

FSHN3010: Food Processing and Quality Management

Ourimbah

Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description

The current patterns of food consumption indicate a strong consumer preference for processed food products, as they are very economical and last much longer than fresh produce which are not compatible with today's lifestyle. It is, therefore, very important to have a clear understanding of the principles of the processes involved as well as the methods employed to ensure quality standards.

This course examines food processing systems and food quality management systems. Particular emphasis is on the principles of the various operations including pre-processing, food processing operations and post-processing, as well as on the application of Hazard Analysis Critical Control Point (HACCP) to food production with the aim of producing quality food that meets consumer expectations and food safety standards regulated by the authorities. By completing this course, students will appreciate the principles of food processing and food quality management.

Academic Progress Requirements

Nil

Assumed Knowledge

To facilitate success at this course students are expected to have successfully completed FSHN2040, FSHN2050, & FSHN2100, and to have a high-school level knowledge in algebra (equivalent to MATH1001).

Contact Hours

Ourimbah

Laboratory *

Face to Face On Campus

3 hour(s) per week(s) for 13 week(s) starting Week 1

Lecture

Face to Face On Campus

2 hour(s) per week(s) for 13 week(s) starting Week 1

* This contact type has a compulsory requirement.

Unit Weighting

10

Workload

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

COURSE OUTLINE

CONTACTS

Course Coordinator	Ourimbah Dr Penta Pristijono Penta.Pristijono@newcastle.edu.au (02) 43494783 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 CESE-SELS@newcastle.edu.au (02) 4349 4568 / 4348 4115 9am-5pm (Mon-Fri)

SYLLABUS

Course Content	<ol style="list-style-type: none">1. Unit operations involved in food processing systems, which include pre-processing and post-processing.2. Food processing by thermal application, heat removal and at ambient temperature.3. Production automation, physical, chemical and microbiological considerations.4. Food Quality Management Systems with emphasis on Hazard Analysis Critical Control.5. Point (HACCP) concept, flow charts, hazards identification, control points and corrective actions.6. Good manufacturing practices (GMP) include hygiene and sanitation.
Course Learning Outcomes	<p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Describe and outline the principles of food processing design and production techniques;2. Collect and interpret the data from experiments in different food processing operations;3. Analyse the quality parameters of food products from different food processing operations;4. Generate a quality management system based on the Hazard Analysis Critical Control Point (HACCP) principles to food processing;5. Identify and explain issues relevant to food processing and food quality management systems.
Course Materials	<p>Other Resources:</p> <p>Course Canvas site Students enrolled in the course can login https://canvas.newcastle.edu.au/ to access the course Canvas site used to support this course. You need to visit the course Canvas site on a regular basis.</p> <p>Recommended Text:</p> <ul style="list-style-type: none">- Fellows, P. (2017). Food processing technology: principles and practice: Woodhead. Amsterdam, Woodhead Publishing, (available as an e-book).- Mortimore, S. E., & Wallace, C. A. (2015). HACCP: a food industry briefing (2 ed.). Chichester, West Sussex, UK: Wiley. (available as an e-book)- Ohlsson, T. B. N. (2002). Minimal processing technologies in the food industries:

Woodhead Publishing. (available as an e-book).

- Lelieveld, H. L. M., Holah, J. T., & Napper, D. (2014). Hygiene in Food Processing - Principles and Practice (Second Edition ed.): Woodhead Publishing. (available as an e-book)
- Wills, R., McGlasson, B., Graham, D. & Joyce, D. (2007). Postharvest. An Introduction to the Physiology of Fruit, Vegetables & Ornamentals. UNSW Press, Australia.
- Charley, H. & Weaver, Foods A Scientific Approach USA: Merrill; 1998.
- Several publications dealing with the subject of Quality Management and HACCP are available in the library and as electronic resources.
- Note that this list is not exhaustive and that omission from this list does not imply that textbooks not included are not suitable for the course.

COMPULSORY REQUIREMENTS

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

Contact Hour Requirements:

- Laboratory Attend 80% of sessions

Course Assessment Requirements:

- Assessment 1 - Laboratory Reports: Pass requirement - Must pass this assessment item to pass the course.

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Introduction	Lecture 1 - Introduction to the course No Lab	
2	4 Mar	Food Processing	Lecture 2 - Food Processing (Pre-processing) Lab 1 - Drying Methods 1 Laboratory Safety Induction	
3	11 Mar	Food Processing	Lecture 3 - Food processing (Processing by heat application) Lab 2 - Drying Methods 2 (product assessment)	
4	18 Mar	Quality Management	Lecture 4 - Quality Management 1 Lab 3 - Juice Processing 1	
5	25 Mar	Quality Management	Lecture 5 - Quality Management 2 Lab 4 - Juice Processing 2 (Juice assessment) Lab 5 - Jam Manufacture 1	Lab Report 1 - Drying Methods, Tuesday 26 March 2024
6	1 Apr	Public holiday	No Lecture No Lab	
7	8 Apr	Quality Management	Lecture 6 - Quality Management 3 Lab 6 - Jam Manufacture 2 (product testing) Work on Quality Management Assignment	Lab Report 2 - Juice Processing Report, Tuesday 09 April 2024
Mid-Semester Recess				

Mid-Semester Recess

Mid-Semester Recess				
8	29 Apr	Quality Management	Lecture 7 - Quality Management 4 Work on Quality Management Assignment	
9	6 May	Food Processing	Lecture 8 - Food Processing (Processing by Heat Removal) Lab 8 - Canning 1	Quality Management Report, Tuesday 7 May 2024
10	13 May	Food Processing	Lecture 9 - Food Processing (Processing At Ambient Temperature 1) Lab 9 - Canning 2 (product assessment)	
11	20 May	Food Processing	Lecture 10 - Food Processing (Processing At Ambient Temperature 2 and Post-Processing 1) Lab 10 - Freeze dried egg products 1	Lab Report 3 - Canning Report, Tuesday 21 May 2024
12	27 May	Food Processing	Lecture 11 - Food Processing (Post-processing 2) Lab 11 - Freeze dried egg products 2	
13	3 Jun	Revision Week	Lecture 12 - Revision No Lab	
Examination Period				
Examination Period				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Laboratory Reports*	Lab Report 1 - Drying Methods, Tuesday 26 March 2024 Lab Report 2 - Juice Processing Report, Tuesday 09 April 2024 Lab Report 3 - Canning Report, Tuesday 21 May 2024	Individual	45%	2, 3, 4
2	Quality Management Report	Quality Management Report, Tuesday 7 May 2024	Group	25%	4, 5
3	Formal Examination	Formal Exam period.	Individual	30%	1, 2, 3, 5

* 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 Reports

Assessment Type

Report

Purpose

To produce articulate and concise documents which convey evidence-based understanding of the concepts and topics.

Description

Students will participate in different experiments and write 3 lab reports

Weighting

45%

Compulsory Requirements	Pass requirement - Must pass this assessment item to pass the course.
Due Date	Lab Report 1 - Drying Methods, Tuesday 26 March 2024 Lab Report 2 - Juice Processing Report, Tuesday 09 April 2024 Lab Report 3 - Canning Report, Tuesday 21 May 2024
Submission Method	Online
Assessment Criteria	Students will be assessed on format style and quality of their reports. Details of criteria will be uploaded on course Canvas site prior first report submission.
Return Method	Online
Feedback Provided	Online - Three weeks after submission. Each student will be given feedback in the report.
Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment.

Assessment 2 - Quality Management Report

Assessment Type	Report
Purpose	To provide the student with the opportunity to develop quality management system based on HACCP concept on selected topic and written communication skills.
Description	Students will have to report on the HACCP plan of a product assigned to you by the course co-ordinator.
Weighting	25%
Due Date	Quality Management Report, Tuesday 7 May 2024
Submission Method	Online
Assessment Criteria	Students will be assessed on format style and quality of their reports. Details of criteria will be uploaded on course Canvas site prior to report submission.
Return Method	Online
Feedback Provided	Online - Three weeks after submission. Each student will be given feedback in the report.

Assessment 3 - Formal Examination

Assessment Type	Formal Examination
Purpose	Formal Examination
Description	The Formal Exam will test all topics of the course. Any of multiple choice, short answer, calculations, or essay questions may be included.
Weighting	30%
Due Date	Formal Exam period.
Submission Method	Formal Exam
Assessment Criteria	Details about the structure of the exam will be provided on course Canvas site prior to exam.
Return Method	Not Returned
Feedback Provided	No Feedback.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

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 those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face to face meetings or supervision.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

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 <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

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:

1. the assessment item is a major assessment item; or
2. 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;
3. you are requesting a change of placement; or
4. 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 <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> 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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