Date: 23-10-2026

# BSc (Hons) Food Science and Innovation

| | |
|---|---|
| **UCAS code** | DS02 |
| **Institution code** | H12 |
| **Duration** | Three years, full-time |
| **Start date** | September 2027 |
| **Location** | Harper Adams University campus |

**If you are interested in food and being part of a creative, dynamic and fast-paced profession then this course will give you the skills you require. It provides the opportunity to explore your interests in food whether these relate to science or society, the practical or the theoretical, people or processes.**

You will explore consumer needs, nutrition, food production, new product development, supply-chains, marketing approaches, research and development, and issues of sustainability in food. You will be equipped with a broad base of practical, theoretical, and technical skills to help address global food challenges.

You will be taught in dedicated, specialist facilities, and assessed through an innovative combination of theory and real-world practice. Assessment typically includes live industry projects, creating and exhibiting new products, creative portfolios, and consumer research. We focus on a small number of topics at any one time, with frequent feedback, to help you manage your learning. You will learn within a diverse group, including international students and industry professionals.

Our food graduates access a variety of exciting, globally-connected roles, from selecting what is sold in supermarkets to creating the next generation of innovative food products. You will be primed for progression into roles that include the management of brands, people, projects, and products.

A version of this course with a placement year is also available.

View the placement year route

Find out more about placement years

## A-level entry requirements

- **Entry requirements for 2027 entry are not currently available. Please contact Admissions for advice**

## Careers

Our food graduates have an excellent employability rate and record. The high level of skill and specialist knowledge makes graduates from this course uniquely prepared for food technical, auditing and processing roles.

Graduates can expect to be involved in the decisions necessary to manufacture, develop and improve food and drink products in a dynamic and fast-paced environment.

Food technologists are at the centre of product design, formulation, food safety and quality assurance in the food industry.

# What will I study?

| Year 1 | | Year 2 | | Year 3 | |
|---|---|---|---|---|---|
| Food, Industry and Consumer Insights (R4001HF) | 20 | Food Quality and Safety (R5017HF) | 20 | Innovation in Food Technology (HF) | 10 |
| Academic and Professional Skills (R4002HF) | 20 | Academic and Professional Development (R5015HF) | 20 | Graduate Professional Development (HF) | 20 |
| The Science of Food (R4003HF) | 20 | Food Product Innovation (R5021HF) | 20 | Sustainability Solutions for the Food Industry (HF) | 20 |
| Food Formulation and Ingredients (R4004HF) | 20 | Managing People and Processes (R5018HF) | 10 | Dissertation (HF) | 40 |
| Introduction to Human Nutrition (R4005HF) | 20 | Food Product Processing (R5006HF) | 20 | Food Industry Project (HF) | 20 |
| Tools and Techniques for Food Evaluation (R4006HF) | 20 | Food Marketing and Retail (R5005HF) | 20 | Global Food Policy (HF) | 10 |
| | | Contemporary Issues in Food (R5016HF) | 20 | | |

## Food, Industry and Consumer Insights

**Year of study** 1
**Code** R4001HF
**Credits** 20
**Core/option** Core
**Module contact** Helen Darracott

This module will provide you with an introduction into the food and beverage industry. You will gain an insight into key stakeholders (investors, employees, customers, and suppliers) and the relationships between food retailers, food processors, logistics operators and consumers. You will learn about who they are, what they do and the role they play within food manufacturing.

You will develop an understanding of current economic, political and social issues relating to supply and demand for food and drink and their impact on the consumer and the supply chain at both a global and national level.

You will take away from this module a greater understanding of the complexity and variety of the food industry and the challenges faced.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Consider the current issues affecting businesses within the food supply chain.
- Identify trends in consumer behaviour as influenced by current issues.
- Assess the structure and range of food businesses and food retail and their contribution to the economy.

## Academic and Professional Skills

**Year of study** 1
**Code** R4002HF
**Credits** 20
**Core/option** Core
**Module contact** Dr Helen Pittson

The module will support the development of academic skills which will be used throughout the duration of your degree programme. It will also enable you to build your career management skills through reflection and personal development. Through academic and professional skills combined, the module will provide the foundation for career progression (including preparation for placement or ongoing in-role development) and support you to become an increasingly independent learner. You will be supported in developing your professional skills by demonstrating your knowledge and ability to generate professional documentation such as CV's and application letters. Using close integration across the year, the module will support the academic skills required in other modules.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Apply the academic skills required to acquire, appraise and utilise information within different aspects of their chosen field.
- Communicate and disseminate relevant information in a variety of ways for different audiences and purposes.
- Demonstrate professional skills to enhance future learning and career prospects.

## The Science of Food

**Year of study** 1
**Code** R4003HF
**Credits** 20
**Core/option** Core
**Module contact** Jon Bentley

In this module, you will have an opportunity to broaden and enhance your knowledge to gain an understanding of the scientific principles that underpin a range of aspects of food science.

This module will prepare you with the scientific knowledge and opportunity to develop strong practical skills. This will include an introduction to basic laboratory skills and techniques. You will also be introduced to microbiology and related food safety aspects, important in the safe and legal production of food, which assures consumer safety and protection.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Identify the underpinning biological, physical and chemical principles of food science.
- Apply biological, physical and chemical principles to issues relating to microbiology and food safety.
- Select relevant laboratory techniques to carry out food analysis.

## Food Formulation and Ingredients

**Year of study** 1
**Code** R4004HF
**Credits** 20
**Core/option** Core
**Module contact** Dr Claire Munialo

This module will focus on food ingredients and the part they play in the development and production of food products. The ingredients selected for study will be varied but could include anything from major commodities such as dairy products to industry-specific raw materials.

You will look at the factors affecting the functions and applications of these ingredients and how they affect the manufacture of food products. The module also focuses on the formulation/development of food products with these ingredients and the challenge of developing foods with health benefits.

You will be introduced to the concept of food quality and how it can be assessed and controlled, using industry techniques such as benchmarking.

This module will develop your confidence in working in a practical setting and give you the opportunity to work as a team while you test and evaluate products.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to;

- Explain the use of major commodity ingredients used in developing and reformulating food products.
- Assess functions of fats, carbohydrates, vitamins and minerals within food products.
- Identify the correct use of preservatives, colours, emulsifiers and functional ingredients.
- Formulate specifications and recipes using a range of food ingredients.

## Introduction to Human Nutrition

**Year of study** 1
**Code** R4005HF
**Credits** 20
**Core/option** Core
**Module contact** Helen Darracott

Nutrition plays a fundamental role in human health and in the development of new food products. Having an understanding of human nutrition is essential in undertaking a degree in food science and for future careers in the food industry.

In this module, you will develop a comprehensive understanding of food, energy and nutrients and their importance in human health and wellbeing. You will explore cultural and societal factors that influence nutrient intake and review nutritional requirements for population groups throughout the lifespan.

The module will also introduce you to current issues affecting nutrition from global public health challenges to national policy to improve population health and wellbeing.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Describe the role and impact of food in the development of a healthy body.
- Explore national and global nutritional challenges.
- Review how changes in policy and guidance affect public health nutrition.
- Discuss cultural and societal influences on food consumption and wellbeing.

## Tools and Techniques for Food Evaluation

**Year of study** 1
**Code** R4006HF
**Credits** 20
**Core/option** Core
**Module contact** Rachel Hilton

The testing and analysing of food products are essential to ensure quality and maintain safety. Sensory evaluation is an important process in the food industry to measure consumers' reactions to specific food products using the five senses.

This module provides theoretical and practical knowledge and skills required to undertake food analysis and quality control.

In this module, you will be expected to work collaboratively to gain confidence in applying practical skills for data collection and analysis. You will learn the tools and techniques to design sensory tests. You will also

conduct functional and analytical testing of food products, collect data and learn the skills to review and analyse it.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Choose tools and techniques in food quality evaluation.
- Outline the appropriate tools to evaluate food quality.
- Interpret and evaluate data patterns and trends from analytical testing of food products.
- Design, organise and run a sensory evaluation test.

## Food Quality and Safety

**Year of study** 2
**Code** R5017HF
**Credits** 20
**Core/option** Core

This module will give you the skills and knowledge to produce innovative, safe, nutritious, high-quality food products. It provides you with the underpinning scientific and technical knowledge to enable the identification and effective management of a range of food quality and safety challenges. You will evaluate technologies, concepts and scientific information to support food industry innovation. In the production and processing of foodstuffs, food quality and safety are integrated concepts that apply throughout the whole food chain.?This module will give you the ability and confidence to analyse and evaluate the causes and implications of food safety, spoilage and shelf-life issues through the farm-to-fork continuum. Gaining an understanding of quality assurance and quality management principles and practices through their application will allow you to apply these in a product development setting.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Evaluate the causes and consequences of food safety and spoilage through the food supply chain for a variety of food groups.
- Appraise and analyse methods of food processing and preservation in relation to food quality and safety.
- Evaluate and implement appropriate complementary standards for the management of food quality and safety.
- Conduct a practical assessment of product durability and safety.

## Academic and Professional Development

**Year of study** 2
**Code** R5015HF
**Credits** 20
**Core/option** Core

The module builds on the academic and professional skills you will have already developed. Deepening the learning and practice to further develop the students' academic programme and in preparation for career development and further study. It will employ case studies and/ or food projects to critically utilise sources of relevant data and information.

The opportunity to develop your employability skills and potential in your degree is paramount for the job market. In this module, you will be guided through possible career paths and learn to identify employers' needs in a changing job market. Relevant practical sessions will help you to prepare for future employment. Topics covered include communication and presentation skills and career management. All of these skills are vital when applying for your first graduate job, postgraduate study or developing your career.

**Intended Learning Outcomes**

Students who successfully complete this module will:

- Critically analyse information from primary sources.

- Organise, acquire, process, and apply the information to address a problem.
- Demonstrate career management skills and work readiness through reflection and personal development planning.
- Develop the skills to enhance professional development.

## Food Product Innovation

**Year of study** 2
**Code** R5021HF
**Credits** 20
**Core/option** Core
**Module contact** Rachel Hilton

Food innovation and new product development (NPD) is an important process for the food industry to retain and attract new consumers. In this module you will follow the process of NPD, developing a concept product which incorporates current food and consumer trends. Working as a team, you will be guided through the process of generating the concept product, taking into consideration the evaluation of target consumers, sensory evaluations, raw materials, food safety and packaging. Consideration will also be given to nutrition and food law legislation key aspects such as labelling. You may wish to take on a specific role within the team to help plan an appropriate concept. The role will be dependent on the specialism of your degree route.

The module will give you a hands-on food development experience, resulting in the development of a product concept.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Articulate an understanding of the innovation process when developing a food product from the ideas stage to market launch.
- Evaluate the implications of the raw material functionalities and food safety when developing a new product.
- Identify the needs of the target consumer, food and market trends and how this influences the concept idea.
- Apply appropriate sensory evaluation methodology to the concept development process and explain how this influences change.
- Ensure the final product concept adheres to current nutritional and labelling guidelines.

## Managing People and Processes

**Year of study** 2
**Code** R5018HF
**Credits** 10
**Core/option** Core
**Module contact** Kevin Flint

Whatever your future aspirations, you will be working with a wide range of people and processes in your career. This module will equip you to understand what motivates people and what that tells us about how to manage work more effectively to deliver business solutions.

In this module the study of factors such as business processes and practices, leadership and management, communication skills, teamwork and employment law will help you develop your skills as a manager. This will include consideration of developing working practices, international and cultural influences and environments, and recent changes in business and technology.

You will also consider how to manage yourself to develop a deeper understanding of your work preferences and behaviours. This will support you in your preparation for placement and your career.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Apply skills and understanding in process management.
- Evaluate the purpose and effectiveness of people management in employment.
- Self-evaluate their readiness for work (or placement as appropriate), demonstrating an understanding of challenges that might arise, and potential solutions.

## Food Product Processing

**Year of study** 2
**Code** R5006HF
**Credits** 20
**Core/option** Core
**Module contact** Mr Martin Anderson

A wide range of food processing methods are used by the food industry today and food professionals should possess a competent understanding of the principal methods of manufacture, as well as an appreciation of new and innovative methods of processing. In this module, you will develop knowledge and an applied practical understanding of the key food processing technologies used in the manufacture of food products. You will develop skills to upscaling a product recipe for production and develop an understanding of the challenges of volume production. You will also be introduced to the technology of food packaging.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Analyse operations and processes used by the food industry in the context of the manufacture of major food product groups.
- Develop and apply hygienic process control systems in food manufacturing.
- Modify products and processes to upscale concept product development to process implementation.
- Produce a batch of food products suitable and safe for sale, suitable for a public engagement activity.

## Food Marketing and Retail

**Year of study** 2
**Code** R5005HF
**Credits** 20
**Core/option** Core
**Module contact** Zoe Harrison

This module puts Food Science and Innovation into the context of the food supply chain and consumer markets. You will learn to apply techniques in marketing research in order to effectively research and understand consumer markets. Evaluating the food retail environment helps you to implement your product development strategies from other modules. This module enables you to create and implement marketing communications campaigns. The techniques and knowledge learned in this module will also contribute to your academic and professional development.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Develop strategies for effective food marketing from manufacturers and processors through to consumer-facing retailers.
- Devise and implement consumer research using contemporary tools to inform and underpin product development strategies.
- Create marketing campaign briefs and execute brand and communications media.
- Apply effective digital tools for managing team processes and creative output in marketing operations.

## Contemporary Issues in Food

**Year of study** 2
**Code** R5016HF
**Credits** 20
**Core/option** Core
**Module contact** Helen Darracott

This module aims to explore issues currently affecting the food industry sector. This module will challenge you to examine a variety of topical food issues such as sustainability, nutritional challenges and ethical factors. It will enable you to critically analyse the impact of the food industry on a global and national level, from field to fork. It will enable you to understand the role of regulatory bodies within the food industrial context and the different strategies taken to address the current challenges within these areas. Students will discuss how food policies have evolved and look at how they may develop in the future.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Explain the impact of sustainability and its applications to the food business.
- Define and evaluate the systems of food security at a national and global level.
- Analyse issues in nutritional challenges globally and nationally.

## Innovation in Food Technology

**Year of study** 3
**Code** HF
**Credits** 10
**Core/option** Core
**Module contact** Rachel Hilton

Technological advances impact the food industry in many ways. This module will focus on current industry technologies and will explore new and novel technologies that are important for modern food and packaging processing. Food processing is becoming more sophisticated and diverse in response to the growing demand for food safety, food quality and healthy food.

In this practical-focused module, you will explore the principles of novel processing highlighting the advantages and disadvantages of the processes and possible applications in the food industry.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Critically evaluate a range of novel food manufacturing techniques.
- Appraise emerging novel and sustainable food and packaging materials.
- Assess emerging advances in technology across the food supply chain.

## Graduate Professional Development

**Year of study** 3
**Code** HF
**Credits** 20
**Core/option** Core
**Module contact** Rachel Hilton

Continuing Professional Development (CPD) is a combination of approaches, ideas and techniques that will help you manage your own learning and growth. There is an increasing expectation for professionals to undertake CPD regardless of industry sector, career level, job role and responsibilities. CPD helps individuals to regularly focus on how they can become more competent and effective professionals. This module will allow you to gain self-management experience through engaging with continuing professional development that will help contribute to your future career.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Identify opportunities to improve knowledge and skills, relevant to the food industry.
- Evidence engagement of continual professional development.
- Demonstrate development of abilities in critical reflection and self-evaluation.

## Sustainability Solutions for the Food Industry

**Year of study** 3
**Code** HF
**Credits** 20
**Core/option** Core
**Module contact** Rachel Hilton

In this module, students will, as a group, solve a real-life problem concerning sustainability in the food industry. Working with the Sustainable School of Food and Farming you will be tasked with solving industry-focused sustainability challenges in line with the school's objectives This will be focused on food production and innovation.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Develop an advanced understanding of sustainable development and its economic, social and environmental dimensions.
- Work effectively as a team to provide solutions to an industry-related problem.
- Propose appropriate solutions and recommendations to the challenge/brief set by SSFF in a formal setting.

## Dissertation

**Year of study** 3
**Code** HF
**Credits** 40
**Core/option** Core

The dissertation is designed to allow you to develop the skills and personal resilience needed to undertake a sustained, significant and high-quality research project. In conjunction with a supervisor, and in light of detailed course-specific advice, you will select a topic for investigation. You will then plan, execute, report and present your project. The module will draw upon learning from other taught modules, but it also requires a high degree of independent learning.

You will need to apply your learning about the research methods associated with your discipline as you locate data to support your project; you may need to apply methods creatively according to the nature of your research topic. Throughout the module, you will be expected to make choices about the scale and manageability of your work; you will also need to apply good time management skills to ensure success. The project will require you to search for literature related to your topic and to read independently. You must make decisions about the direction of your research, and you will be expected to work proactively to benefit from supervision opportunities.

You will be expected to ensure that each part of your project is ethically sound; this means following protocols but also by developing an ethical mindset which is sensitive to stakeholders and issues arising in the research process. You must also ensure that you attend to issues of health and safety throughout your research.

## Food Industry Project

**Year of study** 3
**Code** HF
**Credits** 20
**Core/option** Core
**Module contact** Rachel Hilton

Teamwork is important because it enables you to share ideas and responsibilities. Research shows that collaborative problem-solving leads to better outcomes. As a food industry professional, you will be expected to work collaboratively to achieve a specified outcome.

In this module, students will work in small teams, taking on a specific role to solve a live industry challenge. The role will be dependent on the specialism of your degree route.

Your team project will be based on an in-depth study of a particular topic relevant to innovation, food science, technology, manufacturing or retail. You will apply your knowledge and skills to formulate or modify a food, concept, packaging or process. Challenges will reflect current industry requirements.

With lectures and guidance, you will plan your own investigations and action plans to meet the brief and solve the challenges in the brief.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Produce appropriate solutions to the industry brief.
- Conduct, plan and record investigations into the proposed project brief.
- Critically Appraise your role and responsibilities within the team (impact of decisions).

## Global Food Policy

**Year of study** 3
**Code** HF
**Credits** 10
**Core/option** Core
**Module contact** Rachel Hilton

This module will focus on current and topical issues affecting food policy. You will gain an understanding of how policies are lobbied, proposed and implemented, including the rationale for intervention, both at the national and global level. Through organisations such as the World Health Organisation (WHO), the Food and Agriculture Organization of the United Nations (FAO) and national governments, you will have the opportunity to reflect on the challenges for the future and address key concerns impacting the food system from a social, economic, environmental and human health perspective.

**Intended Learning Outcomes**

Students who successfully complete this module will be able to:

- Critically appraise the implementation and impact of policies on society and the environment.
- Evaluate and propose actions that address challenges impacting key stakeholders in the food system.
- Review current concerns in global food policy and the people it affects.