FOOD SCIENCE AND NUTRITION

UNDERGRADUATE HANDBOOK

2017

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

SCIENCE

Welcome to Food Science and Nutrition

Today, consumers are seeking foods that are sustainably produced, safe, tasty, convenient, natural, healthy and good value. There is a large and international food industry using science and technology to meet these demands. This industry needs graduates with a fundamental scientific and technical knowledge of food ingredients and products, along with a thorough understanding of the science of how food helps us to optimise performance, avoid disease and enjoy a good quality of life as we age.

The Bachelor of Science (BSc) in Food Science and Nutrition offers distinct pathways in both Food Science and Nutrition, drawing on expertise from across the University, to enrich students' learning and to provide a degree valued by employers. It is important that you make a decision from the outset to follow one or other pathway. Although you may change between pathways, you must meet the full requirements for the programme to graduate.

We look forward to you joining our programme!

SIEW-YOUNG QUEK
Director of Food Science

Food Science pathway

The Food Science pathway underpins all aspects of manufacturing, processing and production in food-related industries. You will learn about food components, their properties and how they interact in food products. You will also gain an understanding of functional foods, emerging technologies and their benefits, food safety and food preservation and product development, from benchtop to market. Internships are also available for selected students in the Food Science pathway.

Food Science pathway		
Year	**Semester**	**Courses[1]**
1	1	BIOSCI 101, 107, CHEM 110, MATHS 108 or 150
	2	BIOSCI 106, General Education course, PHYSICS 160, CHEM 120
2	1	BIOSCI 204, CHEMMAT 211, STATS 101 or 108, 15 points from CHEM 240, SCIGEN 201 or BIOSCI 201
	2	BIOSCI 203, FOODSCI 201, CHEM 230, General Education course
3[2]	1	FOODSCI 301, CHEMMAT 756, FOODSCI 303, 15 points from CHEM 240, SCIGEN 201, Elective[3]
	2	BIOSCI 348, FOODSCI 302, 30 points from BIOSCI 358, FOODSCI 304[4], Elective[3]

[1]All courses are 15 points each. Please note that enrolment in courses is competitive and all courses have different GPA requirements. Please contact the course co-ordinators for specific GPA requirements.

[2]Third year students need to take at least five 300 level courses.

[3]Students taking an elective in Year 3 should choose no more than one elective (either Semester One or Semester Two) from the following: MEDSCI 142, ENVSCI 101, BIOSCI 102, PSYCH 109, SCIGEN 101, SPORTSCI 206, any Stage I Maths (except MATHS 108) or COMPSCI course. Please note that you can have no more than 180 points (12 courses) from Stage I courses (including General Education courses if done as Stage I).

[4]Students wishing to take FOODSCI 304 will need to take FOODSCI 301 and 303.

Postgraduate study options

The Food Science pathway can lead on to:

- BSc (Hons) in Food Science
- Postgraduate Diploma in Science in Food Science
- Master of Science in Food Science*
- Master of Professional Studies in Food Safety*
- Master of Engineering Studies in Food Process Engineering*
- Doctor of Philosophy (PhD)

**Further study or work experience may be required.*
See www.science.auckland.ac.nz/food-science-and-nutrition

Career opportunities

Food Scientists may find work in:

- Food industry
- Research institutes and government departments
- Food safety
- Food analysis
- Sensory evaluation
- Product development and waste management

See www.mbie.govt.nz/occupation-outlook for more career options.

Nutrition pathway

The Nutrition pathway focuses on human nutrition, the maintenance of good health and the well-being of populations. This requires consideration of the environmental, social, economic and cultural determinants of eating behaviours and how they impact on health.

Nutrition pathway		
Year	**Semester**	**Courses[5]**
1	1	BIOSCI 101, 107, CHEM 110, POPLHLTH 111[6]
	2	BIOSCI 106, General Education course, MEDSCI 142, 15 points from HLTHPSYCH 122, POPLHLTH 102, CHEM 120, PHYSICS 160
2	1	MEDSCI 202 or BIOSCI 204, 203, 205, POPLHLTH 206
	2	BIOSCI 202, 203, FOODSCI 201, STATS 101 or 108
3[7]	1	MEDSCI 315, General Education, 30 points from FOODSCI 301, FOODSCI 303, BIOSCI 201
	2	BIOSCI 358, POPHLTH 305, 30 points from FOODSCI 302, POPLHLTH 202, SPORTSCI 206, MEDSCI 301[8], MEDSCI 312[8]

[5] *All courses are 15 points each. Please note that enrolment in courses is competitive and all courses have different GPA requirements. Please contact the course co-ordinators for specific GPA requirements.*

[6] *Students following the Nutrition pathway take POPLHLTH 111. Students who later decide to change to the Food Science pathway will need to complete MATHS 108 (available in Semester One or Summer School).*

[7] *Third year students need to take at least five 300 level courses.*

[8] *Students with conditional offers for the MHSc in Nutrition and Dietetics must take MEDSCI 301 and 312*

Postgraduate study options

The Nutrition pathway can lead on to:

- BSc (Hons) in Biomedical Science
- Postgraduate Diploma in Science
- Postgraduate Diploma in Science in Biomedical Science
- Postgraduate Diploma in Health Sciences
- Master of Science in Biomedical Science*
- Master of Food Science
- Master of Health Sciences*
- Master of Health Sciences in Nutrition and Dietetics
- Doctor of Philosophy (PhD)

**Further study or work experience may be required.*
See www.science.auckland.ac.nz/food-science-and-nutrition

Entry to the Master of Health Sciences in Nutrition and Dietetics

The Nutrition pathway fulfils the undergraduate requirements for entry to the Master of Health Sciences in Nutrition and Dietetics. Please note that entry is competitive, applicants are ranked on GPA and places are limited. Selection will normally take place during the second year of the Bachelor of Science in Food Science and Nutrition with limited additional offers made at the end of the third year. For more information visit **www.fmhs.auckland.ac.nz/nutrition-dietetics.**

Career opportunities

Nutrition graduates may find work in:

- Private practices
- The food industry
- Research institutes
- Non-governmental organisations and government departments
- Nutrition information services
- Health promotion
- Health programme planning and health policy

Registration as a nutritionist or a dietitian can be available after specialised training and work experience.

What should I study to best prepare for this programme?

Many of the required Stage I courses assume you have studied the subject already at high school. Without this knowledge you may find your University study difficult. The table below outlines what we expect you to know already. You are strongly advised to take the action recommended if:

- You haven't studied to the required level (or at all)
- You didn't do very well even if you did study to the required level
- It has been a while since you studied the topic

If more than one area is a problem for you, you should strongly consider choosing a different major.

Please direct any enquiries to **scifac@auckland.ac.nz.**

Stage I course	CHEM 110	BIOSCI 101, 106, 107
Pathway	Food Science and Nutrition	Food Science and Nutrition
Assumed knowledge	NCEA Level 3 Chemistry, or equivalent	NCEA Level 3 Biology, or equivalent ***and*** NCEA Level 3 Chemistry, or equivalent
Recommended action if you don't have the assumed knowledge	Preparatory Chemistry online course **Cost:** $85 You may also need to take CHEM 150 in Semester One of your first year, but it is essential you seek advice regarding your overall programme before you do this. Consider CHEM 150 prior to CHEM110 **www.chemistry.auckland.ac.nz/preparatory-chem**	Contact the Stage I Biology coordinator for advice
For more information	**Contact:** Dr Kaitlin Brare **Email:** k.beare@auckland.ac.nz	**Contact:** Dr Mandy Harper **Phone:** +64 9 373 7599 ext 87794 **Email:** a.harper@auckland.ac.nz

PHYSICS 160	MATHS 108	MEDSCI 142
Food Science (and can be taken as an elective in Nutrition)	Food Science	Nutrition (and can be taken as an elective in Food Science)
NCEA level 3 Physics or equivalent	NCEA Level 3 Mathematics with 13 credits or equivalent	Good results in either NCEA Level 2 or Level 3 Biology and/or BIOSCI 107.
PHYSICS 103 Introductory Physics for Science and Engineering. Available in Summer School.	MATHS 102 Functioning in Mathematics. Available in Summer School Superstart course 7-day course **Cost:** $190 10-day course (recommended for most students) **Cost:** $260	BIOSCI 107
Contact: Mark Conway **Phone:** +64 9 373 7599 ext 88864 **Email:** m.conway@auckland.ac.nz	**www.maths.auckland.ac.nz/superstart** **Email:** superstart@math.auckland.ac.nz	**Contact:** Angela Tsai **Phone:** +64 9 923 1552 **Email:** a.tsai@auckland.ac.nz

Key courses

BIOSCI 101	Essential Biology: From Genomes to Organisms
BIOSCI 106	Foundations of Biochemistry
BIOSCI 107	Biology for Biomedical Science: Cellular Processes and Development
BIOSCI 201	Cellular and Molecular Biology
BIOSCI 202	Genetics
BIOSCI 203	Biochemistry
BIOSCI 204	Principles of Microbiology
BIOSCI 348	Food and Beverage Microbiology
BIOSCI 358	Nutritional Science
CHEM 110	Chemistry of the Living World
CHEM 120	Chemistry of the Material World
CHEM 230	Molecules for Life: Synthesis and Reactivity
CHEM 240	Measurement and Analysis in Chemistry and Health Sciences
CHEMMAT 211	Introduction to Process Engineering
CHEMMAT 756	Food Process Engineering
FOODSCI 201	Foundations of Food Science
FOODSCI 301	Food Quality Attributes
FOODSCI 302	Food Preservation
FOODSCI 303	Sensory Science
FOODSCI 304	Food Product Development
HLTHPSYC 122	Behaviour, Health and Development
MEDSCI 142	Biology for Biomedical Science: Organ Systems
MEDSCI 202	Microbiology and Immunology
MEDSCI 203	Mechanisms of Disease
MEDSCI 205	The Physiology of Human Organ Systems
MEDSCI 301	Molecular Basis of Disease
MEDSCI 312	Endocrinology of Growth and Metabolism
MEDSCI 315	Nutrition, Diet and Gene Interactions
PHYSICS 160	Physics for the Life Sciences
POPLHLTH 111	Population Health
POPLHLTH 102	Health and Society

POPLHLTH 202	Research Methods in Health
POPLHTLH 209	Life Cycle Nutrition
POPLHLTH 305	Community Nutrition
SCIGEN 201	Managing Science and Technology
SPORTSCI 206	Exercise Nutrition
STATS 101	Introduction to Statistics
Suggested electives in the Food Science pathway (see explanation under the 'Food Science Pathway' table):	
BIOSCI 102	Plants, Microbes and Society
COMPSCI 101	Principles of Programming
COMPSCI 111	Mastering Cyberspace: Introduction to Practical Computing
ENVSCI 101	Environment, Science and Management
MATHS 101	Mathematics in Society
MATHS 102	Functioning in Mathematics
MATHS108	General Mathematics 1
MATHS 190	Great Ideas Shaping our World
MEDSCI 142	Biology for Biomedical Science: Organ Systems
PSYCH 109	Mind, Brain and Behaviour
SCIGEN 101	Communicating for a Knowledge Society
SPORTSCI 206	Exercise Nutrition

Helpful information

Application closing dates

Applications for admission close on 8 December for Semester One and 4 July for Semester Two.

Academic dates

Semester One begins on Monday 6 March 2017, Semester Two begins on Monday 24 July.
For a full list of the 2017 academic dates, visit **www.auckland.ac.nz/dates**

Entry requirements

2017 admission requirements for school leavers who have achieved University Entrance:

- NCEA (level 3) rank score 200
- CIE (taken in NZ) rank score 200
- IB rank score 29

2017 admission requirements for transferring students:

- GPA 3.5

For information about admission into Stage I courses, please see **www.auckland.ac.nz/admissions**

How to apply

For ALL students not enrolled at the University of Auckland in 2016, apply online at **www.auckland.ac.nz/applynow**

How to enrol

If you have accepted an offer of a place in a programme and are ready to enrol, or are a returning student, go to **www.studentservices.auckland.ac.nz**

Admission and enrolment guide

For a step-by-step guide to the admission and enrolment process, please see **www.auckland.ac.nz/admission-enrolment**

Further information

For course details, please visit **www.science.auckland.ac.nz/food-science-and-nutrition**

For enrolment enquiries, contact:

Student Information Centre
Room 112, Level 1 (Ground Floor), The ClockTower
22 Princes Street, Auckland City Campus
Phone: 0800 61 62 63
Email: studentinfo@auckland.ac.nz
Web: www.auckland.ac.nz/student-info-centre

For course planning enquiries, contact:

Faculty of Science Student Centre
Ground Floor, Building 301,
23 Symonds Street, Auckland City Campus
Phone: +64 9 373 7599 ext 87020
Email: scifac@auckland.ac.nz
Web: www.science.auckland.ac.nz/student-centre

Advice and support for students

To access the full range of support services available to students in the Faculty of Science, visit **www.science.auckland.ac.nz/support**

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Connect with us

Faculty of Science, The University of Auckland
Private Bag 92019, Auckland 1142, New Zealand

Phone: 0800 61 62 63 | Email: scifac@auckland.ac.nz
Web: www.science.auckland.ac.nz/foodandnutrition

twitter.com/ScienceUoA

www.facebook.com/science.uoa