

# Pharmaceutical Science



## Better medicines for better health

Pharmaceutical science underpins many medical advances that have helped save lives and improve quality of life for countless millions of people over the last century. With worldwide sales worth hundreds of billions of dollars each year and rising, the pharmaceutical industry offers a wealth of opportunities to graduates with the right qualifications. UniSA's Bachelor of Pharmaceutical Science encompasses all aspects of the industry, from drug discovery and development through to commercialisation, marketing and product management.

### Careers

Pharmaceutical scientists are in high demand around the world, a trend that looks set to continue as the industry grows. Graduates are employed by hospitals, pharmaceutical companies, research organisations, government and regulatory agencies.

A variety of opportunities exist both locally and globally, with more than 80 biotechnology companies based in Adelaide, over 300 major pharmaceutical firms Australia-wide, and thousands of employers overseas. In particular, there continues to be strong demand for graduates with pharmaceutical science training in the established industry strongholds of Europe and North America. In addition, the rapidly expanding pharmaceutical sector in India, China, and South East Asia is providing many new opportunities within the region.

### Starting salary range

Recent graduates can expect to earn \$40,000 to \$50,000 a year. This degree is designed to facilitate rapid promotion which should see graduates earning more than \$100,000 a year once they enter senior roles.

### Pharmaceutical Science at UniSA

UniSA has a strong track record in teaching pharmaceutical science to pharmacy students, and this expertise is now being applied to the pharmaceutical industry setting with the Bachelor of Pharmaceutical Science.

Our experienced lecturers, state-of-the-art laboratories, and well-established industry links combine to equip students with the skills and knowledge needed to succeed.

The three-year program is unique in its breadth and flexibility. While the core subjects provide a solid foundation in scientific theory and pharmaceutical practice, the program structure and wide choice of electives allow students to either specialise or gain insight into several areas.

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*"The breadth of knowledge and skills provided by the Bachelor of Pharmaceutical Science ensures that UniSA graduates will be highly sought after by local and international employers in the pharmaceutical industry."*

# Bachelor of Pharmaceutical Science

## Manufacturing

Medicines must be manufactured to the highest possible standards to ensure public health and safety. Pharmaceutical scientists are trained to formulate medicines adhering to current codes of Good Manufacturing Practice, allowing them to oversee the entire manufacturing process. A vital part of this process is quality control, where pharmaceutical scientists assess the quality of both the raw ingredients and the final product before a medicine goes out to market.

## Clinical trials

Clinical trials are used to assess the safety and effectiveness of new drugs and medicines. Pharmaceutical scientists are trained to design and oversee trials, and to analyse, interpret and report the results.

## Managerial

Pharmaceutical scientists have a wide range of career options away from the laboratory environment. Their knowledge of the scientific, regulatory and commercial aspects of the pharmaceutical industry makes them ideal for many head office roles. UniSA's pharmaceutical science degree is designed to enable graduates to interact with people from all areas of industry and move between different departments as their career develops.

## Sales and marketing

The success of any new pharmaceutical product depends not only on its effectiveness but also on the manufacturer's ability to communicate its benefits. Pharmaceutical scientists are employed in the marketing departments of pharmaceutical companies to design new marketing strategies and promotional materials. They also work as part of the sales team, getting out and about to meet GPs, consultants and pharmacists.

## Pharmacy

Pharmaceutical scientists who choose to do extra study to register as a pharmacist will be able to work in a community pharmacy or a hospital where they can interact directly with patients, advising them on the best use of their medicines.

## Research and development

New medicines take many years to reach the market following their initial discovery. Pharmaceutical scientists are involved at each step of the R&D process, from the initial discovery of the new drug, to its physical and chemical characterisation, pre-clinical testing, formulation, and safety assessment. Many pharmaceutical scientists also work in specialised research, looking at a specific disease and developing new treatment options.



*"Over the past 10 years, research and development spending for the world's top 20 pharmaceutical manufacturers has more than doubled. This rapid expansion has generated a need for graduates with a broad and formal education in the pharmaceutical sciences.*

*The breadth of knowledge and skills provided by the Bachelor of Pharmaceutical Science ensures that UniSA graduates will be highly sought after by local and international employers in the pharmaceutical industry."*

**Dr Angelo Morella**  
Bsc (Hons), PhD  
Innovation Manager  
Mayne Pharma Limited



*"The Bachelor of Pharmaceutical Science is an exciting new degree that will give graduates the greatest possible range of career choices. We have consulted potential employers across Australia and South East Asia to identify current and future industry needs, and the program has been designed to equip students with the skills to meet these needs. Our program development team of experienced educators and industry representatives has put together a flexible program that gives students entry-level training for various career roles, the option to specialise in one or more areas, as well as pathways to further study and specialisations."*

**Dr Andrew Davey**  
**B Pharm (Hons), PhD**  
**PG Cert (Tert T)**  
Program Director  
Pharmaceutical Science  
University of South Australia

## Graduate skills

By the time you graduate you will know how to develop and manufacture a wide range of pharmaceutical products such as injections, tablets, creams and ointments. Graduates will have strong communication and research skills, and a good understanding of current laboratory techniques, experimental design, data interpretation and literature retrieval.

Depending on specialisations chosen and personal interests and talents, graduates will have the skills to work in a variety of areas within the pharmaceutical industry, including drug discovery and development; formulation and evaluation; manufacturing and quality control; clinical trials; sales and marketing; commercialisation and drug regulation. The degree has been designed to enable graduates to move between these different roles, hence ensuring an interesting and varied career.

## Industry experience

Throughout the degree students will attend specialist lectures by industry leaders on topics relevant to the pharmaceutical industry. Each student will also take part in an industry placement or project in the final year.

## Professional recognition

Through their elective choices, Bachelor of Pharmaceutical Science students specialise in one or more areas (choices include chemistry, biological sciences, drug development, and sales and marketing). Recognition by professional bodies will be aligned to the specialisation/s chosen. For example, students who choose mostly chemistry-based electives are eligible to apply for membership of the Royal Australian Chemical Institute (RACI).

## Research opportunities

With its strong emphasis on research skills, the Bachelor of Pharmaceutical Science enables high-achieving students to continue on to the Honours program. An Honours degree involves completing a research project, which can lead onto postgraduate research degree opportunities at UniSA's Sansom Institute and at universities and research organisations around the world.

## Other study pathways

The Bachelor of Pharmaceutical Science can provide a pathway for high-achieving students and graduates to continue on to programs leading to registration as a pharmacist, such as UniSA's Master of Pharmacy (Graduate Entry). Graduates will also be well prepared for other graduate entry programs such as physiotherapy, medicine and dietetics.

## Entry requirements

For information on entry requirements, see:

- UniSA's Medical and Health Sciences booklet
- The School of Pharmacy and Medical Sciences website at [www.unisa.edu.au/pmbs](http://www.unisa.edu.au/pmbs)

## How do I apply?

Australian citizens and permanent residents apply through the South Australian Tertiary Admissions Centre (SATAC). For more information see [www.satac.edu.au](http://www.satac.edu.au)

International students apply through the University's International Office. For more information see [www.unisa.edu.au/prospective](http://www.unisa.edu.au/prospective)

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