

EDUC3036: Technology Teaching Studies 5: Food Technology

Callaghan

Semester 2 - 2023



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description

This course is designed to extend students curriculum content and specialist discipline knowledge within the Stage 5 and Stage 6 NSW Board of Studies Food Technology curriculum. The course will assist students to understand the content in the area of Food Technology. The course supports prior learning in the areas of human nutrition, food science and food chemistry. The course will focus on the Australian Food Industry, Food Technology Design, Promotion and Marketing.

In addition it will develop the pedagogical techniques and reflective practices required to teach this content to students. The pedagogical focus will be on current research issues in managing the food technology classroom, innovation in food technology teaching, and developing skills for vocational pathways in the food industry. Students will also be required to demonstrate safe workshop procedures that satisfy WHS guidelines in the technology classroom while displaying sound management understandings.

Contact Hours

Callaghan Lecture

Face to Face On Campus
13 hour(s) per Term 1 Full Term

Tutorial

Face to Face On Campus
13 hour(s) per Term 1 Full Term

Workshop

Face to Face On Campus
1 hour(s) per Week for 13 Weeks starting Week 1

Unit Weighting

10

Workload

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

COURSE OUTLINE

www.newcastle.edu.au

CRICOS Provider 00109J

CONTACTS

Course Coordinator	Callaghan Ms Vicki McCudden Vicki.McCudden@newcastle.edu.au Consultation: by email
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	School of Education V Building Callaghan Education@newcastle.edu.au +61 2 4921 6428

SYLLABUS

Course Content	<ul style="list-style-type: none">• Historical development of the Australian Food industry, central concepts and language, relevant content knowledge, capabilities and appreciations of the characteristic modes of inquiry as they apply to research in the areas of food science, human nutrition and food production.• Knowledge of specialist subject content and pedagogy in the food technology classroom.• The design of quality teaching and learning experiences in food technology contexts• Knowledge of food product development and innovation in the food industry.• Preparation and presentation of food;• Management practices including food safety and risk management, budgeting, selecting, storing, maintaining and replacing materials, equipment and other resources.
Course Learning Outcomes	<p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Demonstrate a critical understanding, at a level appropriate to higher education, of the area of food technology, including the historical development of the Australian Food industry, central concepts and language, relevant content knowledge, capabilities and appreciations of the characteristic modes of inquiry as they apply to research in the areas of food science, human nutrition and food production.2. Demonstrate a deep understanding of content and pedagogy which enables them to transform (organize, adapt, present) content in ways which are powerfully responsive to the particular characteristics of learners, curricula and assessment in the food technology classroom.3. Design quality teaching and learning experiences in food technology contexts that consider design in food product development and innovation preparation and presentation of food;4. Develop management practices including food safety and risk management, budgeting, selecting, storing, maintaining and replacing materials, equipment and other resources.
Course Materials	<p>Required Reading:</p> <ul style="list-style-type: none">- Week 1 Course Introduction Trevallion, D. (2020) "Changing the professional identity of food technology teachers in Australia" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch11 pp167-183Turner, K., Turner, A., 2008, "It's time to study values at the core of food technology education" Exploring Technology Education: Solutions to issues in a globalised world Volume One. Edited by Howard Middleton and Margarita Pavlova. Conference Proceedings from Griffith Institute for Educational Research, 2nd-6th Dec.2008Week 2 Stage 5 Food Technology Slatter, W., (2020) "A Technological Approach to secondary food education in New Zealand" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch5 pp63-81

Turner, A., 2013, "The utility of technacy genre theory in Technology Education: A case study into food technology Teaching" Conference proceedings from PATT27, Technology Education for the Future-A play on sustainability, 2-6 Dec,2013, Christchurch, New Zealand.

Food Technology Stage 5 Syllabus Documents

Week 3 Stage 6 Food Technology

Gumbo, M. (2020) "Teaching food technology in a secondary technology education classroom :Exploring ideas in Indigenous contexts" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch19 pp283-297

Rutland, M., 2013, Food Technology in D&T: What do teachers' and pupils' in England really think?" Conference proceedings from PATT27, Technology Education for the Future-A play on sustainability, 2-6 Dec,2013, Christchurch, New Zealand.

Food Technology Stage 6 Syllabus Documents

Week 4 The Australian Food Industry

Saunders, C. (2020) "Continuing professional development for secondary Food Technology Teachers in Australia", in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch14 pp195-209

Spencer, S., 2008, "Australian Food Industry: Key Issues and Potential Future impacts on Competitiveness" Journal of the HEIA Vol. 15, No2, 2008

Week 5 Food Science

France, B. (2020) "Socially Acute questions: How biotechnology can provide context and content for discussion in food technology classes" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch18 pp273-283

Rutland, M., 2013, "Food Technology: an initial exploration into its educational purposes" Conference paper: Technology Education: Learning for life, edited by Howard Middleton, Volume 2, pp61-70. TERC/DATTA conference, Sydney 26-29th Dec, 2013

Week 6 Food Manufacturing

Owen, D. (2020) Positive ingredients to redefining food education in schools in Australia" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch9 pp139-153

"A Study of Industry Profiles in the NSW Manufacturing Sector" In July 2007, the Department of State and Regional Development, in support of the NSW Manufacturing Council, commissioned the Centre for Industry and Innovation Studies (CIIS), at the University of Western Sydney www.business.nsw.gov.au/industry/manufacturing

Week 7 Nutrition

Reeves, S. (2020) "Current research in nutrition in the school curriculum in England" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch15 pp229-243

Week 8 Sustainable Food and Organic Food Products

Ritson, C. (2020) "Population Growth and Global Food Supplies" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch17 pp261-273

Week 9 Food Product Development

Cusanelli Nischang, L., Trevallion, D. (2020) "Using Technology for Creative, productive purpose" International Journal of Innovation, Creativity and change www.IJICC.net volume 13 Issue 1

Week 10 Food Alchemy

Molecular Gastronomy Heston Blumenthal Biography

<http://www.thefatduck.co.uk/Heston-Blumenthal/Biography/>

Charles Spence: The food scientist changing the way we eat

<http://www.theguardian.com/lifeandstyle/2014/sep/24/charles-spence-food-scientist-changing-eat-flavour>

Fake flavours: why artificial aromas can't compete with real food smells by Amy Flemming

Week 11 Food Issues and Trends

Turner, A.(2020) "Learning cultural, ecological and food literacies through the Gumbaynggirr pathway of knowledge project" in Rutland-Turner Eds, Food Education and Food Technology in School Curricula International perspectives, Ch20 pp297-319

NHMRC, 2013, "Eat for Health Australian Dietary Guidelines Summary" A report by the Australian Government, National Health and Medical Research Council, Department of Health and Aging.

Week 13 Food Consumerism

Blennerhassett, A., 2008, "Green Consumerism and the organic industry: focus on retail and branding", Australian Certified Organic magazine, 7/12/08, pp26-48

Spencer, S, 2008, "Australian Food Industry Key issues and potential future impacts on competitiveness", Journal of the Home Economics Institute of Australia (HEIA), vol15, No. 2, 2008

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	17 Jul	Introduction to Course	Overview Assessment tasks Demonstration – AT1 – Multicultural Foods	
2	24 Jul	Stage 5 Food Technology	Syllabus Strategies Content Work with partner on ICT project – multicultural dem video	
3	31 Jul	Stage 6 Food Technology	Syllabus Strategies Content	
4	7 Aug	Stage 5 – Foods in Australia	ICT video presentation and peer evaluation	AT1 due -Multicultural Demonstration video
5	14 Aug	Australian Food Industry overview for AT2		
6	21 Aug	Food Manufacturing	Processing techniques and Unit operations	
7	28 Aug	Food Issues and trends 2023 Superfoods	Field trip for AT2 Case Study – Thompsons Pies Gateshead	
8	4 Sep	Food product development	Product development process	
9	11 Sep	Food Product Development	Developing a new food product – product prototype testing	AT2 due: AFI Case Study 14/9/23
10	18 Sep	Food Alchemy	Food Science experiments	
Mid Term Break				
Mid Term Break				
11	9 Oct	Nutrition	Research Latest trends	
12	16 Oct	Food Standards	Food product development Project realisation and evaluation	Task 3 New Food Product Development- 40% Due: 16/10
13	23 Oct	Food Consumerism	Policies and Practices	
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	ICT – Production of a demonstration video Multicultural Foods	7/8/23	Individual	30%	2,4
2	AFI Case Study	14/9/23	Individual	30%	1,2
3	Food Alchemy project	16/10/23	Individual	40%	1, 2, 3, 4

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.
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Assessment 1 - ICT project – develop a teaching resource – demonstration video – multicultural foods – Stage 5

Assessment Type	ICT project
Purpose	<p>To develop an understanding of developing classroom resources and how to present a successful demonstration lesson in Stage 5 Food Technology.</p> <p>Additionally students will develop an understanding of the many cultures whose food habits that have impacted the multicultural food habits of Australians. The students will study one culture in depth to develop an understanding about the students who will be present in their multicultural classrooms. This task will also build on syllabus understanding, specifically, Stage 5 Food in Australia.</p>

Description	<p>ICT resource/demonstration 30%</p> <p>With your partner select a culture that has impacted contemporary Australian food habits.</p> <p>Research popular ingredients and dishes, food preparation techniques and the impact that these have had on our contemporary cuisine.</p> <p>Part A: Practical Experience 15%</p> <p>Develop a 7-10 minute audio visual video with your partner demonstrating you both preparing a dish that is reflective of the ingredients and preparation techniques from your selected culture. The recipe selected must be suitable for a Stage 5 class to prepare.</p> <p>Demonstrate safe food handling, risk management, selection of equipment, correct technique and important skills.</p> <ul style="list-style-type: none">During the demonstration discuss the typical ingredients included, nutritional information, food preparation and cooking techniques authentic to your chosen culture. Justify the evolution/adaption of ingredients and cooking techniques for Australian food habits.Discuss the impact of the chosen culture on contemporary Australian Food Habits today. <p>Part B: Supporting documentation 15%</p> <p>Copy of the recipe</p> <p>Adaption and justification of the recipe for class use at a cost of \$2.50 per head.</p> <p>Include a costing and food order for a class of 20 students of the adapted recipe.</p> <p>Create an assessment tool to be used to assess the students in a class for practical food lessons.</p> <p>Create a worksheet to be used by a Year 9 class to fill in during the demonstration. (This will be used by your peers during the demonstration)</p>
Weighting	30%
Length	1500 words
Due Date	7/8/23
Submission Method	Online through Canvas

Assessment Criteria	<p>Development of a professional ICT resource</p> <p>Demonstration of safe and hygienic work practices and well developed practical skills</p> <p>In-depth information provided on the food habits of the chosen culture</p> <p>Critical analysis of the impact of the chosen culture on contemporary Australian food habits</p> <p>Accurate class costing prepared and worksheet reflects suitable learning outcomes for a Stage 5 class</p>
Return Method	Online
Feedback Provided	Online - Two weeks after submission from the final student..

Assessment 2 – Australian Food Industry Case Study 30%

Assessment Type	Case Study
Purpose	To develop a deep understanding of every aspect of the Australian Food Industry through participating in an industry field trip.
Description	Attend the Mandatory Field Trip to Thompsons Pies at Gateshead

Requirements:

Prepare a case study report of Thompsons Pies focusing on the following:

AFI syllabus dot points (Aspects of the Food Industry)

- Levels of operation and mechanisation
- Impact on the environment, economy and society
- Career opportunities and working conditions

Food Manufacture syllabus dot points (Production and processing of food)

- production systems used in the manufacture of food, eg manual, automated, computerised (one example of each)
- describe 3 processes that transform raw materials into manufactured food products
- role of food additives in the manufacturing process (example of one food product manufactured)
- describe the storage and distribution systems used at Thompsons for one of their perishable products
- identify food safety hazards and risks
- describe 3 quality control procedures used in the food production systems at Thompsons

Weighting	30%
Length	Equivalent of 2000 words
Due Date	14/9/23
Submission Method	Online
	Please submit the task to CANVAS

Assessment Criteria	<p>A detailed report on the case study business within the AFI is prepared demonstrating superior understanding of- the social , economic and environmental factors affecting the AFI</p> <p>The role of specific equipment and processes in the manufacture of processed foods</p> <p>The WHS procedures undertaken by the company with regard to food safety and risk to employees</p>
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Return Method
Feedback Provided

*Include APA referencing correctly at every instance.
Online
Online - Two weeks after submission.

Assessment 3 - Food Alchemy project 40%

Assessment Type
Purpose

Project

To develop an understanding of food product development and how it may be taught in the senior Food Technology classroom. This task will build on syllabus understanding.

Develop a nutritious convenience food product that contains at least one "superfood" suitable to be sold in a supermarket

See below for detailed instructions

Description

New Food Product Development - Nutritious Convenience Food

In this task you are to create

Submit the following:

- Evolving evidence and images of the newly developed food product.
- A digital folio in PowerPoint detailing the documentation of the development of the food product and its marketing plan.
- The digital folio contains information relating to the exploration of the design brief, planning, researching and testing, producing and evaluating.
- A critical analysis of the food product in terms of the product, its nutritive value, innovation/uniqueness, reasons for development and target markets

Part 1) Powerpoint (folio) - /20

Title Slide: New Food Product Development: Nutritious Convenience Food

Steps in Food Product Development: Include a title slide for each of the areas below:

- design brief
- idea generation and screening
- market research (secondary - what is already available on the market? gaps in the market)
- Identify the target market and type of food product development. Name your new product.
- product specifications (raw ingredients & quantities, type of product)
- feasibility study (technical and financial)
- development of a prototype (include photographs of development and trials)
- testing product prototype, e.g. sensory evaluation, consumer testing, packaging tests, storage trials
- Evaluate sensory evaluation by consumers
- Marketing Plan (consider the 4 P's -planning, price, place and promotion- focus on Promotion)

Part 2: Food Manufacture and Product Development /20

Prepare your allocated workshop time on 16/10/23 OR 18/10/23.

Complete the attached worksheet to justify how your product meets the drivers of health and convenience, the target market and why the product is innovative and nutritious. (This will be used by the panel when assessing your product against the marking criteria).

You will be assessed on your product idea (innovation), convenience, nutrition (including use of a superfood/s), suitability to target market and success of final product.

Design Brief:

- You are to develop a new and innovative convenience food product with health and convenience as the main drivers, which will be sold at Woolworths. The manufacturer is looking for an innovative product that has an emphasis on health and nutrition properties. The ingredients can include raw and/or cooked elements and must include at least one "superfood". The development of this product is also driven by the societal trends. You have 1 Workshop (week 9) in class to develop a prototype and trial your product. Your product will be tasted and evaluated by other students on the day. You will need to record their evaluation of your product and justify any changes or alterations you made to your product.

Idea generation:

- Collect images and ideas for your food product. You may choose to display this as a mood board, brainstorm or series of notes and annotated sketches.
- Idea generation sketches/recipes: outline 3 initial ideas.

Screening: Represent this in your folio

Market research:

- Conduct primary and secondary research
- Secondary research should be presented in a table like below:

Food Product	Convenience Properties	Health Attributes
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- Product Specifications:
- Include your final recipe and method
- Specifications- ensure you supply the specifications for the: product, features, raw materials, storage and recommended shelf life

Feasibility Study: Represent the costing in your folio

Ingredient	Bulk cost	Ingredient weight	Ingredient cost
e.g. Mixed herbs	\$0.56 p/10g	5g	\$0.28
Total cost of ingredients:			\$ per

Technical feasibility: Represent the technical feasibility in your folio

Yes No

Are the ingredients readily available?
Are ingredients reasonably priced?
Are ingredients of correct quality?
Is necessary equipment available?

Do you have the skills and knowledge to make this product?

Production Process Development

- Include a single slide flow chart should include information and images of each step showing how the product is produced.
- Outline the development of the production process – product flowchart showing standard symbols.

Development of Prototype:

- Design and develop your product, take photographs of it.
- Describe (with picture or Diagram how your product would be packaged - include dimensions and packaging materials)

Testing product prototype, eg sensory evaluation, consumer testing, packaging tests, storage trials

Conduct consumer testing of your prototype/s in Week 9 and then at home if further development is required

- Include a critical analysis of your product, its nutritive value, innovation, target market and reasons for development on the worksheet provided on 16th or 18th Oct.

Weighting

40%

Length

2000

Due Date

Product presentation in class workshop on 16/10/23 OR 18/10/23

Submission Method

Online

Place the task through CANVAS

Assessment Criteria

Develop a distinct, creative, original and innovative new food product

- The product must be accompanied by a digital folio that documents the development of the food product.
- The digital folio must contain title pages and headings for the Steps in Food Product Development.
- A critical analysis of the food product, its innovation, nutritive value, target market and reasons for development

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Return Method

Online

Feedback Provided

Online - Two weeks after the final student submission.

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:

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/no-room-for/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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