Chemistry is an exciting central science in which you will receive a thorough and fundamental training. You will be able to specialise in areas including medicinal chemistry, nanotechnology, materials, catalysis, molecular biology and surface science.

- Friendly and close-knit School, consistently ranked in the top ten Chemistry departments in the UK.
- Flexible degree structure with an opportunity to specialise in Materials Chemistry, Medicinal Chemistry or Biomolecular Science.
- Opportunity to gain research experience in both industrial and academic environments through an external placement and research project.
- Practical training in award-winning, state-of-the-art teaching laboratories.

What will I study?
Chemistry at St Andrews offers you a unique experience blending education in state-of-the-art science facilities while enjoying the traditions of an ancient university. As an undergraduate Chemistry student you will have frequent contact with some world-class academics and we pride ourselves on the personal and flexible nature of our programmes.

First year
You will be introduced to key concepts in inorganic, organic and physical chemistry, developing core knowledge and important skills. Teaching includes lectures, tutorials, workshops and laboratory-based practical classes. The diversity of topics in the three branches include:
- Inorganic Chemistry: atoms and the periodic table, structure and bonding of molecules, inorganic solids, chemistry of the first row transition metals.
- Physical Chemistry: thermodynamics, spectroscopy and diffraction, mathematical tools for chemists.

Second year
You will continue to develop a deeper understanding of the branches of chemistry to enable specialisation in the following years.
- Inorganic Chemistry: organometallics and transition-metal chemistry, atmospheric chemistry, solid-state chemistry, main-group chemistry.
- Physical Chemistry: quantum mechanics, thermodynamics, electrochemistry, kinetics, spectroscopy and diffraction, mathematical tools for chemists.

Third and fourth years
A combination of core and optional topics are taught and enable specialisation in a particular area.
- Topics may include quantum mechanics, energy conversion and storage, carbohydrates and nucleic acids, ligand design, functional materials, fragrance, food and colour chemistry, heterocyclic and pericyclic chemistry.

Entry requirements
We consider all aspects of every application, including context, equivalent qualifications and the Personal Statement. Offers may be higher or lower than the grades stated here. See also page 169. 

Available degree options

- MChem: Chemistry, Chemical Sciences, Materials Chemistry, Biomolecular Science (with School of Biology)
- MSci: Chemistry and Geology, Chemistry and Mathematics, Chemistry and Physics (MSci)
- BSc: Chemistry, Chemistry with Medicinal Chemistry, Chemistry with Medicinal Chemistry with External Placement, Materials Chemistry, Chemistry with Medicinal Chemistry with External Placement

Previous knowledge of subject required? Yes, Chemistry

- MChem: including A in Chemistry
- MSci: including A in Chemistry or Physics
- BSc: AAB, including A in Chemistry and AB in Biology (or Human Biology), plus two other Highers.

Direct entry into second year is available, requiring:
- SQA Advanced Highers: AA, including A in Chemistry and AB in two other Highers.
- GCE A-Levels: A, including A in Chemistry.

International Baccalaureate Points: 37, including HL6 in Chemistry.

Additional information:
For BSc and MChem degrees – in addition to Chemistry, a Higher in Biology (or Human Biology), Computing Science or equivalent, Geography, Mathematics, Physics, or Psychology. Preference may be given to candidates offering strong science qualifications.

Additional entry requirements may be specified for Joint Honours and Biomolecular Science degrees.
Chemistry

www.st-andrews.ac.uk/subjects/chemistry
chemug@st-andrews.ac.uk

MChem Integrated Masters (five years) with/ without external placement
Advanced research-led specialisation delivers topics which may include homogeneous and heterogeneous catalysis, blockbuster solids, asymmetric synthesis, natural product biosynthesis, molecular recognition, nanostructured materials. In fourth year there is an opportunity to join a research and development group within a leading industrial research laboratory or overseas academic institution. Alternatively, you may remain in St Andrews and undertake an advanced research skills laboratory, scientific writing course and a variety of lecture topics. In fifth year you take a year-long project in a research lab.

Our degree programmes:
Chemistry
Chemistry at St Andrews interfaces with biology, physics, mathematics, medicine and geology, making it a highly applicable subject to many areas of study. You will develop a broad base of chemical knowledge and understanding reinforced by extensive practical experience and familiarity with modern laboratory, instrumental and computational techniques. The MChem allows you to study at great depth with emphasis on research, graduating with a Masters degree. The course gives you the best possible training for a career in the professional chemical sector or to carry out postgraduate study upon graduation.

Chemistry with Medicinal Chemistry
You start with a broad training in core chemistry, followed by specialisation in biological and medicinal topics. You will gain an understanding of the process of creating new drugs. Areas include understanding and measuring the interactions between drug molecules and biomolecules, applying this understanding to the design of new molecules that achieve desired effects, planning efficient syntheses of complex molecules on laboratory and industrial scales.

Materials Chemistry
St Andrews has one of the largest groupings of materials chemists in the UK. You begin with a broad training in core chemistry, followed by specialisation in materials. The course will develop your chemical understanding of the origins of the diverse array of properties of materials, their synthesis and their characterisation.

Biomolecular Science
This degree is aimed at students who want to study at the interface between chemistry and biology. Biomolecular Science is shaping the medicine of the twenty-first century. The degree is jointly run by the Schools of Chemistry and Biology and is taught by leading UK scientists. St Andrews is a pioneer in working at the interface between chemistry and biology and has a world-class research record in this area.

Chemical Sciences
This will teach you the fundamentals of chemistry and allow you to include a small component of a non-chemistry subject at Honours level, such as communication and teaching in science.

Careers
St Andrews Chemistry graduates are in demand by both major and grassroots companies, with an employability rate of at least 95%. Chemistry degrees provide a range of highly desirable skills including problem solving, numeracy, data handling and teamwork, attributes that are highly prized by employers.

Recent graduate destinations include: a research scientist at a company involved in enhanced oil recovery, trainee patent lawyers, pharmaceutical development scientists, management consultancy, a liaison officer for the Royal Society of Chemistry.

Many MChem graduates continue on to PhD-level degrees both in the UK and overseas.

Accreditation
Our Single Honours Chemistry degree programmes are accredited by the Royal Society of Chemistry.

Scholarships
Purdie and Benjamin Franklin Scholarships are available to Chemistry applicants.

“The Chemistry family is close knit, and it is easy to familiarise oneself with lecturers and tutors who are always eager to help. The Integrated Masters programme offers the potential for doing a one-year work placement in a company and country of your choosing. I went into an interdisciplinary academic lab at the Karolinska Institute, Stockholm. Not only did my science improve, I made lifelong friendships and discoveries that will stay with me forever.”

Sandra (Brabant-Wallon, Belgium)