



Food Science

Smart food, global focus, healthy eating

"My fourth year project work was on cheese and that really increased the value of my studies. I also had experience with relevant software tools - that scientific background helps to understand the scientific processes involved in cheese-making!"

Alice Crawford
R & D Cheesemaking, Lion Tasmania plant

Food production and quality is becoming increasingly important globally.

Consumers want foods that are new and exciting, while also being nutritious, safe, tasty, convenient and produced in an environmentally responsible manner. Food companies need to cost-effectively produce foods that meet increasingly diverse market needs. Regulatory agencies insist foods conform to legislation around composition and safety.

The challenge for the food scientist is to blend biology, chemistry, consumer research and nutrition to solve the problems of developing a safe, healthy, and nutritious food supply for people everywhere.

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Reasons to study Food Science

Food Science is a portable degree. You can find Food Science jobs all over the world.

You can use both creative and technical skills in developing new food products.

Food Science is a very practical application of basic science (Chemistry, Microbiology, Biology) training with a product, consumer and market focus. There's a mix of scientific research, practical application and consumer interaction required to get the job done.

Career opportunities

As a Food Science graduate, you will have good prospects here in New Zealand and also exciting opportunities overseas. Our graduates frequently find employment before they have even completed their final year at university.

You could end up working for a national or international food company specialising in dairy, confectionery, brewing, fruit and vegetables, seafood or any other foodstuff.

There are also positions for Food Science graduates in research institutes, for example Plant & Food Research, or government agencies such as the Ministry for Primary Industries.

Careers in areas such as product development, food quality management, chemical/nutritional analysis, sensory analysis, marketing and research will be at your fingertips.

Background required

High School students are recommended to take Biology, Chemistry, Maths and Physics in year 12 and 13.

What is the difference between Food Science and Consumer Food Science?

Food Science is "product and process" oriented whereas Consumer Food Science is "consumer" based. A Food Scientist understands the nature of food components like fats and proteins and how they behave in food systems, how to process foods to produce high quality foods and how to develop new exciting food products for the marketplace. If you enjoy science subjects like chemistry and biology then you will probably prefer Food Science. On the other hand, if you enjoy learning more about consumer behaviour, food quality, marketing, and food policy then Consumer Food Science may be for you.

What will I learn?

The Bachelor of Science (BSc) majoring in Food Science provides you with a comprehensive understanding of the food industry, combining both theory and practical hands-on experience.

First Year: You will study the basic sciences, including biology, chemistry and statistics as well as introductory food science.

Second Year: In this year you will apply the science you learnt in first year specifically to food. You will do papers in food chemistry and processing, food systems, sensory science and microbiology.

Third Year: Now you will start to tailor your course to your own particular interests. You will take, food product development, advanced food chemistry and food processing papers and can choose to include food microbiology, sensory science, food policy and consumer issues.

There are course advisors within the Department who can help you plan your study path.

How will I study?

Your classes will consist of lectures, tutorials, seminars, practical laboratories, self-directed learning using readings and website material, and field trips to food manufacturers and research organisations.

Assessment is a combination of assignments/projects, examinations, laboratory reports, essays and oral presentations. Several papers provide you with the opportunity to work in groups on a large project, which often includes interaction with the food industry, a most valuable experience.

Can I combine Food Science with other subjects?

Yes. There are a number of possibilities. You can major in Food Science for a BSc and include other subjects like chemistry, microbiology, human nutrition and biochemistry to complement Food Science in your degree. You could even decide to do a double major in Food Science and another subject. Another option is to do a double degree, for example a BSc in Food Science and a BCom in Marketing.

PROFILE Greta Knarston

Food is generally something people in New Zealand take for granted. When I tell people that I'm a Food Technologist it usually stimulates a lot of conversation as it sparks their thinking of the huge variety of food on offer and where it has all come from.

The Food Science degree I completed at Otago has been the perfect stepping stone to get into an exciting and constantly growing industry. Upon completion of my Honours year I was the Technical Graduate at Frucor Beverages for a year. Frucor Beverages Ltd. was originally a New Zealand company, they are now owned by Suntory and are seen as one of the leading companies in the Suntory Group. This has opened up exciting opportunities abroad with Frucor people transferring to Japan, The Netherlands, Spain and the UK.

The Technical Graduate program is split into R&D, Manufacturing and Quality. The experience gained during this year is invaluable as it gives a really good overview of how the company runs and the contributions and impact of each department. It is also an opportunity to discover the different options that exist within a food company for a technical

graduate. The calibre of Otago's Food Science graduates is evident – in the 6 years of the programme, three of the Technical Graduates have been from Otago Uni.

The R&D team at Frucor consists of three areas, Product Development, Packaging and Technical Support. We currently work in our new R&D centre constructed two years ago. This gives us a world class lab and pilot plant to produce the next new and exciting beverages for NZ and AU. With the growth of the food industry in New Zealand the team keeps on growing, currently numbering at 35.

The opportunities within New Zealand and abroad for Food Science graduates is huge. The food industry keeps growing and evolving as the market changes – it's a very dynamic work environment. There's no other industry I'd rather be in!



For questions about
Food Science
otago.ac.nz/foodscience