



66 Nowadays, bringing food to the world's table relies heavily on science. Biology, chemistry and physics all play their roles in how we create the delicious and nutritious meals that feed us all.

At the University of Reading, we have an international reputation for being at the forefront of teaching and research into Food and Nutritional Sciences – and we are passionate about sharing and enhancing our knowledge with like-minded people.

We offer our students a unique learning environment that continually offers them opportunities to learn from world-leading academics who are tackling the global challenges of delivering healthy and sustainable food to the world's population.

Our curriculum is based on the application of science to understand how we can make food safer, healthier, more sustainable and, above all, more delicious. Many of our academics work with industry and governments to help improve global food quality and the world's health.

We take great pride in supporting and preparing our students for their future careers and are proud that so many go on to become pioneers themselves in the exciting and essential industry of food and nutrition.

### **Professor Colette Fagan**

Head of Department of Food and Nutritional Sciences and Professor of Food Processing

reading.ac.uk/food

EAT TO LIVE

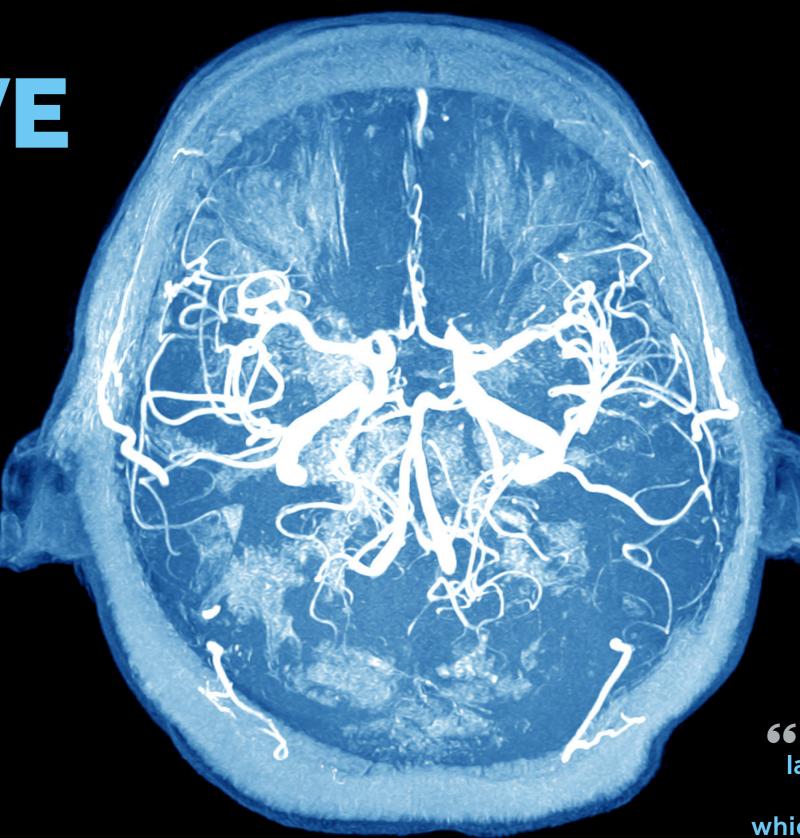
### **Professor Jeremy Spencer**

Food and Nutritional Sciences underpin what is perhaps the largest industry in the world – people will always need to eat and they expect their food to be safe and of good quality. Increasingly though, all consumers are becoming aware of the effects their food choices have on their health and wellbeing. This new awareness is partly down to the pioneering research carried out by our own Professor Jeremy Spencer.

Jeremy's research teaching looks at how the human body absorbs and metabolises dietary phytochemicals – bioactive compounds that are commonly found in plant-based foods such as fruits, vegetables, grains and tea – and the impact they have on the brain and cognition.

"One of my main reasons for coming to Reading was the unique opportunity to link nutrition with psychology. It enabled me to study, in clinical studies, the impact of diet and nutrients on brain health."

Jeremy's research first focused on the cellular and molecular mechanisms concerned with neuronal death in Parkinson's disease and Alzheimer's. It revealed that dietary phytochemicals actually improve blood circulation within the brain.



This highly cited research proved a launchpad for further investigation into the benefits of phytochemicals beyond the brain. It has resulted in the development of better food processing and plant breeding to enhance the content of phytochemicals. It has even led to the creation of a new category in functional food products and superfoods and, most importantly, a better understanding of the power of a well-rounded diet high in phytochemicals.

"In the past 50 years, science has succeeded in extending lives, but people aren't going to be living all those extra years free of disease. Debilitating diseases like Dementia have a huge social impact on families and society. It was our desire to pioneer a more preventative strategy for these type of conditions – which now seems like it is going to be the new way forward."

Jeremy is passionate about sharing his research with students and leads the Introduction to Human Physiology and Nutrition module as well as passing on his knowledge of nutritional science throughout our programmes.

66 Exposing students to that latest research is really key, and is certainly something which sets Reading apart from other universities. 99

# SWEET

### **Professor Lisa Methyen**

Sensory evaluation is an essential tool for optimising consumer acceptance of food products and is vital in gaining an understanding of how we perceive flavour, taste and texture.

Launched in collaboration with the independent market research group MMR Research Worldwide Ltd, our Sensory Science Centre provides high quality evaluation data for MMR's food, drink and healthcare clients as well as the University's research and teaching programmes. Undergraduate students have the opportunity to use the centre's tasting booths to learn how to carry out tests and evaluate all important consumer feedback.

The Centre delivers high quality research needed to address food industry challenges, improve existing lines and create new products. With government taxes on sugar and growing consumer demands for healthier foods, a big part of the Centre's work is in product reformulation—reducing salt and calories from both sugar and saturated fat in processed foods along with understanding and modifying the perception and acceptability of foods.

Thanks to a recent international partnership between the Sensory Science Centre and industry, a healthier milk chocolate bar – high in fibre, low in sugar and with the texture of a normal bar – has now been developed.

The new chocolate is made by the SureChoc project – a partnership between Israeli food-tech company DouxMatok, Swiss flavour and fragrance company Givaudan, Israeli food and beverage manufacturer Strauss and the University of Reading. The project is funded by the European Institute of Innovation and Technology (EIT Food).

Professor Lisa Methven, Professor in Food and Sensory Science, leads the SureChoc project. "We know both children and adults love their chocolate—and it's desirability makes it difficult to remove from the diet. Now everyone can have their favourite treat but without the high intake of sugar."

Using DouxMatok's sugar reduction solution, Lisa and her team created a milk chocolate bar that tastes as good as the real thing but has nearly half the sugar, more fibre and a 'type of sugar' that enhances sweetness.

This 'special sugar' negates the need for any artificial sweeteners as a higher percentage of it can be enjoyed on the tongue, rather than heading straight for the digestive system.

Lisa explains that the project did not attempt to produce an 'exact match' for the flavour or texture profile of milk chocolate. "Our aim was to understand the effects of the changes we made and optimise our formulation until we have a product that is desirable to the final consumer."

Throughout 2019, researchers at the University of Reading ran consumer tests on 160 'regular consumers'. The results surprised even Lisa "when volunteers were asked how much they liked our new low sugar chocolate, they gave it a score of 5.1 out of 7 – almost as high as the 5.7 for the real thing."

She also stressed that consumers were 'very engaged' with the idea of buying products that were enriched with fibre and lower in sugar. "When asked if they would choose a high fibre product, 74% said yes for chocolate and 64% for cookies; which increased to 83% and 77% respectively when the consumers were informed that the high-fibre chocolate was also lower in sugar."

The SureChoc project also involved MSc and Undergraduate students in research capacities. From the development of chocolate chip cookies to the evaluation of physico-chemical and sensory properties, our students have certainly played their part in the development of this healthier, and tastier, new product.





FEEDING IMAGINATIONS

66 I'm delighted and proud that our students are so frequently recognised among the most innovative in the country. 99

### **Professor Colette Fagan**



At Reading we aim to prepare students to succeed in the world of work, we give our students a platform to develop the skills industry needs, along with industry networks to support their future career.

Our department of Food and Nutritional Sciences ensures their students are given these opportunities. The Food Product Development module gives them the chance to create their own food product. It is an opportunity to develop something as a team, from the ground up, designing and producing a new food product.



Every year our students produce amazing products, the products are designed and developed to solve a problem, such as vegan alternatives, products that support your health, or tackle food waste.

At Reading we give our students the tools to create a truly professional product.



With access to our industry level facilities, including our Food Processing Centre that includes a dedicated dairy room, bakery equipment, thermal processing, dehydration and separation equipment. The plant contains approximately £4m worth of equipment, for food product

Our Food Processing Centre mirrors a professional environment, our students make products that could be put on supermarket shelves. The project ends with a show, where students get the chance to show off their efforts. We use our connections as a department, to invite members of industry to view and judge our products.

development work.



This module gives our students a chance to hear some real external, professional feedback, maybe even to meet their potential future employers. Other students and staff from the University are invited to sample the new products, giving them the chance to experience the public testing your new products.

Students have the opportunity to enter Ecotrophelia, which is the national competition for the creation of eco-innovative food products. The winning UK team goes on to represent the UK at the European final.



The competition gives students another opportunity to have their work viewed and critiqued by industry leaders from illustrious companies such as PepsiCo, Coca-Cola, Food Manufacture, Marks & Spencer, Mondelez, Sainsbury's, Tesco, Unilever, Warburtons, Institute of Food Science and Technology (IFST) and Campden BRI.

Students from Reading regularly enjoy success at Ectrophelia, with previous teams securing Gold at the UK Final and Silver at European Final.

Professor Colette Fagan,
Head of Department at Food and
Nutritional Sciences: "developing
students with the skills to solve
real-world challenges is at the
core of what we do. I always
look forward to seeing their
future achievements".



# COOKING UP A STORM

By location, the University of Reading is surrounded by illustrious international companies. We share very close ties with many of them, providing us with enviable research, teaching and careers opportunities. One such company is world-leading organic baby and toddler food producer, Ella's Kitchen.

Paul Lindley OBE, founded Ella's Kitchen in a children's playroom in 2006. Paul is one of the UK's most successful entrepreneurs, as of July 2022 – Chancellor of the University of Reading. He needed comprehensive information on laws governing baby food and decided to contact Dr. David Jukes, from our Department of Food and Nutritional Sciences – an internationally recognised expert.

Paul's call to David has led to a long lasting and close relationship with the University.

Paul was able to trial his original Ella's Kitchen products using our state-of-the-art food processing pilot plant situated within the Department. Then, a further project with other academics helped Paul to shape a unique approach to sourcing raw ingredients. The use of our facilities further enabled him to develop consistently high-quality finished products whilst keeping them cost effective.

In 2013, Paul was awarded an honorary doctorate degree by Reading's Henley Business School (HBS) who are integral to the Department's Food Science with Business programme; teaching future food entrepreneurs the skills needed to follow in the Ella's Kitchen founder's footsteps.

This close connection is, in itself, a prime example of how our students are ideally positioned to find possible career paths into the best companies in the business. Our graduates are in great demand by a wide range of employers, often receiving excellent job offers whilst on industry placements.

Hannah Pettit is a case in point.
Studying for a BSc in Nutrition with
Food Consumer Services, she spent her
third year on a professional placement
with Bakkavor, another company with
close links to the University. That
invaluable experience of working within
the food industry gave Hannah the
opportunity to hone all the skills
and knowledge she gained
during her degree.

As fate would have it, after graduating Hannah was hired by Paul as a Technologist at Ella's Kitchen. Since then she has risen within the company and she is now Technical Manager, tasked with making sure that all their food is safe and legally compliant.

Like many of our other graduates, Hannah's time at Reading helped to shape her ambitions and laid solid foundations for a very rewarding career.

Paul's call to David has led to a long lasting and close relationship with the University.



# IRRESISTIBLE OPPORTUNITIES

66 I was really able to put my learning into practice, the nutritional elements of the course gave me an awareness of all the considerations when generating recipes. 99

Ellie Read

BSc Nutrition and Food Science with Professional Training



There are lots of different names given to a year taken out of your studies to work – with our food and nutrition courses we call it industrial training because we expect our students to do more than gain work experience.

We work really closely with our students and industry contacts to help secure placements that will help evolve and grow subject knowledge and give new practical skills and confidence.

Spending a year in industry helps make you more appealing to future employers, it's a real job with real responsibilities. It could can even land you a job – it's not uncommon for our students to be offered jobs with their industrial training provider.

Ellie Read, a fourth year student on our BSc Nutrition and Food Science with Professional Training is testament to just that. By the end of her year in industry she was walking to work past huge billboards advertising a product she had developed.

Ellie secured a placement with a Graze, a British start-up that sells healthy snacks through snack subscription boxes, an online shop and through major retailers, as a New Product Development Intern in one of their bakeries.

After a short while, Ellie was tasked leading a project to develop a new range of products for Graze. And it wasn't an easy brief; the new range of products had to be high in protein, comply to sugar reduction guidelines, have a substantial shelf life, be efficiently produced within the factory environment and have an acceptable price point, whilst still looking and tasting good.

But she was more than ready for the challenge, "I was really able to put my learning into practice, the nutritional elements of the course gave me an awareness of all the considerations when generating recipes. I could easily work out whether a product was high or low in a particular nutrient, I also knew what would be desirable and what would not. I had an understanding of population needs and the importance of complying with government recommendations such as sugar reduction. An understanding of legislation and claims was also beneficial, especially when working on high protein and reduced sugar briefs for example, I knew what was required to make the claim."

Alongside the new products development brief Ellie was able to learn more about other areas of the business, working within the process, technical, production and procurement departments of Graze. And learning more about other markets – even taking a trip to New York to attend a trade show.

Ellie was visited by her tutor twice during her time with Graze to ensure they were providing her with the best opportunities to expand and apply my knowledge.

"I also submitted reports detailing the projects I had worked on. This was a good reflection exercise to see what progress I had made and allowed me to easily summarise what skills I had used which has been really helpful in generating my CV for jobs after university."

And Ellie's new product? Graze's range of three Oat Millionaire Bars were launched shortly after her placement ended and are selling well. "It still gives me a little buzz of satisfaction when I pass them on the shelves."





UNDERGRADUATE COURSES

All of our undergraduate courses have been developed to make you highly employable within the food sector. Designed with our industrial advisors, each course includes the core science within food and nutrition and flexes the emphasis and compliments with additional skills to allow you to specialise in what interests you, reflecting the diversity of careers open to you.

For more information about each of our courses and details of modules please see our website.

All of our degree courses have the option of an additional paid year in industry in your third year.

You will have the opportunity to take part in a team project in new product development in your final year.

In your final year you can apply your learning and explore your interests by undertaking a research project in a cutting-edge area of:

- food science research if you are a food science or food science with business student
- food technology research if you are a food technology with bioprocessing student
- food and human health and wellbeing, or consumer behaviour and food choice if you are a nutrition or nutrition with food consumer sciences or nutrition and food science student.

In the final year of the course you will be given advanced module options so that you can develop your particular interests.

### **BSc Food Science**

Accredited by the Institute of Food Science and Technology

Apply biology, engineering and biochemistry to better understand food processes and meet the demands of society for sustainable and safe food products. Our food science course allows you to develop your scientific knowledge in chemistry, biology and microbiology gaining the skills needed for a career in the food industry. Modules cover the fundamental science for food and nutrition, quality and safety across the food chain and human nutrition, sensory evaluation, food quality assurance, and food chemistry. Our Food Science graduates are able to pursue successful careers in the food industry, government departments concerned with food production and safety, and in education and research.

### BSc Food Science with Business

Accredited by the Institute of Food Science and Technology

Give yourself the unique opportunity to develop your business skills alongside scientific expertise. This programme is run in collaboration with both Henley Business School and our Food Economics and Marketing colleagues in the School of Agriculture, Policy and Development. As a Food Science with Business student you will cover themes including quality and safety across the food chain, food processing and engineering, fundamental science for food and nutrition, human nutrition, business: economics, enterprise, financial management and marketing. Graduates from this course are well qualified to enter directly into the food industry in a managerial, commercial or technical position.



# UNDERGRADUATE COURSES

### **BSc Food Technology** with Bioprocessing

Accredited by the Association for Nutrition, the Institute of Food Science and Technology

The study of Food Technology with Bioprocessing emphasises food engineering and the role of food chemistry and microbiology on the manufacture of safe and highquality end products. Modules cover fundamental science for food and nutrition, quality and safety across the food chain, food processing and engineering, integrated food processing, economic manufacturing and sensory evaluation of food. Our Food Technology with Bioprocessing graduates have an in-depth knowledge of food raw materials and how they can be handled, processed and/or packaged to offer the consumer safe, convenient and healthy end products. Our course will develop your technological expertise and underpinning scientific knowledge to provide you with the skills needed for a career in the food industry or related sectors.

### BSc Nutrition and Food Science BSc Nutrition

Accredited by the Association for Nutrition, the Institute of Food Science and Technology

Nutrition and Food Science encompasses the scientific study of health and chemical aspects of the food we eat.

The first year of the course will introduce you to the basic disciplines underpinning the study of nutrition, food, and consumer science. These include basic human nutrition, food chemistry, food microbiology, human physiology and psychology. In further years you will develop expertise in diverse areas such as nutrition in health and disease, public health nutrition, food choice and regulation and new product development. In the final year of the course you will be given module options so that you can develop your particular interests. In industry, nutritionists with training in food science are at the forefront of new product development, packaging design and relaying health messages to the consumer. Our degree provides graduates with the expertise to work in nutrition education and promotion and within government departments concerned with public health issues.

Accredited by the Association for Nutrition, the Institute of Food Science and Technology

As consumers grow more aware of the importance of healthy eating, nutritionists become increasingly important to the food industry and society. In your first year of study, you will focus on fundamental science modules such as physiology, chemistry and microbiology. In your second year, you'll develop your understanding of nutritional sciences and key methodologies. Modules will cover a wide range of topics, such as fundamental nutrition, issues in food choice, and links between nutrition and health on an individual and societal level. This applied Nutrition degree programme will ensure that you have the skills to work at the interface between companies, health professionals, policy makers and the general public. After graduating you will have the ability to assess the clarity and scientific merit of the advice and food available, and to analyse the consumers' response to it. Your career could be creative, if you choose an area like product development or marketing, or it could be highly analytical, in the fields of quality testing or nutrition.

### **BSc Nutrition with Food Consumer Sciences**

Accredited by the Association for Nutrition, the Institute of Food Science and Technology

This degree programme combines academic training in nutritional sciences with psychological aspects of cognition and consumer choices. The first year of the course will introduce the basic disciplines underpinning the study of nutrition, food and consumer science. In further years you will develop expertise in diverse areas such as public health nutrition, psychology of food choice and regulation, sensory evaluation of food, consumer behaviour and marketing. Nutrition with Food Consumer Sciences students will work at the interface between companies, health professionals, policy makers, and the consumer to assess the clarity and scientific merit of the advice and food on offer, and to analyse the consumer's response to it.

# MASTER'S COURSES

Our MSc courses are full-time modular courses starting at the end of September. The programmes consist of discipline specific and problem-based learning modules and a dedicated research project in collaboration with industry or based in one of our world-leading research teams.

All our MSc graduates have expertise and skills which are valued by the food industry around the world. Recent jobs obtained by our graduates include process technologists, quality executives, new product developers, food technologists, and research and development technologists.

### **MSc Food Science**

Focused on the chemical nature of food and its relevance to quality, sensory and product development, this programme will equip you with the ability to provide industry and governments with an understanding of the science underpinning food safety and quality. You will study topics such as food chemistry, microbes, food safety and health, sensory science, food product reformulation and industrial challenges.

## MSc Food Technology – Quality Assurance

Study food quality and safety management both within a factory settings and from a national perspective. You will cover topics such as microbes, food safety and health, food control management, risk analysis in the food chain, and sustainable manufacturing and process design.

### MSc Nutrition and Food Science

Using our strength in nutrition, this programme provides the opportunity to study in depth issues relevant to the nutritional and health impact of food. The programme is accredited by the Association for Nutrition and graduates can become Registered Nutritionists. Study topics such as lifestyle, nutrigenetics and personalised nutrition, microbes in health and disease, public health nutrition, consumer food choice, food product reformulation, and nutrition communication and professional practice.

## EIT Food Masters in Food Systems

This programme is designed to give you a deep insight into the food system, and the innovation and entrepreneurship competences to bring novel products and services to market. We will help you develop your knowledge and skills to be an entrepreneurial leader, and the network and resources to be an effective agent of change in the food system. The programme is unique because of the mobility that enables you to learn at three of the leading universities in the domain of Food Systems in Europe. Furthermore, the programme was co-created with a number of EIT Food's industrial partners, ensuring that the knowledge and skills are demanded in the sector.

### Continuing Professional Development (CPD)

Complete CPD short courses and credit-bearing modules – up to master's and professional doctorate levels through our Agrifood Training Partnership (AFTP). Study online and at your own pace. Modules cover topics such as nutrition, health and the consumer, food quality and regulation, food manufacture, and sustainable food production on our MSc/PGDip/PGCert Sustainable Food Quality for Health programme for food and agricultural industry employees. You can also choose one of three thematic pathways including Sustainable Practices in Food Production, Nutrition, Food and the Consumer and Managing Risk and Food Safety.

#### Disclaimer

This brochure was issued in 2022 and is aimed at prospective undergraduate students wishing to apply for a place at the University of Reading (the University) and start a course in autumn 2023. The University makes every effort to ensure that the information provided in the brochure is accurate and up-to-date at the time of going to press (May 2022). However, it may be necessary for the University to make some changes to the information presented in the brochure following publication – for example, where it is necessary to reflect changes in practice or theory in an academic subject as a result of emerging research; or if an accrediting body requires certain course content to be added or removed. To make an informed and up-to-date decision, we recommend that you check **reading.ac.uk/study** 

The University undertakes to take all reasonable steps to provide the services (including the courses) described in this brochure. It does not, however, guarantee the provision of such services. Should industrial action or circumstances beyond the control of the University interfere with its ability to provide the services, the University undertakes to use all reasonable steps to minimise any disruption to the services.

### Copyright and trademarks

© University of Reading, 2022.

The University of Reading name and logo are registered trademarks. All rights reserved.

### Modules disclaimer

Sample modules are provided as a taster of some of the modules that may be available on each course. The sample modules listed may be compulsory (core) or optional modules. Information is correct at the time of going to press (May 2022) but the University cannot guarantee that a module appearing in this list will definitely run. Teaching staff on specific courses or modules mentioned in this prospectus may be subject to change.

For optional modules, the University cannot guarantee that all optional modules will be available to all students who may wish to take them, although the University will try to ensure that students are able to take optional modules in which they have expressed interest at the appropriate time during their course. Optional modules vary from year to year and entry to them will be at the discretion of the Programme Director.

#### Joint courses disclaimer

Our joint courses may have extra requirements, including English language requirements. Please check the individual course pages on our website for further details.

### Year abroad and placement fees

Some courses include an optional or compulsory year abroad or placement year. During this year you will only pay a partial fee which is currently set at 15% of the normal tuition fee. Check the website for the latest information: reading.ac.uk/fees-and-funding.

### **Placements disclaimer**

Programmes with a Professional Placement Year (also known as 'Year in Industry' or 'Placement Year') are fully dependent on students securing their own placement opportunity, normally through a competitive recruitment process. The University provides dedicated career and application support for placement year students. Students who do not secure a placement or who are unable to complete the placement year due to extenuating circumstances, have the option to transfer to a three year variant of their programme with agreement from their School/Department.

### Study abroad disclaimer

The partnerships listed are correct at the time of publication (June 2022). For up to date information on the University's partnerships contact studyabroad@reading.ac.uk.

Where Study Abroad is not a compulsory part of the degree programme, the University of Reading cannot guarantee that every applicant who applies for the scheme will be successful. Whilst efforts are made to secure sufficient places at partner institutions, the number of places available and the University's partners can vary year-on-year. In all cases, the University cannot guarantee that it will be possible for applicants to choose to study abroad at a particular institution. Further, certain courses and/or institutions may require you to satisfy specific eligibility criteria. It can be a competitive process. For further information on the University's Study Abroad Scheme please contact studyabroad@reading.ac.uk.



**Department of Food and Nutritional Sciences** 

www.reading.ac.uk/food

Ask us a question

www.reading.ac.uk/question





