

FOOD SCIENCE CAREERS



**Lincoln
University**

Te Whare Wanaka o Aoraki
AOTEAROA • NEW ZEALAND

New Zealand's specialist land-based university



Library, Teaching and Learning

WHAT IS FOOD SCIENCE?

How to feed the world, protect the future and live well are universal concerns at the centre of Lincoln University's mission. Food plays a key role in each of them. The production and availability of regular food supplies is of paramount importance to all humans. Specialisation in food science gives students a solid scientific grounding from which to build a career addressing issues around food: composition, nutrition, production, processing, sustainability, consumption, safety and supply.

The food science specialisation uses scientific principles to examine food and food-related manufacturing and processing practices. Students learn the biological and chemical makeup of food as well as about processes, such as social, political, environmental and economic factors, that affect food and its production, distribution and consumption. The scientific underpinning of the degree ensures that students are skilled in the utilisation of statistics and biometrics in experimental design and data analysis, and the ability to collect, synthesise and critically review data across a wide range of disciplines. Students graduate with a working knowledge of the scientific, industry and personal skills that professionals working in food science careers need. The programme's close industry ties means that students can feel confident that their qualification is relevant and will see them industry-ready at graduation.



FOOD SCIENCE IN NEW ZEALAND AND THE WORLD

New Zealand has a shortage of scientists and technologists so career prospects for food science graduates are good. Employment opportunities are diverse; graduates may wish to start in the lab, and from there the possibilities are endless. The amount and type of food related roles are only limited by imagination. From primary production to laboratory research to management, demand is high for qualified food scientists.

Increasing food production in a way that is sustainable concerns policymakers worldwide, and to achieve both aims seems incompatible. But as innovations occur in the name of achieving sustainable growth, new roles and opportunities arise, particularly in food technology. In countries with developed economies, the nutritional content of food, and its safe supply to meet consumers' many and varied needs means that expansion is projected for roles in product innovation.

New Zealand's reputation as an exporter of high quality produce means that roles are available worldwide, wherever our products go, and where new markets are forecast. The multinational groups driving this expansion require not just food scientists, but those with interests across all sectors that support food production, distribution, storage and sale.



SKILLS AND KNOWLEDGE DEVELOPED BY STUDYING FOOD SCIENCE

Employers value the rigorous scientific skills that Lincoln University graduates have. The skills and knowledge developed at Lincoln University are relevant and practical, and are directly transferable to many workplaces. Guest speakers from industry, together with problem-based active learning tasks, ensure students have a hands-on engagement with potential employers from the beginning of their studies. Making the most of academic and industry connections while studying is encouraged so that students are well-placed to build on their skills and knowledge in their future place of work.

Employers seek well-rounded, engaged graduates with a strong work ethic. As in any sector, employers value those with a professional attitude. This includes good communication (including the ability to communicate to groups, as well as effective interpersonal and written communication), honesty, self-motivation, initiative, time management, and flexibility. The importance of these basic skills cannot be underestimated, even in voluntary or internship roles, as future job opportunities often arise from a good reputation and a varied network of contacts.

The following skills and knowledge are valued in food science roles:

Rigorous scientific methodology practices
Competence in technical and food safety compliance
Knowledge of experiment design, implementation and analysis
Knowledge of food safety standards and principles skills
Ability to prioritise workload
IT and report writing skills
Analytical and critical thinking
Innovative thinking
Knowledge of laboratory practices and procedures
Relationship building and negotiation skills
Solution-focussed attitude
Numerical and quantitative skills
Knowledge of chemical and biological properties of food
Meticulous attention to detail



WHERE CAN FOOD SCIENCE GRADUATES FIND WORK?

Places of employment for food science graduates include:

- Government departments or bodies (e.g., Ministry for Primary Industries (MPI), New Zealand Customs Service, New Zealand Food Safety Authority)
- Crown Research Institutes (e.g., National Institute of Water and Atmospheric Research Ltd. (NIWA), Institute of Environmental Science and Research (ESR), Scion, Landcare Research, AgResearch, GNS Science, Plant and Food Research)
- Local/ regional government (e.g., Auckland Council, Greater Wellington Regional Council, Nelson City Council)
- Private consultancy, recruitment, research or services firms (e.g., Scientific And Technical Recruitment, Food Inc., Eurofins NZ Laboratory Services Ltd.,ASUREQuality, Cawthron Institute)
- Food processing, manufacturing or exporting companies (e.g., Talleys, Synlait Milk, Heinz Wattie's, Silver Fern Farms, Tegel Foods, Turners and Growers (T&G), Oceania Dairy, Foodstuffs, ANZCO Foods, RJ's Licorice, Silver Fern Farms, Griffins Foods, Kraft Heinz, Mars New Zealand, Davis Food Ingredients, Goodman Fielder, Talleys Group, Danone)
- Tech Industries (e.g. Callaghan Innovation, Lincoln Agritech, Intech Instruments Ltd.)
- Beverage or brewing companies (e.g. Zealong Teas, Nestlé, Fonterra, Monteith's Brewing Company, DB Breweries, Frucor Beverages, Lion New Zealand)
- Tertiary Education Sector (e.g. Lincoln University)
- Analytical Testing Laboratories and Chemical companies (e.g. Hill Laboratories, Eurofins, Ecolab, Ixom, ASUREQuality, Chemiplas)
- Regulatory Bodies (e.g. New Zealand Food Safety Authority NZFSA, Food Standards Australia New Zealand FSANZ)

FOOD SCIENCE JOB TITLES

Academic Lecturer/ Professor
Advisor Compliance and Investigation
Applications Technologist
Associate Research Technologist
Bioanalytical Officer
Biochemist
Biosecurity Officer
Brewer/ Distiller
Cereal Scientist
Chemical Engineer
Dietician/Dietetics Specialist
Education/Outreach Officer
Environmental Health Officer
Flavour Chemist
Food Biochemist

Food Engineer
Food Inspector
Food Labelling Technologist
Food Product Developer
Food Product Development Adviser
Food Safety and Quality Leader
Food Safety Auditor/Evaluator/Officer Coordinator
Food Scientist
Food Technologist
Food Toxicologist
Improvement Technologist
Laboratory Technician
Lecturer in Food Science
Management Cadet/Trainee
Manufacturing Technician
Medical Laboratory Scientist - Bacteriology
Microbiologist
Nutritionist
Production/Food Processing Team Leader/Manager
Pharmaceutical Technician
Pharmaceutical Sales Representative
Plant and Food Researcher
Postharvest Technologist
Product Developer
Product Development Scientist/Specialist /Technologist
Public Health Officer
Quality Assurance Officer/ Assistant/ Manager/ Coordinator
Quality Manager
Quality Systems and Compliance Coordinator
Quarantine Officer
Regulatory Affairs Officer
Research and Development Technologist
Research Scientist/Associate/ Technologist
Risk Manager
Safety Inspector
Sales Representative/Executive
Scientific Sales Representative - Food and Wine
Sensory Evaluation Expert
Sports Nutritionist
Technology Development Manager
Teaching Technician in Food Science
Technical Officer

PAY RATE INDICATIONS: FULL TIME EQUIVALENT (FTE) \$NZ PER ANNUM

Most starting salaries for graduates of bachelor degrees fall between 40,000 - 55,000. Entry level jobs are stepping stones to roles with increased responsibilities and remuneration. Your employability is enhanced by all of your life experiences, be they employment related, or the transferable skills and competencies gained from community involvement, volunteer work, or previous work or study- all of which can grow competency, expand networks, and demonstrate enthusiasm to future employers.

Job Title	Indicative Pay
Research Scientist (graduate)	From 43,000
Food Technologist	50,000 – 90,000+
Quarantine Inspector/ Officer	49,000 – 62,000
Biosecurity Officer	40,000 – 70,000
Laboratory Technician	40,000 – 65,000
Pharmaceutical Technician (starting salary)	43,000 – 47,500
Microbiologist (early career)	38,000 – 75,000
Microbiologist (late career)	76,000 – 130,000
Food Safety/ Quality Assurance Officer	35,000 – 65,000
Academic Lecturer/ Professor	74,000 – 120,000+
Quality Controller	38,000 – 60,000

FOOD SCIENCE TASKS

The following table includes the types of tasks that a food technologist might undertake.

Gather test samples of food products
Interpret sample results
Devise ways of improving efficiency in processes
Develop food packaging
Ensure quality and safety specifications are met
Develop prototypes to meet product briefs
Investigate the nutritional properties of foods
Write up research tailored to specific stakeholders
Conduct laboratory tasks/ trials
Operate and maintain scientific equipment
Present experimental findings to colleagues or stakeholders
Use computer software to analyse or present data
Product testing
Checking ingredient specifications
Operate within a budget
Microbiological compliance testing
Monitor and report on performance
Adhere to HACCP and/or ISO quality systems
Nutrient mapping
Liaise with internal and external stakeholders

Job tasks are role-specific, so the above is an indication only. For more information on roles, registered Lincoln University students can search Lincoln CareerHub (including expired jobs) for job titles similar to those they are interested in. Job descriptions, including tasks and skills required, are often available.



GRADUATE PROFILES



CLAIR MACMILLAN

*Bachelor of Science, Food Science major
Offshore Sales Executive, Chilled UK/
Europe, ANZCO Foods*



SHEEN CAI

*Bachelor of Science, Food Science major
Laboratory Technician, Oceania Dairy*



DAN AUBREY

*Bachelor of Science, Food Science major
Compliance Manager, AsureQuality Ltd.*



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INDUSTRY BODIES

Membership of an industry specific body enhances the professional status of students and employees. By joining a professional body, members can research career options, access training and events, and network and collaborate with industry colleagues at all levels.

Examples of food science industry bodies include:

New Zealand Institute of Food Science and Technology

www.nzifst.org.nz

Food Standards Australia New Zealand

www.foodstandards.gov.au

New Zealand Food Safety Authority

www.foodsafety.govt.nz

Food Inc. Food Industry Consultants

www.foodinc.co.nz

New Zealand Food and Grocery Council

www.fgc.org.nz

Food Technology New Zealand

www.foodtechnology.co.nz

Plant and Food Research

www.plantandfood.co.nz

Brewers Guild of New Zealand

www.brewersguild.org.nz

New Zealand Feed Manufacturers Association

www.nzfma.org.nz

New Zealand Food & Grocery Council

www.fgc.org.nz

New Zealand Beverage Council

www.nzbc.nz

Meat Industry Association

www.mia.co.nz

New Zealand Seafood Industry Council

www.seafood.co.nz



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