Choosing a Chemistry degree?

What qualification do I get?
- You can get either a Bachelor of Science or Master of Chemistry degree.

What are the differences between BSc and MChem courses and where do they lead?
- Like many other UK universities, Aberdeen has introduced the MChem degree as an “enhanced” first degree in Chemistry. Students follow the main BSc Honours curriculum, plus a further year of study to complete the MChem programme. The objective of the MChem is not to add on yet another year of formal classroom teaching, but rather it is intended to allow students to have time to absorb the problems, and to develop into mature professional scientists. There are opportunities for industrial placements, or for spending part of the year in one of our partner universities in Europe although this may change depending on the outcome of Brexit. For these, as with all placements, the host company or institution has the right to choose which and how many students it may wish to take, so specific placements cannot be guaranteed in advance.

It is possible to transfer between BSc and MChem, so your choice is not fixed on application.

Do I usually have much choice within a chemistry course?
- In levels 1 and 2 50% of your curriculum will be chemistry courses. The remaining 50% can be selected from a range of courses depending on timetabling availability. Popular options include biology, physics, maths, geology, languages or psychology. At level 4, students can choose from several topics within one of the lecture courses, and they also choose the subject of their research project.

Are the opportunities to travel abroad as part of my course?
- It is possible for students to arrange to spend a year abroad at another university, usually in the US or Canada. MChem students undertake a 3-month overseas placement for their final year research project usually in Europe.

Is the course relevant to my future career?
- We certainly make every effort to make it relevant, especially for students who intend to continue as chemists, but our emphasis on transferable skills means that it should be relevant to almost any career.

What qualifications do I need? What are the entry requirements? Are my sixth-year subjects the ones needed?
- Please check the most recent prospectus or online for up to date entry requirements, including contextual, advanced and alternative direct entry routes: https://www.abdn.ac.uk/study/

Will I struggle with the maths requirements?
- There are many good chemists with little or no mathematical background, but it is undeniably true that basic competence in mathematics makes life easier, particularly in physical chemistry. Lecturers teaching those parts of the course with a mathematical content aim to do so in a way which will be comprehensible to students who have less experience with mathematics. There is also some mathematical material applied to chemistry problems in our Elements of Chemistry first year modules. The Mathematics Department also offers a selection of courses available for students with different levels of experience on entry.

What is the percentage drop-out?
- It varies from year to year, but quite low (typically below 10% at first year).

How will I fit in? What is the calibre and background of other students on the course?
- The Ancient Scottish Universities traditionally attracted students of a wide range of ability mainly from their own catchment area. Whilst many students venture away from their “home” university, many prefer to stay within Scotland, especially with the current arrangement for payment of fees. The University also attracts students for the rest of the UK, and also a large number from European and other international students.

For more information, please see http://www.abdn.ac.uk/chemistry
a result, we get many students of a very high calibre, and with a range of backgrounds and educational experiences.

**Is the student body international?**
- Yes, and it is tending to become more so. In particular, in recent years, students from France, Denmark, Germany, South Africa, Greece, Ireland and the USA have completed Honours degrees in Chemistry and many other nationalities are represented in the University.

**WHAT IS IT LIKE STUDYING CHEMISTRY AT UNIVERSITY?**

**What type of activities will I do - lab work, lectures, tutorials, “other”?**
- In Chemistry you will have traditional lectures, exercise classes, lab classes, small group tutorials and computer-based tutorials.

**Is there any open-ended lab work?**
- In first year, most of the work consists of set experiments. In later years lab classes include more individual and group planning and management. You will finish your degree with an individual research project.

**How many students will be in a lecture, tutorial etc?**
- In first year, there can be up to 150 students in a Chemistry lecture as students from other degree programmes, for example Chemical Engineering, also take some Chemistry courses. Generally only Chemistry degree students take the first year Elements of Chemistry courses. In the lab, there may be up to 70 students in the lab, but you will work with a group of about 12 students.

**What will my total contact time per week be?**
- In first year, for Chemistry, on average 7.5 hours; you will have to take 2 other subjects, which should each have around the same amount of contact time, although some have less depending on how they are taught.

**How much of this is practical work?**
- For Chemistry you’ll have around 20 hours of lab time each term in first year. Other lab-based courses which you might select will have a similar amount of lab time. The amount of lab time in Chemistry increases each year.

**What is the number of sessions of each type (lectures, tutorials, lab work)? How long are they?**
- Lectures are 50 minutes long and there will be five per week in first year. Some of these will be exercise classes. Laboratory sessions and small group tutorials are in alternating weeks. You will also be expected to spend some untimetabled time working on coursework, doing self-study and continuous assessments.

**What is a typical student week like?**
- As a student you should expect to have classes throughout most days, with a break for lunch. On Wednesday afternoons, only a few optional classes are held, so that anyone who wishes to can participate in sport of other leisure activities.

**Will I have one or several lecturers? Are lecturers chosen for their teaching or research skills?**
- You will have several lecturers. For first and second year teaching, lecturers are chosen mainly for their teaching skills (though they may also be excellent researchers). In later years, you will also have the opportunity to be taught by chemists who have been chosen because they are at the forefront of research in their fields of interest.

**What is the student-lecturer ratio?**
- It varies depending on your and course, but normally around 15 to 1.
Is the style of teaching different to schools and colleges?
• Yes. You are expected to take more responsibility for your own learning. This will include independent study, such as doing additional reading both before and after timetables classes.

What is a “lecture”?
• In an old-fashioned lecture, a lecturer stands and talks to the class and the students write down notes. Nowadays, a lecture should be a little livelier: students are encouraged to ask questions; the lecturer may ask questions via an interactive poll, or may show visual aids. PowerPoint slides are normally made available in advance and lectures are also recorded and made available for revision. However, the lecture material should not be regarded as the whole course - it may instead be a guide to the material to be studied in the textbook or elsewhere.

What is a “tutorial”?
• In a tutorial you will be given exercises to work on which the tutor discusses with you in the tutorial. Alternatively, you may be given exercises to do at home in advance; in this case, the tutor may come around, or may discuss the questions with the whole group. The number of students in a tutorial can vary from about 3-15, depending on the particular course and year of study.

Can I get help if I find the work difficult?
• Yes - all lecturers have an “open door” policy, and you can also get help from the demonstrators in the laboratory (who are postgraduate chemistry students). Many students e-mail to ask questions or make appointments to see lecturers. We also encourage peer support. Explaining things to each other can help both of you.

What mentoring or support systems are there?
• You will have a Personal Tutor and the University has many other support services all available via the Student Support Service. You will also have a chance to elect some class representatives, who will meet regularly with the Chemistry staff to discuss any problems.

Will I get help with essay writing, study skills, maths?
• These skills will be included in several courses. The University also has a Student Learning Service, which offers additional study and skills support.

In the laboratory, will I work as an individual or in pairs or as part of a bigger group?
• In the first year you will mainly work as an individual, but sometimes in pairs. Later in the course, you will be expected to learn to work effectively in groups.

What kind of experiments will I do in the first year?
• There is quite a range of experiments, but all are designed to be within the capability even of students who have followed previous courses with no laboratory work.

What expenses will I have? Books, lab coat, safety glasses, practical work deposit, other costs?
• You will need to provide a lab coat (approximately £20) and you should expect to spend at least £100 per year on books, though you can use copies in the library or purchase second hand copies.

How much will it cost me in accommodation and tuition? When will I have to pay? Will I get financial support? What are access funds? Who qualifies?
• Answers to these questions are found on the University’s undergraduate study finance webpages.
CAREER CHOICES

Is Chemistry relevant or acceptable as training for my future career?

- It’s fairly obvious that chemistry is relevant if you want to be a chemist, but chemistry graduates find employment in many other fields because employers think that possession of a chemistry degree is an indication that the graduate must have a useful number of employability skills and attributes. Chemistry is not an “easy option” and a good degree in chemistry is an assurance to employers that the graduate not only has intellectual ability but also is capable of dedication and hard work.

What do students typically do after their chemistry degree course?

- Most of our graduates do take up a career where their study of chemistry can be directly or indirectly applied, for example in the chemical industry, or in metallurgical or food industries (e.g. Unilever), in offshore oil work, or in environmental protection work. There are also many opportunities in education, in schools and colleges, etc. However, other graduates have gone on to careers in marketing, accountancy, publishing, the armed forces etc. A number of graduates go on to further study, either in an MSc or PhD.

When do I have to start making employment decisions? What help will I get? Who will it be from?

- The University has a Careers Service to help with this. A Careers Advisor will speak to classes on several occasions, starting in the second year of study. When you actually make decisions, though, is very much a personal choice. We have dedicated professional skills course in level 3 to help you prepare for your career after graduation.

What are the postgraduate study requirements?

- For PhD, you need a first or upper class second degree at either BSc or MChem. An MSc may be available to any class of honours.

For further career and study options advice, the Royal Society of Chemistry, which accredits our degrees, has lots more information for anyone interested in Chemistry.

- [http://www.rsc.org/careers/future/](http://www.rsc.org/careers/future/)
Degree structure
A table summarising the degree structure is at the end of this document

First Year (Level 1)
All students must take 8 courses, 4 of which must be chemistry:

**Chemistry for the Physical Sciences 1 & 2.** The first course establishes the basic principles of atomic and molecular structure, chemical bonding and reactivity, and the second course looks at aspects of chemistry that are of particular relevance in the world outside the chemical laboratory. Each course consists of 3 lectures per week and three hours of practical work per fortnight. Students following these courses normally have Higher, Advanced Higher, A-level or equivalent qualifications in Chemistry.

**Elements of Chemistry 1 & 2.** These courses aim to inspire students to investigate the scope and power of chemistry, to encourage students to integrate their knowledge in chemistry and apply basic knowledge to more complex but widely applicable topics in chemistry and to develop the necessary study, communication and practical skills for success in undergraduate Chemistry and beyond.

These courses are supported by extensive course materials provided within MyAberdeen, the Virtual Learning Environment supported by the University.

For some of our degree programmes, some or all of the other 4 first year courses will be specified, but for others, you have a completely free choice of science, or even arts, courses to complete your first year curriculum, subject only to the constraints of the timetable. This allows you to try something new, to continue an interest in, say, art or music, or even start learning a foreign language.

Second Year (Level 2)
**Chemical Kinetics and Thermodynamics** and **Analytical Chemistry and Spectroscopy** in the first half of the year, and **Organic and Biological Chemistry** and **Inorganic Chemistry** in the second half.

Each course involves two lectures per week and one tutorial every second week throughout the term, plus six hours of practical work for six weeks. Again, other courses are specified for some programmes, but for others students have a free choice.

We also offer an additional optional course, **Introduction to Materials**.

Third Year (Level 3)
In third year, students spend most of their time on chemistry, although for some programmes, up to 25% of the time is spent in another department. The courses have been carefully planned so that these students miss only the areas of chemistry that are least important for their chosen specialist programme. The principal courses are: **Inorganic and Solid State Chemistry**, **Molecular Structure and Reactivity**, **Environmental Chemistry**, **Organic and Biological Chemistry**, and **General Chemistry**.

A further course, **Professional Skills for Physics and Chemistry**, will help you prepare for honours research projects by focussing on techniques such as data analysis and literature skills. It also includes a section and careers planning and employability skills.

For more information, please see [http://www.abdn.ac.uk/chemistry](http://www.abdn.ac.uk/chemistry)
Fourth Year (Level 4)
The Honours BSc and MChem students take a range of courses chosen from topics which are part of the essential education of any chemist, and also complete group-based problem-solving exercises. The Honours BSc students undertake an extended research project which runs until the end of the second half session. The project dissertation makes a substantial contribution to the final degree assessment. The MChem students undertake a number of group-based practicals together with problem solving classes, and a small research mini-project.

Fifth Year (Level 5)
In the first half-session of the final year of the MChem programmes, students attend lecture courses and gain hands-on experience of a variety of advanced research techniques. In the second half-session, students undertake an extended research project which may involve placement either in UK industry or at a research institution overseas. In particular, we have links for such placements with several Universities in Europe, through the Erasmus programme of the EU, although this may change depending on the outcome of Brexit.

Research
Undergraduate teaching thrives best in a Department with a lively commitment to research. We currently have approximately 40 postgraduate research students (MSc, MPhil and PhD) and a number of research assistants and postdoctoral fellows, plus a steady stream of visiting workers from Universities all over the world. The Department has long-established strengths in Materials Chemistry, Environmental Chemistry, and Medicinal Chemistry, and many of our staff are recognised as leaders in these fields. Rapidly developing areas include drug discovery and catalysis. The Department has the wide range of sophisticated instrumentation essential for successful research. Undergraduate students gain direct experience with this equipment.

For more information, please see http://www.abdn.ac.uk/chemistry
Chemistry degree structure showing compulsory Chemistry and Enhanced Study options. BSc and MChem students have different projects in 4th year.

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<th>Level</th>
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<th>Term 2</th>
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<td><strong>Chemistry for the Physical Sciences 1</strong></td>
<td><strong>Chemistry for the Physical Sciences 2</strong></td>
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<td><strong>Elements of Chemistry 1</strong></td>
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<td>2</td>
<td><strong>Analytical Chemistry</strong></td>
<td><strong>Physical Chemistry</strong></td>
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<td><strong>Physical Chemistry</strong></td>
<td><strong>Introduction to Materials Or Enhanced Study</strong></td>
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<td><strong>MChem Group mini-project</strong></td>
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<td><strong>MChem Project</strong></td>
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<td><strong>Enhanced Study</strong></td>
<td><strong>Advanced Chemistry Options</strong></td>
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<td><strong>Integrated Chemistry</strong></td>
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<td>5</td>
<td><strong>MChem Topics &amp; Workshops</strong></td>
<td><strong>Major Research Project</strong></td>
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Blue – Chemistry course, green – choice of other course