Faculty of Science

Discover.
Explore.
Challenge.

Your catalyst to a rewarding career
Discover the variety, flexibility and stimulation you seek by studying science at UWA.

Over 20 undergraduate majors and a wide range of postgraduate opportunities are available through the Faculty of Science.

The Faculty of Medicine, Dentistry and Health Sciences (www.meddent.uwa.edu.au) and the Faculty of Engineering, Computing and Mathematics (www.ecm.uwa.edu.au) also offer a range of science majors.

A Science degree from UWA gives you the skills and knowledge to succeed in a wide range of careers.

UWA's Faculty of Science is ranked 1st in Australia for Life and Agricultural Sciences and UWA is ranked in the top 100 universities in the world by the prestigious Academic Ranking of World Universities 2015.
At UWA, we challenge our students to show us how the world could be.

Be it in our outstanding laboratories, on field trips or in real-world industry placements, UWA gives you the chance to become immersed in the hands-on side of science.

As a UWA student your studies will involve not only the theory, but the crucial technical skills of your chosen discipline.


Travel the world!

You can study part of your degree overseas through our reciprocal Student Exchange agreements in America, Canada, Asia and Europe.

From undiscovered galaxies to the ‘invisible’ activities of microscopic organisms, no other field covers such a vast and colourful spectrum of innovation, potential and opportunity.
Dean’s Welcome

The Faculty of Science at UWA is at the forefront of teaching and research in Australia and across the world, with UWA ranked among the top 100 universities worldwide.¹

Our success in graduate employment reflects the quality of our close working partnerships with employers. The QS Graduate Employability Rankings show what we have always known - that our alumni do great things and achieve a great deal when they leave UWA. A degree from UWA really does make a difference.

A science degree from UWA will provide you with both the technical and theoretical knowledge needed for your career as well as the professional skills that will help set you apart from others. Here, we will challenge you to develop your critical thinking and communication skills, translating your curiosity for why things work into results that can impact the world.

As part of our ongoing program to develop our students and prepare them for their future careers, you will have the opportunity to participate in a Work Integrated Learning unit (i.e. credit for a work placement) designed to equip our students with the skills needed to compete in an increasingly competitive employment market.

The Faculty of Science has more than 5000 students and over 800 staff members, many of whom are winners of numerous national and international prestigious awards. The WA Scientist of the Year Awards have been dominated by UWA scientists for the past decade.

I encourage you to explore what opportunities the Faculty of Science can offer you by browsing our website or by visiting our beautiful campus. You will be most welcome.

Professor Tony O’Donnell
Dean, UWA Faculty of Science

¹ Academic Ranking of World Universities 2015
Why study science at UWA?

An international reputation

Diverse, progressive and ranked in the top tier of national and international universities, UWA operates on a global level.

Having a UWA degree ensures you are recognised for your skills and talent – no matter where in the world you choose to pursue your dreams!

UWA is known for its creative and innovative approach to learning, its award-winning staff and outstanding research expertise.

- Ranked well-above world average in the areas of Earth Sciences, Biological Sciences, Psychology and Cognitive Sciences, Physical Sciences, Environmental Sciences, and Agricultural Science by the 2015 Excellence in Research for Australia (ERA) initiative.
- The WA Scientist of the Year Awards have been dominated by UWA staff members for the past decade.

Improve your employment prospects

National surveys confirm that UWA graduates obtain jobs more readily and start on higher salaries than graduates from all other WA universities.

Industry connection

We understand employers need work-ready graduates. As a result, most of our courses have practical components to support theoretical knowledge. We continually build extensive and enduring links with the business community, enabling us to develop our research, lifelong learning experiences and partnerships.

State-of-the-art facilities

UWA is home to a range of exceptional facilities sure to enhance your educational experience. The $30m Barry J Marshall Science Library incorporates the latest technology, specialist multimedia suites and an Access Grid classroom that allows classes to be shared in remote areas and overseas, over high-speed networks.

Other facilities include the state-of-the-art Bayliss Building; the 67-hectare Shenton Park Field Station; the Plant Growth Facilities; CELLCentral; the Centre for Microscopy, Characterisation and Analysis with its excellent range of high resolution analytical equipment (the highest concentration of ion probe instruments anywhere in the world); the Physics workshop with its impressive array of high-precision machinery; and the Edward de Courcy Clarke Earth Science Museum.

The Faculty of Science also manages the University’s Future Farm, where new and highly innovative approaches to sustainable agriculture and the environment take place.

UWA students achieve outside the classroom too.

UWA is committed to encouraging and celebrating excellence in many fields, so if you would like to pursue both your academic and sporting passions visit www.student.uwa.edu.au/course/athletes to find out how we can support you.

Keeping you connected

UWA’s free WIFI network, available to all students, keeps you constantly connected to your university and the rest of the world.

“Everything is theoretically impossible, until it is done.”

Robert A Heinlein
Learn from the best

At UWA you’ll be inspired by great teachers and researchers. You’ll learn directly from some of the world’s top professors – teachers with a track record of discovery, collaboration, and innovation. Your inquisitive mind will be equally nurtured and challenged, both in the classroom and out in the field.

Quality teaching is a hallmark of a UWA education, with staff ranking first in WA and equal second across Australia in respect to the number of Australian Learning and Teaching Council (ALTC) citations they have been awarded. These citations recognise the degree to which staff enhance the quality of student learning.

A well-rounded student experience

You will have the opportunity to form lifelong friendships on a campus renowned for its vibrant social, cultural and sporting life. Home to arguably the most active social life of any WA university, there are over 100 different cultural, social, sporting, community and faculty clubs and societies you will have the option of joining. Discover why Science at UWA is more than just a degree.

Work Integrated Learning

As part of our ongoing program to develop our students and prepare them for their future careers, you will have the opportunity to participate in a Work Integrated Learning unit (i.e. earn credit for a work placement) designed to equip our students with the skills needed to compete in an increasingly competitive employment market.

You will also have the opportunity to attend networking events and gain valuable insight into career direction.

Travel the world

The flexibility of UWA’s courses provides you with the opportunity to study overseas while still gaining credit towards your degree. UWA has over 170 student exchange agreements across 27 countries.

Achieve academic success

The Peer Assisted Learning (PAL) program is unique to the Faculty of Science. PAL is a free, peer-led weekly study program run by current UWA students who have completed the units. PAL leaders share their study tips and their experience in transitioning to uni life at UWA. It is a great way to meet other students.

Other UWA programs such as UniMentor and UniSkills also help to ensure you get the most from your studies and your life at university.

Orientation

Our orientation program is unique. By the end of it you will:

• Know a group of students studying the same units as you
• Have met lecturers
• Be familiar with the campus
• Be familiar with UWA online systems
• Be academically prepared to study at UWA

From the classroom to the field

Many of our majors include field trips or industry placements, meaning your journey of scientific discovery will take you beyond the classrooms and laboratories and give you the opportunity to immerse yourself in the hands-on side of science. Such a flexible and varied curriculum will assist you to sharpen your technical skills and take a practical approach to your field of science, ensuring you are well-equipped to transition into your chosen career.
“When looking for answers you will find interesting things along the way. That is how science works.”

Brian Schmidt
2011 Nobel Prize winner
Our courses

UWA’s courses

UWA’s course structure has been designed to offer you flexibility in your study program and allow you to follow your passion.

By choosing to study science at UWA you’ll acquire the skills so highly regarded by employees including those of communication, research, and problem solving. Whether you’re fascinated by cutting-edge pure and applied science, or are eager to pursue new multi-disciplinary fields, you’ll enjoy the benefits of a flexible course structure.

As an undergraduate student at UWA you have the choice to study science majors within any of the five bachelor’s degrees:
- Bachelor of Science (BSc): 3 years
- Bachelor of Arts (BA): 3 years
- Bachelor of Commerce (BCom): 3 years
- Bachelor of Design (BDes): 3 years
- Bachelor of Philosophy (Honours) (BPhil[Hons]): 4 years

Combine your interests: Choose two majors

Within your undergraduate course you will be required to take at least one degree-specific major and have the option to take a second major.

Your second major can be taken from the Bachelor of Science or from any of the other degrees. This will enable you to choose from all fields of study across the University (subject to prerequisites).

A carefully considered choice of majors can open the door to a range of options after graduating.

Our renowned, world-leading researchers are also your teachers.

We train you for the future.

Bachelor of Science

Your journey of discovery begins here.

The three-year Bachelor of Science (BSc) at UWA offers 31 degree-specific majors (specialised subject areas), each designed to prepare you for the exciting and diverse career possibilities which lay ahead.

UWA’s Bachelor of Science is a practical degree where teamwork, critical thinking and problem solving are crucial to finding creative solutions to everyday problems. The course is specifically designed to allow you to start with a broad range of subject areas, giving you the opportunity to really experience first-hand the various areas of study you can specialise in as you progress through your course.


A degree from UWA really does make a difference!

Source: QS Graduate Employability Rankings 2016
During your studies you will complete at least one of the majors listed below, as well as a number of units designed to broaden your educational experience.

**Bachelor of Science majors:**
- Aboriginal Health and Wellbeing
- Agricultural Science
- Anatomy and Human Biology
- Applied Computing
- Biochemistry and Molecular Biology
- Botany
- Chemistry
- Computer Science
- Conservation Biology
- Engineering Science
- Environmental Science
- Exercise and Health
- Genetics
- Geography
- Geology
- Marine Science
- Mathematics and Statistics
- Medical Sciences
- Microbiology and Immunology
- Natural Resource Management
- Neuroscience
- Pathology and Laboratory Medicine
- Pharmacology
- Physics
- Physiology
- Population Health
- Psychological Science
- Psychology (double major)¹
- Quantitative Methods
- Science Communication
- Sport Science
- Zoology

UWA’s Broadening Units will add a valuable dimension to your studies. Employer groups and professional associations have repeatedly emphasised the need for graduates to be equipped with broader knowledge and skills to prepare them for a rapidly changing international workplace.

**Admission requirements**

Applicants will need to demonstrate English language competence and a minimum ATAR of 80. Before nominating a degree-specific major, applicants must have satisfied the specific prerequisites. Science majors have Mathematics as a prerequisite. Visit [studyat.uwa.edu.au](http://studyat.uwa.edu.au) for information on the prerequisites for each major.

**Further study**

Postgraduate qualifications are fast becoming an expectation for graduates internationally.

Whether you are looking to undertake a graduate course in the professions, become an industry leader, change careers, develop new skills, make professional connections, or expand your horizons, UWA has a course for you. After finishing your bachelor’s degree you will have a range of postgraduate courses available to you.

Students who continue to study at a postgraduate level will benefit from increased employability, a stronger knowledge base, and improved links with industry and professional practices.

Your catalyst to a rewarding career.

“Science is the great antidote to the poison of enthusiasm and superstition.”  
Adam Smith (1723-90)  
Scottish economist.  
*The Wealth of Nations, 1776.*

¹Students cannot choose to study a second major with the Psychology double major and it is not available as a second major.
We’re making life-changing discoveries

Your passion for science, along with ours, can help make a real difference to the world.

Here are some of the projects we are working on:

Feeding the world

• Professor William Erskine is working to overcome malnutrition in East Timor with the ‘Seeds of Life’ program.
• Professor Harvey Millar, winner of the 2012 Australian Academy of Science Fenner Medal for Biology, is working on engineering plant energy efficiency.
• Professor Kadambot Siddique is working on maintaining crop production to feed a growing world population during a period of climate change.

Preventing, diagnosing and treating disease

• Professor Tim St Pierre, winner of the 2010 Academy of Scientific and Technical Engineering Clunies-Ross Award, researched the magnetic property of iron in biology and medicine which led to the development of the FerriScan, now used in over 20 countries around the world.
• Professor Pilar Blancafort is an expert in the field of molecular and genome engineering. Pilar is ‘tailoring the genome’ – she has generated the first engineered DNA binding protein able to reprogram the genome of a cancer cell into a normal-like state.
• Professor Sergei Kuzenko, an ARC Australian Professorial Fellow, is collaborating with the Max Planck Institute for Gravitational Physics in Germany on quantum conformal supergravity.

Harnessing resources and energy for a sustainable future

• Professor David Lumley is the UWA Chair in Geophysics and Director of the UWA Centre for Energy Geoscience. Professor Lumley is an internationally acclaimed expert in 3D and 4D time-lapse seismic imaging of the Earth’s subsurface, including hydrocarbon exploration and recovery, and CO₂ injection and storage (geosequestration). He is addressing the petroleum industry’s need for enhanced tertiary education in petroleum geology and geophysics. The Centre builds on existing strengths at UWA in geology and geophysics, from large-scale plate tectonic and sedimentary basin processes, to pore-scale geological and rock physics phenomena.
• The UWA Centre for Petroleum Geoscience is bringing together dedicated researchers, educators and industry partners to better explore and develop Australia’s hydrocarbon energy resources, and to sequester greenhouse gases like CO₂ in an environmentally responsible manner.

Furthering human knowledge and serving humanity

• Professor Peter Quinn is an influential astronomer and Director of the International Centre for Radio Astronomy Research (ICRAR) based at UWA. ICRAR plays a key role in the development of the world’s largest ground-based radio telescope array – the SKA (Square Kilometre Array).
• Professor Ryan Lister, a genome biologist, won the Australian Academy of Science’s Ruth Stephens Gani Medal for 2014. His work represents a significant leap in the understanding of how and why DNA is modified along the genome and how ‘epigenetic’ modifications relate to normal and disease states in humans and plants.
• Professor Sergio Kuzenko, an ARC Australian Professorial Fellow, is collaborating with the Max Planck Institute for Gravitational Physics in Germany on quantum conformal supergravity.

Restoring and maintaining balance in our natural environment

• Professor Shaun Collin, WA Premier’s Research Fellow, is a world leader in comparative neurobiology and vision. His research centres around integrating the fields of neurobiology and ecology; understanding how animals perceive and process their sensory world; sustainable conservation of biodiversity; sensory approaches to improving aquaculture and fisheries management; and the development of shark deterrents.
• Professor Dan Murphy, ARC Future Fellow, is researching our ability to deal successfully with the global challenges of greenhouse gas emissions, climate change, and declining fertiliser reserves by better understanding of the functioning of microorganisms and their interaction with soil, plants, water and atmosphere.
• Professor Boris Baer is Coordinator of the Collaborative Initiative for Bee Research (CIBER), which seeks to address threats to honeybee colonies. The aim is to slow the global decline in bee populations which is jeopardising the maintenance of international food supplies.
Our strong research focus informs and becomes a part of our teaching, which ensures our students are at the forefront of scientific developments.

“The most exciting phrase to hear in science, the one that heralds new discoveries, is not ‘Eureka!’ (I found it!) but ‘That’s funny...’”

Isaac Asimov

Research

Our exceptionally strong research quality and culture has seen UWA recognised internationally as one of Australia’s leading research-intensive universities and the premier research institution in Western Australia. Partnerships and collaborations are an integral part of our research capability. UWA annually receives more than AUD $200 million of external research income.

UWA’s research is rated above world-class standard in 38 fields of research, and 79% of these are science fields.

Our strong research focus informs and becomes a part of our teaching, which ensures our students are at the forefront of scientific developments.

Science research takes place within the Faculty’s nine schools and numerous research centres and institutes.

www.science.uwa.edu.au

Our Science Global Research Showcase focuses on the Faculty’s world-class research, bringing about meaningful change for the world and humanity in our key areas.

scienceglobal.uwa.edu.au

Six key themes for a better world

The diverse nature of our faculty and Western Australia’s resource-rich natural environment give our students unique research opportunities. Our faculty focuses on meaningful change for the world and humanity in six key areas:

• Feeding the world
• Preventing, diagnosing and treating disease
• Furthering human knowledge and enhancing society
• Harnessing resources and energy for a sustainable future
• Restoring and maintaining balance in our natural environment
• Optimising physical and mental performance

A selection of our current research projects can be found at science.uwa.edu.au/courses/postgrad/opportunities

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

*Ranked 1st in Australia and 25th in the World for Life and Agricultural Sciences*

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide

“UWA is at the top of the WA academic ladder, is the university with the best site, the most delightful campus and a very strong and growing research track record.”

Good Universities Guide