

Food Safety, Hygiene and Management Masters/MSc/PG Diploma/PG Certificate

Postgraduate degree course in Masters/MSc/PG Diploma/PG Certificate (including topics such as food control, hazard analysis and critical control point (HACCP) and food chain security):

This programme provides advanced academic training in food safety and food control.

You will consider the relationship between food and public health, and examine the scientific, technical, managerial, political and legislative factors that influence food safety.

Chemical Engineering is dynamic and evolving. It provides many solutions to problems facing industries in the pharmaceutical, biotechnological, oil, energy and food and drink sectors. It is vital to many issues affecting our quality of life; such as better and more economical processes to reduce the environmental burden, and more delicious and longer lasting food due to the right combination of chemistry, ingredients and processing.

Birmingham is a friendly, self-confident, School which has one of the largest concentrations of chemical engineering expertise in the UK. The School is consistently in the top five chemical engineering schools for research in the country.

It has a first-class reputation in learning, teaching and research, and is highly placed in both *The Guardian* and *The Times* league tables. The School was recently awarded the **Queen's Anniversary Prize for Higher Education**.



[Study here and find out why the University of Birmingham was awarded The Times and The Sunday Times University of the Year 2013-14 \(http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx\)](http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx)

Course fact file

Type of Course: Continuing professional development, taught

Study Options: Full time, part time

Duration: MSc: 1 year full-time, 2 years part-time; PG Diploma: 1 year part-time; PG Certificate: 6 months part-time

Start date: September/October

Related courses

[Advanced Chemical Engineering Masters/MSc/Diploma \(/postgraduate/courses/taught/chemical-engineering/advanced-chemical-engineering.aspx\)](/postgraduate/courses/taught/chemical-engineering/advanced-chemical-engineering.aspx)

[Biochemical Engineering Masters/MSc/Diploma \(/postgraduate/courses/taught/chemical-engineering/biochemical-engineering.aspx\)](/postgraduate/courses/taught/chemical-engineering/biochemical-engineering.aspx)

[Industrial Project Management Masters/MSc/Diploma/Certificate \(/postgraduate/courses/taught/chemical-engineering/industrial-project-management.aspx\)](/postgraduate/courses/taught/chemical-engineering/industrial-project-management.aspx)

[Postgraduate degree courses - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/index.aspx\)](/schools/chemical-engineering/postgraduate/index.aspx)

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Details

This programme provides advanced academic training in food safety and food control. You will consider the relationship between food and public health, and examine the scientific, technical, managerial, political and legislative factors that influence food safety.

The course is particularly suitable for those with relevant food related knowledge and/or experience including:

- Hygiene managers or supervisors already working in the food industry
- Staff working in competent authorities or enforcement; for example, Environmental Health Officers or Food Safety Officers
- Staff in diagnostic or food microbiology laboratories
- Students who have completed relevant undergraduate degrees such as Food Technology and wish to find employment in the food industry or local government
- Food hygiene and management trainers or consultants

Programme content

The syllabus includes detailed coverage of food safety hazards, especially microbial contamination, and the impact of such contamination on public health. Also covered in depth are the Food Controls used in the EU to contain such hazards.

This postgraduate programme is designed to provide rigorous academic training in Food Safety, Hygiene and Management.

It provides an opportunity for students to develop an appreciation of the relationship between food and public health by focusing on the factors that influence food safety and quality. These are multidisciplinary and include scientific, technical, managerial, political and legislative matters. Topics covered include:



Food Safety

Access to safe food should be a basic human right. Unfortunately food borne illness is universal. Changing methods of food production and the globalisation of the food chain increase the risk that food borne contaminants will cause larger and more serious outbreaks, as well as providing opportunities for emerging pathogens. **Ten facts on food safety** (http://www.who.int/features/factfiles/food_safety/en/).

The MSc in Food Safety Hygiene and Management differs from other postgraduate food courses in that it focuses on the mechanisms of Food Control and Food Safety Management. All Food Control and Safety Systems seek to prevent food safety hazards from causing illness; microbiological hazards are considered to be some of the most significant food safety hazards in the food chain and the content of the course reflects this viewpoint. <http://www.hpa.org.uk/HPA/Topics/InfectiousDiseases/InfectionsAZ/1191942152843/> (<http://www.hpa.org.uk/HPA/Topics/InfectiousDiseases/InfectionsAZ/1191942152843/>)

Food Control

One of the main mechanisms of Food Control is the implementation of food hygiene and food standards legislation. Together with the relevant food microbiology, this legislation forms the basis of the course, underpinning the study of processes and management systems commonly used by industry and the competent authorities.

Hazard Analysis and Critical Control Point (HACCP)

The course also covers HACCP, Risk Assessment, Quality Assurance, Integrated Pest Management, premises and equipment design and other aspects of control in a national and international context. The research projects conducted by the students as part of the MSc reflect these priorities and may be laboratory or practice based.

Food Chain Security

The emphasis on implementation and enforcement of legislation and safety standards is a novel approach and, by offering a comprehensive picture of food chain security, provides progression for those from undergraduate degrees such as food technology, veterinary medicine or microbiology. This legal perspective qualifies successful candidates to work in enforcement or advisory positions for UK competent authorities such as the Food Authority (Local Authority). The course is accredited by the Environmental Health Registration Board.



The legislation considered is EC based and the course welcomes many students from other member states, some of whom return home to work in their own Competent Authorities or to represent their country on specialist food committees at national, EU and international level. Several have also taken up lectureships in food safety. The course has also become increasingly popular with overseas students, especially those from countries wishing to accede to the EU or to trade with it.

Related links

- [Postgraduate degree courses - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/index.aspx\)](#)
- [Taught postgraduate programmes - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/taught-programmes.aspx\)](#)

Why study this course

We'll let our students speak for us:

Food industry

Some of the graduates from the Msc Food Safety Hygiene and Management programme find work in the food industry after completing the course. Graduates work in the UK and in many other countries.

Patricia, from Spain, feels 'If you are interested in the food industry the course is definitely useful because you learn how it all works and realise how all the steps in the food chain are very important.'

Sandrine came from a microbiology background and works in the food industry in the UK. She writes: 'I did use and still will be using most of the modules, especially the safety and HACCP because now we have to be proactive (in the food industry) and try to foresee what could go wrong before it happens.'

Food and Microbes was identified by Mohammed, a dietician, as a significant module. He says 'it was very important and I think this module is the base of food hygiene.'

After graduation Amee started work as a Manager in Quality Assurance (Food Safety Management Systems) for Amul (the biggest dairy in India). She says 'The course has helped me immensely to acquire in depth knowledge about food safety.'

Harry Zhang is employed by a major manufacturer in China. He says 'The four taught modules are very helpful for my current work at Heinz as a technical service specialist. You can learn everything from them that is practical to the actual food industry. The research course and major project are very good attempts for a student to challenge himself. You can improve a lot in ways of thinking, ways of organizing project during that time. This has proved useful in my actual work after graduation.'

He continues: 'It is definitely of great value learning here. The teaching team of Food Safety, Hygiene and Management are no doubt one of the best teams I've ever met during my decades of academic career. They make every effort to make you better no matter what background you were in the past.'

在伯大的食品安全课程对我毕业后在亨氏的工作有着极大的帮助，课程设置很实用，毕业设计也非常锻炼自身的思维能力和组织能力，在教授的辅导和帮助下，可以出色地完成自己的项目研究。

在这里，不仅仅是知识上的增长，很多外校的教授，专家，甚至大企业的负责人都会被邀请至课堂，让我们从实践角度理解所学的知识，这种多样的教学方式使我受益很大，增长很多见识。

食品安全的整个教学团队是我学习生涯中遇到的最优秀的团队之一，团队中所有的教授老师都非常愿意帮助我们，有任何疑惑和困难，他们都会尽最大可能帮我们解决。无论我们的学识背景如何，他们都会努力让我们更加优秀。

Food Control

The course emphasises legislative aspects of food control as well as technical and scientific matters. Andrew works as an Environmental Health Officer in a UK Local Authority and he comments: 'I moved from being a general EHO to a specialist Food Safety Team during the course and have remained there since. I am now the team leader for 9 EHO/FSO and 4 EOs. The course content was very comprehensive and useful for the work which I am involved with at the moment.'

Elli originally studied Biotechnology in Greece. She wrote 'My experience at Birmingham University, besides being very enjoyable both on a personal and academic level, has definitely provided me with the knowledge and the analytical way of thinking, which have been invaluable tools not only for job interviews but mainly for my everyday job. These valuable skills and of course the University's reputation played a role as a "door-opener". Currently, I am working for the Food Standards Agency as a Scientific Officer.'

Eleni also originated from Greece. A qualified vet, she came to work in the UK in meat hygiene and says of the course: 'On a number of occasions this MSc has been a plus for my professional development e.g.

- Being selected as a food safety expert in the European Commission, DG SANCO
- Acquiring a teaching job in a Food Technology College.

Now I'm a candidate student for a PhD in the University of Thessaly, Medicine Faculty.'

Past students can also be found working in food control outside the UK including Greece, China (Hong Kong), Turkey, Korea, Brunei Darussalam and Saudi Arabia.

Further Study

About 10% of graduates continue in higher education and acquire a doctorate. One graduate who has followed this route has the following remarks about the course: "My name is Ihab Habib. I am an Egyptian, and I obtained the MSc degree over the academic year 2003/04 with merit grade. I am a veterinarian by education and choose to focus my work on food safety and microbiology. I find the MSc in food safety, hygiene and management in Birmingham a great opportunity for anyone who wants to study food safety with a great sense of practicality. The training modules cover all the aspects you need to be well equipped for starting or enhancing your career in food safety. Now I have almost finished my study in Belgium (Ghent University) for a PhD in Veterinary Public Health and Food Safety. Also I obtained a lecturer position in Alexandria University in my home country Egypt."

Ding Luo, from Shanghai, completed her PhD in molecular microbiology. She says of the course: "it's very useful in terms of introducing people to the food safety related matters regardless of what background they are from, and ideal for people having or seeking careers in industrial or governmental environment. Also, obtaining a HACCP certificate is very valuable."

Other students have continued to study directly related fields and have embarked on PhD research on areas such as the implementation of HACCP or other aspects of food safety and control.

Other opportunities

Several students have decided to work advising businesses on food safety and HACCP. Some have joined existing companies and others have set up as independent consultants, offering training as well as advice. Other candidates have decided to use their knowledge working in food microbiology labs while some have remained in academic life as researchers. Three past students have acquired lectureships at Universities and are themselves teaching food safety while several more act as examiners or have visiting lectureships.

Summary

A final comment from Ihab sums up the opinion of many of the students: 'My Birmingham experience was amazing; a high level of science, in a multicultural city and a world class university. So keep up the hard work and enjoy Birmingham.'

Modules

Course Structure

The course is modular in nature, comprising 180 credits. Of these, 120 credits are taught modules which are organized into 4 modules, each of thirty credits. The remaining 60 credits comprise a research component.

The MSc is available as a fulltime course (one year) or as a part time course. It is also possible to take only the taught elements, in which case either a Postgraduate Certificate (60 credits) or a Postgraduate Diploma (120 credits) will be awarded after successful completion of the relevant modules.

Part time candidates may register for as few as one or as many as four taught modules in any given academic year.

- **Part-time Postgraduate Certificate** – A candidate who successfully completes any two of the four taught modules may be awarded a Postgraduate Certificate in Food Safety and Food Legislation .
- **Part-time Postgraduate Diploma** – A candidate who successfully completes all of the four taught modules may be awarded a Postgraduate Diploma in Food Safety and Food Legislation
- **Part-time MSc programme** – the taught elements are completed first, over one or two years with the research element taken as the final year.
- **Full-time MSc programme** – both elements are undertaken concurrently (open to overseas students).

Module Description

Food Control (20 credits)

An Introduction to Food Control in the EU, using the UK as the main example. The module will focus on how the member states try and ensure consumers can access safe food. The main food hygiene legislation will be reviewed and put in the context of premises inspection and enforcement including imported food. Approaches taken by other member states and important trading partners such as the USA, Australia and Canada will be compared to the UK. Problems such as fraud in the food industry will be considered, as will key issues and events which demonstrate learning points for enforcement.

Food Manufacture and Technology (20 credits)

In this module the principles of food manufacturing technology will be explained, highlighting core processing unit operations used by the industry and the equipment used to deliver such processes. Both traditional and novel approaches to processing and preserving foods will be studied. Different types of food packaging will be studied as well as the importance of sustainability and the environment. There will also be a strong focus on those generic aspects of food processing that directly

impact on consumer safety. These include hygienic equipment and process design, process operation and control, cleaning of process plant, the manufacturing environment, product storage and distribution.

Food and Microbes (20 Credits)

Current and existing knowledge regarding the microbiological characteristics, virulence and disease associations of the bacterial, viral, fungal and protozoan pathogens associated with foodborne illness will be reviewed. In addition, methods for sub-speciation and epidemiological typing of bacterial pathogens will be investigated. Microbial food spoilage will also be studied to highlight the organisms and processes involved. The intrinsic factors that affect the association of particular microbes with certain foods will also be investigated.

Food Safety Management Systems (10 credits)

This module is an examination of the systems used to manage food safety hazards including HACCP, allergen risk assessment & management principles and quality assurance systems. The module sets these systems within both the legal and food safety context and thus considers the application of these systems from the food industry and relevant food safety enforcement bodies.

Pest Management and Cleaning systems (10 credits)

Pest management and cleaning systems are basic requisites in all types of food businesses to ensure safe production of food, whether small or large. This module will provide the knowledge and understanding to control the hazards associated with pests and contamination. Lectures will take place on the biology and ecology of common food pests, cleaning materials and methods and the importance of hygienic design. There will be a range of problem solving workshops to apply this new knowledge and evaluate pest management and cleaning systems. This module is essential for anyone who wishes to work in hygiene management sector of the food industry.

Chemical Contamination of Food and Water (10 credits)

Students will learn about the importance and effects of the major classes of chemical contamination in food and drinking water. Additionally, students will be made aware of a) sources of contaminants, b) methods of treatment of food and water and c) the importance of contaminants in food relative to other uptake pathways. Legally accepted chemical additives will also be considered in this module.

Sustainability in the Food Industry (10 credits)

Sustainability and the need to address environmental issues is a significant driver in the food industry. It has a major impact on the production and therefore the safety of food. This module provides an overview of the main issues facing the industry, including the economic, legislative and political contexts which influence the options available to the industry.

Applied Food Microbiology (10 credits)

During this module food composition will be examined to reveal why it is a good medium for foodborne pathogens and spoilage organisms. In addition, the effect of food structure and composition on the development of microorganisms will be reviewed. The association of intrinsic and extrinsic factors with food production of certain foods will be investigated. Examples of traditional and rapid laboratory techniques will be studied as they are applied to the industry including their advantages, limitations and the way they affect quality control and safety.

Food Chain Security (10 Credits)

A consideration of food security as defined by the WHO. Aspects of insecurity and the mechanisms to manage them will be addressed including, for example:

- Deliberate contamination
- Infrastructure issues
- Food safety management systems
- Global sourcing

Research methods (10 Credits)

The module is designed to provide students with the key skills necessary to undertake an independent research project.

Major project (50 Credits)

This module allows a student to explore a particular area of food safety, hygiene or management in more depth. It is designed to provide students with the underpinning skills to design perform and complete a piece of independent research. After research training is completed students will undertake a major research project consisting of approximately 12 weeks data gathering and analysis. This will be submitted as a dissertation. A viva will form part of the assessment protocol.

Assessment

- Taught modules are assessed through either a combination of examination and coursework or by coursework alone
- The research project is assessed through a written research report and a viva.

Fees and funding

Tuition fees for home/EU students (2015/2016)

Full-time fees

Postgraduate Masters £6,840

.....

Postgraduate Diploma £4,560

.....

Postgraduate Certificate £2,280

.....

Part-time programmes

Most part-time programmes run for two years and their fees are one half of the standard full-time programme fees.

Tuition fees for international students (2015/2016)

International student tuition fees are set at **£17,960**. For further information please view the [fees for international students \(/International/students/finance/fees.aspx\)](#) page.

Part-time programmes

UK student visa regulations mean that students classed as overseas for fees purposes may normally only register on a full-time basis.

Further funding information

Learn more about [fees and funding \(/postgraduate/pgt-fees/fees.aspx\)](/postgraduate/pgt-fees/fees.aspx)

Scholarships and studentships

Scholarships may be available. International students can often gain funding through overseas research scholarships, Commonwealth scholarships or their home government.

For further information contact the School directly or email [sfo@contacts.bham.ac.uk \(mailto:sfo@contacts.bham.ac.uk\)](mailto:sfo@contacts.bham.ac.uk)

Entry requirements

One of the following is required:

- At least a second-class Honours degree awarded by an approved university or institution in an appropriate subject
- A degree without Honours, awarded by an approved university or institution in an appropriate subject, followed by at least two years approved postgraduate experience

Learn more about [entry requirements \(http://www.birmingham.ac.uk/students/pg/requirements\)](http://www.birmingham.ac.uk/students/pg/requirements)

International students

We accept a range of qualifications from different countries – learn more about [international entry requirements \(http://www.birmingham.ac.uk/students/pg/requirements/international\)](http://www.birmingham.ac.uk/students/pg/requirements/international)

[Standard English language requirements \(/postgraduate/requirements-pgt/international/index.aspx\)](/postgraduate/requirements-pgt/international/index.aspx) apply

How to apply

When clicking on the Apply Now button you will be directed to an application specifically designed for the programme you wish to apply for where you will create an account with the University application system and submit your application and supporting documents online. Further information regarding how to apply online can be found on the [How to apply pages \(http://www.birmingham.ac.uk/students/courses/postgraduate/apply-pg/index.aspx\)](http://www.birmingham.ac.uk/students/courses/postgraduate/apply-pg/index.aspx)

[Apply now \(https://pga.bham.ac.uk/lpages/EPSo10.htm\)](https://pga.bham.ac.uk/lpages/EPSo10.htm)

Related links

[Taught postgraduate programmes - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/taught-programmes.aspx\)](/schools/chemical-engineering/postgraduate/taught-programmes.aspx)

[Postgraduate degree courses - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/index.aspx\)](/schools/chemical-engineering/postgraduate/index.aspx)

Related news and events

[News archive - Listeria and food inspection seminar - Division of Food Safety \(/schools/chemical-engineering/news/archive/listeria.aspx\)](/schools/chemical-engineering/news/archive/listeria.aspx)

[Chemical Engineering postgraduate Tullow Group scholarship scheme \(/schools/chemical-engineering/news/archive/Chemical-Engineering-postgraduate-scholarships.aspx\)](/schools/chemical-engineering/news/archive/Chemical-Engineering-postgraduate-scholarships.aspx)

Learning and teaching

Learning, teaching and assessment

Various learning and teaching methods are used on the programme, including traditional lectures, computer-based learning, student-based learning such as case studies and directed learning, laboratories and visits. The programme is assessed using both traditional unseen examination and coursework. The MSc requires candidates to complete a research project and submit a thesis.

Skills gained

Apart from a high level of technical knowledge, students will also gain the ability to critically analyse data and published information, apply scientific principles and legislation to practical situations and become experienced at locating and interpreting government guidance. Successful candidates will also develop an advanced understanding of common food safety management systems such as Hazard Analysis Critical Control Points (HACCP).

Careers

The Postgraduate Diploma and MSc are accredited by the Chartered Institute of Environmental Health /Environmental Health Registration Board as a route to the Higher Certificate in Food Premises Inspection and therefore very appropriate for anyone wishing to work as a food premises officer in a food authority or competent authority. Past students have found work in a variety of areas, including NGOs, competent authorities in the UK and overseas, academic institutions and the food industry.

Related staff

[Ms Madeleine Smith \(/staff/profiles/chemical-engineering/smith-madeleine.aspx\)](/staff/profiles/chemical-engineering/smith-madeleine.aspx)

[Mrs Lisa-Marie Winnall \(/staff/profiles/chemical-engineering/winnall-lisa-marie.aspx\)](/staff/profiles/chemical-engineering/winnall-lisa-marie.aspx)

Employability

The course is particularly suitable for persons with an interest in food safety or with relevant food related knowledge and experience including:

- Practitioners in the food industry who are in supervisory positions or consultancy
- Staff in local authority employ (Environmental Health Officers and Technical Officers)

- Candidates wishing to work in control authorities or NGO's
- Staff in diagnostic or food microbiology laboratories
- Students who have completed relevant undergraduate degrees (e.g microbiology, food technology) and who wish to find employment in the food industry/local government
- Food hygiene and management trainers

Graduates from the Msc/Pg Diploma in Food Safety Hygiene and Management typically find work which uses the skills and technical information gained from the course. Many work in the Food industry or in Food Control. Some comments about the course from past students can be found in the "Student comments" tab at the top of this page.

University Careers Network

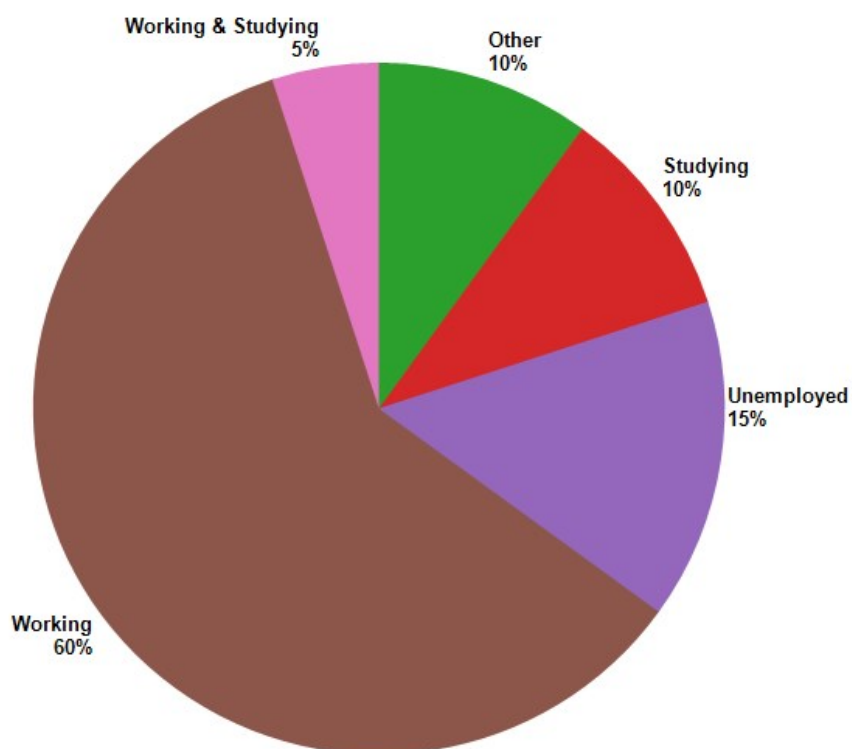
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive work experience opportunities to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge.

If you make the most of the **wide range of services** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx>) you will be able to develop your career from the moment you arrive.

Destinations of Leavers from Higher Education (DLHE) 2011/12 (postgraduate taught graduates)

The DLHE survey is conducted 6 months after graduation.



Examples of employers:

- BP
- British Gypsum
- Citi
- Coca-Cola
- Foster Wheeler Energy
- Jacobs Engineering
- Johnson Matthey
- KBR
- Pepsico
- RBC Capital Markets

Examples of occupations:

- Chemical Engineer
- Development Engineer
- Finance Analyst
- Market Analyst
- Performance Engineer
- Process Engineer
- Process Development Technologist
- Process Support Engineer
- Team Leader
- Test and Validation Engineer

Further study - examples of courses:

- MRes Chemical Engineering Science

- MSc Advanced Chemical Engineering
- MSc Biochemical Engineering
- MSc Chemical Engineering
- PhD Chemical Engineering
- PhD Formulation Engineering
- PhD Regenerative Medicine
- PGCE Mathematics

Visit the **Careers section of the University website** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx>) for further information.

Professional accreditation

The Postgraduate Diploma and MSc are accredited by the Chartered Institute of Environmental Health /Environmental Health Registration Board as a route to the Higher Certificate in Food Premises Inspection and therefore very appropriate for anyone wishing to work as a food premises officer in a food authority or competent authority. Past students have found work in a variety of areas, including NGOs, competent authorities in the UK and overseas, academic institutions and the food industry.





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