

Curious about...



Some reasons for studying Analytical Chemistry at CSU:

- the course is accredited by the Royal Australian Chemistry Institute (RACI)
- integrated industry work placement provides first-hand experience
- students gain experience using state-of-the-art laboratories and instrumentation
- flexible study options are available, including on campus or online study, with small specialised class sizes and great access to academic staff.



Bachelor of Science – Analytical Chemistry major

What is CSU's Bachelor of Science - Analytical Chemistry major?

Students in the Bachelor of Science at Charles Sturt University (CSU) can elect to major in Analytical Chemistry. The Analytical Chemistry major specialises in instrumental investigation and analysis, with an emphasis on understanding how complex analytical equipment functions and can be applied to a variety of scenarios. CSU graduates gain significant hands-on experience ensuring they have the necessary skills to work in a broad range of laboratories. Graduates also develop solid generic skills allowing them to adapt to other fields of chemistry or areas of science.

CSU's Bachelor of Science with an Analytical Chemistry major offers the flexibility of online study, with residential schools twice a year, or studying on the Wagga Wagga Campus. The Analytical Chemistry major can be combined with a wide range of minors including Biology, Immunology, Information Technology, Mathematics, Microbiology, Physics, Spatial Science and Statistics, allowing students to adapt the degree to their interests.

Graduates of the Analytical Chemistry major are eligible for membership of the Royal Australian Chemical Institute (RACI), which is the professional body for chemists in Australia.

Why study Analytical Chemistry?

Analytical Chemistry makes essential contributions to many areas of the workforce, including environmental management, mining, pharmaceutical development, food processing, creation of new materials, forensic science and many others. As an analytical chemist, you will apply a broad range of skills and techniques to real-world problems facing our society. You will make use of existing techniques and may also work on the application of cutting-edge instruments to various problems, developing new methods of analysis or contributing to the design of new instrumentation.

What will I learn?

Students undertaking this degree will specialise in Analytical Chemistry and also develop a broad knowledge of science, scientific communication, statistics and experimental design.

Year one provides the fundamentals in general chemistry along with other fundamental science subjects, followed by more advanced study of organic, inorganic and physical chemistry in second year, while keeping a focus on analytical techniques.

In third year, students will specialise in analytical techniques and instrumentation, involving method development via inquiry-based learning practicals. In addition, students will obtain experience from the industry by undertaking a five-week work placement in an analytical laboratory to gain insights and exposure to the day-to-day requirements of the profession. This experience provides a considerable advantage over a traditional degree structure when applying for jobs after graduation.

If you are interested in a career in research, you may be able to continue to Honours and postgraduate studies, both available at CSU. You will gain the skills required to conduct research on a topic of your choice among our fields of research, including environmental chemistry of soils and water (e.g. fate of pollutants, carbon and nutrient cycles), agricultural and food chemistry, and development and optimisation of analytical methods.



“Originally I began another degree, but I found I preferred the Chemistry subjects. After switching to the Bachelor of

Science with an Analytical Chemistry major, I have not looked back. It has forced me to challenge myself, but in doing so it has been very rewarding.

“Practical components of this course allowed me to see how diverse analytical chemistry really is. There was a five-week industrial placement for my course, which I completed at Graincorp technical services in Temora. I became aware of how the skills I had developed at CSU could be applied to a working environment. It was a vital part of the course as it helped to link what we had learnt and prepare us for the future.

“From this degree I have moved into Honours and a PhD, focusing on chemistry-based agricultural research. I now get paid to study at university and there is increased interest from the industry in my research. I have had the opportunity to travel to present my research around Australia and overseas. I am still unsure which direction my career will proceed following my PhD, but with the completion of such a diverse degree, I know there are many job opportunities waiting for me.”

Clare Flakelar,
Bachelor of Science graduate

Career opportunities

Analytical Chemistry graduates find employment in a wide range of industries, consulting companies, government departments and authorities, and research laboratories as well as more diverse careers in areas where critical thinking and data analysis are valued, such as banking and finance, sales or teaching. Graduates may work in research, development and design of new products and processes, sample testing and analysis, quality control and laboratory management.

The Bachelor of Science with an Analytical Chemistry major may also be the starting point for a research or academic career, allowing you to continue on to Honours or postgraduate study, such as a Doctor of Philosophy (PhD), also available at CSU.

Facilities

CSU's Wagga Wagga Campus is set on more than 640 hectares with new and very well equipped science laboratories. Analytical Chemistry students will be working in the National Life Sciences Hub (a teaching and research facility completed in 2012) with cutting edge instrumentation for gas and liquid chromatography; mass spectrometry; ultraviolet, visible, infrared and fluorescence spectroscopy; atomic absorbance and inductively coupled plasma spectroscopy, in addition to traditional laboratory techniques.

Studying online

CSU provides an excellent range of support tools for online students with course materials designed to engage and promote active thinking and participation.

Materials include study schedules, study modules containing activities designed to encourage participation, assignments designed to test the mastery and application of course materials, resource materials containing interesting applications of the key principles, and computer based education packages. Online forums also form part of the coursework enabling direct and rapid contact with staff and other students.

Lecturers are committed to ensuring they are readily available to assist students through the subject forum, email and telephone in addition to face-to-face contact at residential schools.

About CSU

CSU is a national university focusing on excellence in education for the professions, strategic and applied research, and flexible delivery of learning and teaching. We work in close association with industry, professions and government to ensure our courses meet and support industry needs, resulting in high graduate employment levels and starting salaries. We attract more than 38,000 students from Australia and around the world and are well-known for our innovative approach to education, offering practical, hands-on courses, supported online to provide our students with accessible, world class education.

Further information

For more information or to apply, visit:

www.csu.edu.au/courses/bachelor-of-science

For more information about courses and how to apply, please contact info.csu:

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