Science for Arts Majors

University of St Andrews

Scotland's first university – 1413

Science for Arts Majors

We know many visiting Arts students are eager to expand their academic horizons and study science at St Andrews. This theme brings together science modules that are suitable for students with diverse academic backgrounds. Some suggested module choices:

The modules listed may be subject to change (see Curriculum Development below).

Biology – *Biology 1:* This module is an introduction to molecular and cellular biology. It covers cell diversity and the origins of life, cellular structures and fundamental processes. The central dogma of molecular biology is investigated through the examination of the structure and function of DNA, RNA and proteins, and how this knowledge led to modern developments in biotechnology. The final section of the module gives an introduction into molecular and population genetics with an emphasis on the process of evolution. Throughout the module the lecture material is complemented by extensive practical classes where biological laboratory techniques are taught and practiced through, for example, microscopy, DNA isolation, dissection and thin layer chromatography.

Chemistry – *A First Course in Organic Chemistry:* This module is an introductory course in Organic Chemistry. It covers aspects of structure, bonding and stereochemistry in Organic Chemistry. The syllabus includes the chemistry of alkanes, simple cycloalkanes, alkenes and alkynes together with functional group chemistry, largely that of singly-bonded functional groups. The chemistry is discussed and rationalised with reference to reaction mechanisms. The lecture course is complemented by a laboratory course.

Computer Science – *Computer Science in Everyday Life:* This module introduces key ideas of Computer Science through examination of the working of devices and services which are part of modern everyday life, such as search engines, personal music players, mobile telephones and social networking sites. Students are led to develop an understanding of some fundamentals of Computer Science, as well as gaining transferable skills in critical reading, research in the technical literature and essay writing.

Earth Sciences – *Planet Earth:* This module provides a foundation into the study of Earth and environmental sciences. The key elements of the planet will be introduced. The bulk structure of the solid Earth (and the other planets of our solar system), and the dynamic hydrosphere and atmosphere will be covered from planetary to atomistic scales. Practical and transferable skills will be developed in tutorials and laboratory exercises which include the identification of minerals and rocks both in hand specimen and using microscopes. Fieldwork will be introduced as two half-day excursions. University-level study skills associated with this module include working in groups, oral and written presentations, advanced use of the University's internet and library facilities for data acquisition, and critically assessing scientific data and reports.

Mathematics & Statistics – *Introductory Mathematics:* This module is designed to give students a secure base in elementary calculus to allow them to tackle the mathematics needed in other sciences. Students wishing to do more mathematics will be given a good foundation from which they can proceed to MT1002.

Sustainable Development – *Frameworks for Implementation:* This module considers broad conceptual approaches to implementing SD. It includes more traditional frameworks based on governance and regulation ('command and control') as well as examining the role and importance of other approaches, including environmental economics and the use of market-based mechanisms, technological innovation, self-regulation, changing individual lifestyles, education and community-based enablement, and the principles of conservation science. This module also addresses the extent to which these different approaches are independent or can be used together to bring about change for SD.

For further details, please contact: Exchanges & Study Abroad, University of St Andrews
E: studyabroad@st-andrews.ac.uk **or visit our website**:

www.st-andrews.ac.uk/studyabroad/incomingstudents

Curriculum Development
As a research intensive institution, the University ensures that its teaching references the research interests of its staff, which may change from time to time. As a result, programmes are regularly reviewed with the aim of enhancing students' learning experience. Our approach to course revision is described at: www.st-andrews.ac.uk/media/teaching-and-learning/policies/course-revision-protocol.pdf

For the latest information on modules see: www.st-andrews.ac.uk/coursecatalogue/ug

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