

The University has accepted the following definition of employability as articulated in 'Future Fit: preparing graduates for the World of Work' published by UUK/CBI (2009)

**“A set of attributes, skills and knowledge that all labour market participants should possess to ensure they have the capability of being effective in the workplace – to the benefit of themselves, their employer and the wider economy”**

The University has agreed the following attributes as important in the development of an employable graduate: self management; teamworking; business and customer awareness; problem solving; communication and literacy; application of numeracy; application of information technology.

**Self management** – readiness to accept responsibility, flexibility, resilience, self-starting, appropriate assertiveness, time management, readiness to improve own performance based on feedback/reflective learning

**Teamworking** – respecting others, co-operating, negotiating/persuading, contributing to discussions, and awareness of interdependence with others

**Business and customer awareness** – basic understanding of the key drivers for business success – including the importance of innovation and taking calculated risks – and the need to provide customer satisfaction and build customer loyalty

**Problem solving** – analysing facts and situations and applying creative thinking to develop appropriate solutions.

**Communication and literacy** – application of literacy, ability to produce clear, structured written work and oral literacy – including listening and questioning

**Application of numeracy** – manipulation of numbers, general mathematical awareness and its application in practical contexts (e.g. measuring, weighing, estimation and applying formulae).

**Application of information technology** – basic IT skills, including familiarity with work processing, spreadsheets, file management and use of internet search engines

Underpinning all these attributes, the key foundation, must be a **positive attitude**: a 'can-do' approach, a readiness to take part and contribute, openness to new ideas and a drive to make these happen.

**BUT**

**HOW WILL THESE SKILLS BE DEVELOPED THROUGHOUT YOUR CHEMISTRY DEGREE?.....**

## OVERVIEW OF CHEMISTRY COURSE

Throughout the BSc and MChem Chemistry degrees students steadily progress in their knowledge and development of chemistry. In tandem with this, students steadily develop their employability skills:

- **Information technology** and **application of number** are introduced in the first year and as the chemistry problems increase in complexity so do your skills in these areas develop too.
- The project work in all chemistry degrees relies on the development of **self-management skills**: by its very nature, scientific research demands resilience, independent learning, flexibility and time management.
- In addition to this **communication and literacy skills** are developed through presentation of research in the form of a written project, a viva voce and in some cases a mid-project presentation.
- **Problem solving skills** form the basis of a chemistry degree and all graduates of this subject will have highly developed skills in this area.
- Any research scientists will talk about the importance of collaboration in science. This essential part of science equates with the employability skill of **teamworking**. Ample opportunity is given throughout the degree to collaborate in a team and share ideas.

## HOW WILL YOU DEVELOP THESE SKILLS THROUGH YOUR COURSE IN THE FIRST YEAR?

- **Self management** forms a large part of your academic study. Not only will it be up to you to meet deadlines, and accept responsibility for your learning, but the Personal Development Planning programme (PDP) is designed to assist you to develop as an independent and confident learner. It will also encourage you to develop a positive attitude to learning throughout your professional life.
- **Teamworking** is an essential part of any degree today and you will gain experience of this in the first year during the 'Characterisation of Molecules' module. Effective teamworking will also form a significant part of subsequent years of study.
- Chemistry is all about **problem solving** and so of course you will have many opportunities to develop this skill throughout your degree. In the first year and in subsequent years you will develop your problem solving strategies and learn a scientific approach to investigating practical problems that will stand you in good stead in any future employment.
- There are many opportunities throughout this scientific degree to develop your **communication and literacy skills**. In the first year you will study four modules that require you to present a report both in writing and verbally. This

will be excellent training for future years of study and it will also be excellent preparation for the world of work.

- Your first year will also give you ample opportunity to develop your skills in **numeracy and IT**. You will learn to apply basic mathematical procedures to relevant problems in chemistry and you will also gain experience in interpreting numerical data. Furthermore you will work with spreadsheet software, use graphical computer interfaces and receive training in effective literature searching techniques.

## HOW WILL YOU DEVELOP THESE SKILLS THROUGH YOUR COURSE IN THE SECOND YEAR?

- Slotted in amongst all the chemistry modules in this year, you will undertake a module called 'Key Skills for Chemists'. This module introduces you to the world of work and requires you to write a CV and gain an insight into interview skills; these, along with continued attention to Personal Development Planning with your tutor, will help you develop and evaluate your **self management** skills. This module will also give you further experience of **working in a team** when you prepare and present a group poster.
- Your **problem solving skills and communication and literacy skills** will continue to develop in line with your chemistry skills. Modules such as 'Stereochemistry and Reactivity' and 'Organic Mechanisms and Synthesis' will enable you to apply your knowledge to tackle problems and further improve your ability to interpret, assemble and communicate data.
- Modules such as 'Atomic and Molecular Spectroscopy' and 'Energy and Structure' will allow you to continue to develop your **numeracy and information technology skills**. You will be able to show skills in data interpretation and in using IT to present and analyse experimental results.

## HOW WILL YOU DEVELOP THESE SKILLS THROUGH YOUR COURSE IN THE THIRD YEAR?

- The **numeracy** and **information technology** skills you have learnt in the second year will be used to full effect in the third year to support the work of all third year modules.
- This final year of the BSc in chemistry concentrates on developing your **problem solving** and **communication and literacy skills** to a professional standard. Much emphasis is placed on the written project where you will apply a range of scientific principles to work on a complex chemical problem. Students present this in written format and orally. 'The Key Skills in Chemistry' module prepares for this project and gives you the opportunity to work with others, thus further developing your **teamwork** skills and giving you experience of scientific collaboration.
- This final year concentrates on the vital employability skill of **self management**. You will need to take full responsibility for your overall

performance, be resilient throughout your project and manage your time effectively.

### HOW WILL YOU DEVELOP THESE SKILLS THROUGH YOUR COURSE IN THE THIRD YEAR of MChem?

- The **numeracy** and **information technology** skills you have learnt in the second year will be used to full effect in the third year to support the work of all third year modules.
- In addition, the module 'Microscopic to Macroscopic Phenomena' will give you experience in the application of mathematics to practical problems in chemistry and so develop the key employability skill of **numeracy**.
- In this third year of the MChem degree the modules of 'Training and Application of Research Methods' will prepare you for your final year project and will develop your **information technology** and your **communication and literacy skills**.
- Your **problem solving skills** will be developed in all modules, but particularly in the 'Quantum Chemistry' module where you will be given the opportunity to use your learned chemistry knowledge to tackle problems of an unseen nature. The 'Chemical Biology III' module gives you the opportunity to work with others, thus further developing your **teamwork** skills and giving you experience of scientific collaboration.
- In addition to giving you much sought after work experience, the optional year in industry will allow you to experience the working practices and needs of an industry and will develop your **commercial awareness** skills – this set of skills is highly valued by employers.

### HOW WILL YOU DEVELOP THESE SKILLS THROUGH YOUR COURSE IN THE FOURTH YEAR of MChem?

The MChem programme provides a greater depth and understanding of knowledge than is possible in the BSc and there is greater emphasis in this final year on analysis, synthesis and **problem solving** skills. The Research Project can involve 400-600 hours work and requires excellent **self-management** skills. The written report and viva voce examination, in addition to the mid-project presentation will develop your **communication and literacy skills**, whilst the research itself will clearly develop your **problem solving, numeracy and information technology skills**. To balance this individual piece of research, other modules in this final year give you the opportunity to develop your **teamworking** skills by solving problems in groups, thus training you in scientific collaboration in a research area.

### CAREER MANAGEMENT SKILLS (CMS)

CMS sessions delivered in years 1 and 2 will show you how to make sense of the **employability skills** developed throughout your degree and help you articulate these skills effectively both on paper and at interview to an employer. This link

between academia and employment is essential, especially for those wanting to enter employment straight after their study. The Careers Service is available to help you further with this throughout all stages of your academic degree.

The Careers Service has a full programme of fairs, employer presentations and employer-led skills sessions that give undergraduates opportunities to meet employers and start developing their **commercial awareness** skills. Furthermore, this insight will allow you to better prepare for the job search and application process.

## **PLACEMENT YEAR**

All students have the opportunity to opt for a placement year between years 2 and 3 of their study. This is an excellent chance to develop your **business and commercial awareness skills**, a skill often cited as lacking in many of today's graduates. During your year in industry, you will significantly develop your scientific skills in the workplace, but you will also develop the general skills required in all graduate careers such as **team working, time management, problem solving, IT and communication**, both with colleagues and with clients.

Being selected for the placement in the first place is not easy and will require you to develop your application interview and presentation skills, but the rewards are worth it - placement students have a very good record generally in gaining employment following their degree, due partly to the excellent evidence of employability which they can present to an employer.