FSHN1010: Introduction to Food Science and Technology

Ourimbah Semester 2 - 2023



OVERVIEW

Course Description

The supply of safe, high-quality food is essential in our modern society. This course will examine the food supply chain and factors contributing to the quality of food commodities. Students are introduced to the principles of the scientific study of food through case studies and experiential laboratory learning, and will explore the chemical, physical, sensory, and microbiological properties of food commodities. Principles for the safe supply of food are established, as are mandatory requirements and voluntary aspects of food product labelling. At the completion of this course students will have gained an appreciation of the scope and breadth of food science and be able to work safely and effectively in kitchen and laboratory environments.

Ourimbah Laboratory * Face to Face On Campus

3 hour(s) per Week for Full Term Students must participate and submit reports for a minimum of 80% of the scheduled laboratory sessions.

Lecture

10

Face to Face On Campus 2 hour(s) per Week for Full Term

* This contact type has a compulsory requirement.

Unit Weighting

Workload Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.





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CONTACTS

Course Coordinator	Ourimbah Dr Taiwo Akanbi <u>Taiwo.Akanbi@newcastle.edu.au</u> (02) 43484117 Consultation: By appointment
Teaching Staff	Other teaching staff will be advised on the course Canvas site
School Office	School of Environmental and Life Sciences SO-104 Science Offices OURIMBAH Science-SELS@newcastle.edu.au (02) 4349 4568 / (02) 4348 4115 9am-5pm (Mon-Fri)

SYLLABUS

Course Content

This course includes the following topics:

- 1. Feeding the world: the world's food supply chain including Australia's role as a food supplier, and major supply problems.
- 2. Factors in the selection and preparation of food: individual and social differences.
- 3. Sensory aspects, including sensory properties and responses and their measurement.
- 4. Chemical composition and properties of food components, food formulations, additives and food labelling.
- 5. Biological structures and properties of foods, food safety & HACCP in food service.
- 6. Physical properties of foods and the relationship of sensory to physical parameters.
- 7. Structure, composition, properties and essential processing of a selection of water-based foods, protein-based foods, carbohydrate based foods, and oil-based foods.

Course Learning Outcomes

On successful completion of this course, students will be able to:

- 1. Discuss the global management of food commodities and issues in the supply of a safe and adequate daily intake.
- 2. Compare the contributions of individual, cultural and religious differences to food selection and preparation.
- 3. Match the principles of food science and laboratory-based evaluation of food properties to constituents, their reactions and applications.
- 4. Apply the scientific method of enquiry as it relates to the measurement of sensory, chemical and physical properties of foods.
- 5. Implement safe laboratory & kitchen practice, including wearing of appropriate personal protective equipment, safe handling of chemicals and laboratory equipment and safe disposal of chemicals according to the relevant safety data sheets (SDS).



COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements:

- Laboratory Induction Requirement - Students must attend and pass the induction requirements before attending these sessions. In order to participate in this course, students must complete a compulsory safety induction.

Course Assessment Requirements:

Assessment 1 - Tutorial / Laboratory Exercises: Pass Requirement - Students must pass this assessment item to
pass the course. Students undertaking this course are required to demonstrate practical and theoretical
competency in laboratory-based learning. Feedback will be provided for laboratory exercises and reports
throughout the course.

SCHEDULE

Week	Week Begins	Торіс	Learning Activity	Assessment Due		
1	17 Jul	Overview of Food Science	Compulsory Safety Induction	Safety Quiz - MUST be		
				prior to being admitted in		
				the Lab in week 2.		
2	24 Jul	Food Composition 1	Lab 1. Proteins & Peptides	Homework Quiz 1		
				(Formative)		
3	31 Jul	Food Composition 2	Lab 2. Sugars & Sweeteners	Homework Quiz 2 (Formative)		
4	7 Aug	Food Quality & Sensory Evaluation	Lab 3. Acids and pH	Homework Quiz 3 (Formative)		
5	14 Aug	Food Deterioration and	NO LAB - Optional Lab	Homework Quiz 4		
	-	Safety	Report Workshop	(Formative)		
				LAB REPORT 1 (Covers		
				contents from Labs 1-3)		
6	21 Aug	Introduction to Postharvest	Lab 4. Fats & Oils	Homework Quiz 5		
		Technology 1		(Formative)		
7	28 Aug	Introduction to Postharvest	Lab 5. Dissolved Solids &	Homework Quiz 6		
		Technology 2	Osmosis	(Formative)		
8	4 Sep	Introduction to Food	Lab 6. Colligative Properties	Homework Quiz /		
	11 Can	Processing Devision Section	And Viscosity			
9	пбер	(Leb Benert Workshop)	NO LAB - Optional Lab	Formetive)		
LAB REPURT 2 (COV contents from Labs 4						
10	18 Sen	Food Regulation & Labelling	Labs 7 Elavour & Cellular	Homework Quiz 9		
	10 000		Structures	(Formative)		
		Mid Ter	m Break	(Formative)		
		Mid Ter	m Break			
11	9 Oct	Food Packaging and	Labs 8. Sensory Testing and	Homework Quiz 10		
		Distribution	Taste Genetics	(Formative)		
12	16 Oct	Food Sustainability and	NO LAB - Lab Report	Homework Quiz 11		
		Security		(Formative)		
				LAB REPORT 3 (Covers		
				contents from Labs 7-8)		
13	23 Oct	Revision Session	Revision - Free for	Revision		
			Consultations			
Examination Period						
Examination Period						



ASSESSMENTS

This course has 2 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Laboratory Practical Exercises & Reports*	Report 1: Friday Week 5 (18th August) Report 2: Friday Week 9 (15th September) Report 3: Friday Week 12 (20th October)	Group	50%	3, 4, 5
2	Formal Examination	Formal exam period	Individual	50%	1, 2, 3, 4

* This assessment has a compulsory requirement.

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Laboratory Practical Exercises & Reports

Assessment Type	Tutorial / Laboratory Exercises
Purpose	The purpose of group and laboratory activity is to enable peer-to-peer learning; develop oral communication skills and the ability to record data, synthesize an opinion and convey this clearly in a well presented and articulate manner.
Description	Lab exercises, reports on lab content and case studies. Individual reports submitted
	(Three reports: Report 1 = 15%; Report 2 = 15%; Report 3 = 20%)
Weighting	50%
Compulsory	Pass Requirement - Students must pass this assessment item to pass the course.
Requirements	
Due Date	Report 1: Friday Week 5 (18th August)
	Report 2: Friday Week 9 (15th September)
	Report 3: Friday Week 12 (20th October)
Submission Method	Online
	The assessment is to be submitted online, usually via Canvas or Turnitin.
Assessment Criteria	Students will be assessed on the quality of their reports. Assessment rubrics will be available on Canvas.
Return Method	Online
Feedback Provided	Returned Work - Two weeks after submission. Returned Work: Feedback will be supplied directly on returned work. Verbal feedback will also be provided during laboratory session.
Opportunity to	Students WILL NOT be given the opportunity to reattempt this assessment.
Reattempt	NA

Assessment 2 - Formal Examination

Assessment Type Purpose	Formal Examination The final formal examination is designed to test the individual student's knowledge of the course material and their ability to describe, analyse and hypothesise from this material.
Description	Final formal exam in formal exam period
Weighting	50%
Due Date	Formal exam period
Submission Method	Formal Exam
Assessment Criteria	Details about the structure of the exam will be provided on Canvas prior to exam.
Return Method	Not Returned
Feedback Provided	No Feedback.



ADDITIONAL INFORMATION

Grading Scheme

This course	is	graded	l as fo	llows:

	Range of Marks	Grade	Description
	85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
	75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
	65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
	50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
	0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.
	*Skills are th	ose identified f	or the purposes of assessment task(s).
Attendance	Attendance/p	participation wi	Il be recorded in the following components:
	- Labor	atory (Method	of recording: Class roll)
WH&S Requirements	Students mu Safety for sta Safety Induc Assessment the semester	st attend, parti aff and student tion sessions and Health &S r.	cipate and submit report for at least 80% of scheduled sessions. s is taken very seriously by the University. Mandatory Laboratory will occur during the first week. Students will be advised of Risk safety requirements by the Course Coordinator at the beginning of
Communication	Communicat	ion methods u	sed in this course include:
Canvas Course Site: Students will receive commannouncements on the Canvas course site.			: Students will receive communications via the posting of content or the Canvas course site.
	- Email - Facet	: Students will to Face: Comm	receive communications via their student email account. nunication will be provided via face-to-face meetings or supervision.
Course Evaluation	Each year for offered in th improvement	eedback is so e University fo t.	ught from students and other stakeholders about the courses or the purposes of identifying areas of excellence and potential
Oral Interviews (Vivas)	As part of the (viva) may be material sub conducted in In cases whe own work the	e evaluation pr e conducted. Th mitted in resp accordance w ere the oral ex e case will be c	ocess of any assessment item in this course an oral examination he purpose of the oral examination is to verify the authorship of the ponse to the assessment task. The oral examination will be ith the principles set out in the <u>Oral Examination (viva) Procedure</u> . amination reveals the assessment item may not be the student's lealt with under the <u>Student Conduct Rule</u> .



Academic Misconduct	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <u>https://policies.newcastle.edu.au/document/view-current.php?id=35</u> .				
Adverse Circumstances	The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:				
	 the assessment item is a major assessment item; or the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system; you are requesting a change of placement; or the course has a compulsory attendance requirement. 				
	Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at: https://policies.newcastle.edu.au/document/view-current.php?id=236				
Important Policy Information	The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at: <u>https://www.newcastle.edu.au/current-students/no-room-for/policies-and-procedures</u> that support a safe and respectful environment at the University.				

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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