic proposal - individual assessment 5% )
Week 7 (review outline - peer assessment 5%)
Week 10 (final report 30%)

**Assignment submission Turnitin type**

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

**Generative AI Permission Level**

**Planning/Design Assistance**

You are permitted to use generative AI tools, software or services to generate initial ideas, structures, or outlines. However, you must develop or edit those ideas to such a significant extent

that what is submitted is your own work, i.e., what is generated by the tool, software or service should not be a part of your final submission. You should keep copies of your iterations to show your Course Authority if there is any uncertainty about the originality of your work.
If your Convenor has concerns that your answer contains passages of AI-generated text or media that have not been sufficiently modified you may be asked to explain your work, but we recognise that you are permitted to use AI generated text and media as a starting point and some traces may remain. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

## Final Exam

### Assessment Overview

Students will be examined on their understanding all of the materials not examined elsewhere. The exam assesses students knowledge and skills of advanced aspects of food chemistry and their readiness to apply them to future learning and careers.

### Course Learning Outcomes

- CLO1 : Demonstrate advanced understanding of food chemistry principles.
- CLO2 : Distinguish how the functionality and reactions of food ingredients influence the specific quality attributes of foods.
- CLO3 : Design an appropriate analytical approach to solve a practical food chemistry problem.
- CLO4 : Formulate potential solutions to a chosen food challenge using food chemistry principles.

### Detailed Assessment Description

More information regarding the final exam will be given close to the exam week.

### Assessment Length

2h

### Assignment submission Turnitin type

Not Applicable

### Hurdle rules

To pass the course, you must achieve at least 40% in your final exam

### Generative AI Permission Level

**No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

## General Assessment Information

All in-Term assessments in this course are conducted through your Moodle course page. Please read through this Course Outline and related Moodle/TEAMS Announcement posts for information about your assessments.

The final examination will be conducted during the exam period. Please check your Exam Timetable, when released, for information.

### Grading Basis

Standard

### Requirements to pass course

To pass the course, you must achieve at least 40% in your final exam.

# Course Schedule

| Teaching Week/Module | Activity Type | Content |
|---|---|---|
| Week 0 : 2 September - 8 September | Other | Welcome Introduction to the course |
| Week 1 : 9 September - 15 September | Lecture | Understanding Food Additives: Balancing Flavor, Texture, and Shelf Life (LH) |
| | Workshop | Understanding Food Additives: Balancing Flavor, Texture, and Shelf Life (LH) |
| Week 2 : 16 September - 22 September | Lecture | Understanding Food Additives: Balancing Flavor, Texture, and Shelf Life (LH)<br>The Science of Food Colorants: Adding Life to Food (JB) |
| | Workshop | Understanding Food Additives: Balancing Flavor, Texture, and Shelf Life (LH) |
| Week 3 : 23 September - 29 September | Lecture | The Science of Food Colorants: Adding Life to Food (JB) |
| | Workshop | The Science of Food Colorants: Adding Life to Food (JB) |
| | Assessment | Assignment 1 (10%): Product Survey of Food Ingredients and Functionality - Due Friday 9 PM |
| Week 4 : 30 September - 6 October | Lecture | Role of Phytochemical Bioactive Constituents in Foods (AL) |
| | Workshop | Role of Phytochemical Bioactive Constituents in Foods (AL) |
| | Assessment | Assignment 2 Task 1 (5%): Individual topic proposal – Due Friday 9 PM |
| Week 5 : 7 October - 13 October | Lecture | Role of Phytochemical Bioactive Constituents in Foods (AL)<br>Analysis of phytochemical antioxidants (AL) |
| | Workshop | Role of Phytochemical Bioactive Constituents in Foods (AL)<br>Analysis of phytochemical antioxidants (AL) |
| | Assessment | Mid-Term Exam – Monday 7 Oct |
| Week 6 : 14 October - 20 October | Other | Group Consultation on Assignment 2 |
| Week 7 : 21 October - 27 October | Lecture | Aroma and Flavour Chemistry: Enhancing Food Sensory Experiences (KSM) |
| | Workshop | Aroma and Flavour Chemistry: Enhancing Food Sensory Experiences (KSM) |
| | Assessment | Assignment 2 Task 2 (5%): one-page report outline (peer assessment) - Due Friday 9 PM |
| Week 8 : 28 October - 3 November | Lecture | Applications and Analysis of Food Flavour Substances (KSM) |
| | Workshop | Applications and Analysis of Food Flavour Substances (KSM) |
| Week 9 : 4 November - 10 November | Lecture | Enzymes at Work: How Food Enzymes Transform Ingredients (AL) |
| | Workshop | Enzymes at Work: How Food Enzymes Transform Ingredients (AL) |
| Week 10 : 11 November - 17 November | Lecture | Enzymes at Work: How Food Enzymes Transform Ingredients (AL)<br>Applications of Food Enzymes in the Food Industry (AL) |
| | Workshop | Enzymes at Work: How Food Enzymes Transform Ingredients (AL)<br>Applications of Food Enzymes in the Food Industry (AL) |
| | Assessment | Assignment 2 Task 3 (30%): Full Report – Due Friday 9 PM |

## Attendance Requirements

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

## General Schedule Information

The course schedule consists of 2 x 2h lectures on Mondays 12:00 PM - 2:00 PM (Mathews 105) and Wednesdays 12:00 PM - 2:00 PM (Mathews 105), and 1 x 1h workshop 4:00 PM - 5:00 PM (Ainsworth 201)

Please note that several lecturers will be teaching this course and each lecturer may have a different approach. Students are therefore expected to frequently check Moodle and their emails

for any announcements.

# Course Resources

## Prescribed Resources

There is no prescribed textbook for this course. However, there are several recommended textbooks and reference books

## Recommended Resources

- Principles of Food Chemistry 3rd Ed (John M Deman, John W Finley, W Jeffrey Hurst, Chang Yong Lee) Springer 2018
- Fennema's Food Chemistry, 5th edition (Srinivasan Damodaran, Kirk L. Parkin Eds). Copyright
- 2017 (4th ed is also useful)

**Useful:**

- Food Chemistry 3rd Ed (Hans-Dieter Belitz, Werner Grosch, Peter Schieberle) Springer 2009

*Please refer to Leganto for additional recommended resources for each topic.*

## Course Evaluation and Development

The School of Chemical Engineering evaluates each course each time it is run through (i) myExperience Surveys, and (ii) Focus Group Meetings. As part of the myExperience process, your student evaluations on various aspects of the course are seriously considered; the Course Coordinator prepares a summary report for the Head of School. Any problem areas are identified for remedial action, and ideas for making improvements to the course are noted for action the next time that the course is run. Focus Group Meetings are conducted each term.
Student comments on each course are collected and disseminated to the Lecturers concerned, noting any points which can help improve the course.

All of the activities in this course from the online lessons through to the team assignments have been designed in response to student feedback.

# Staff Details

| Position | Name | Email | Location | Phone | Availability | Equitable Learning Services Contact | Primary Contact |
|---|---|---|---|---|---|---|---|
| Convenor | Alice Lee | | | | Via email or appointment | No | Yes |
| Lecturer | Luke Hunter | | | | | No | No |
| | Jon Beves | | | | | No | No |
| | Karin Schaffarczyk McHale | | | | | 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 polices. 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 Plagarism

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 suceed. 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 fullfilling 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 might 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.