WATCHING AUSTRALIA WASH AWAY

SCHOOL TO UNI—MAKING THE SWITCH

DISCOVERY DAY 2011 PHOTOS INSIDE
A truly curious mind can turn a simple answer into a brilliant question. And all the best questions lead to more questions. There’s always more to learn.

So what fuels your curious mind?
FIRST YEAR AT UNI

Sam Harley is headed into his second year of an International Bachelor of Science. Sam spoke to UniSpeak about his experience as a first-year student, and what it was like going from high school to uni.

"Starting uni was exciting. I'd been in classes at school for 13 years, so I was really looking forward to the change. The lifestyle change was noticeable. There was more to high school than just classes, but it's nothing like uni campus life.

I was worried, coming here, of being a 'little fish'. The thing about starting at uni, you soon realise it's not like high school, people are more equal. Third-years aren't 'superior' to first-year students in any way. People don't see each other like that here.

A big difference from school was in first-year science, suddenly I'm in huge lecture theatres full of 700 people. But there were still tutorials that were small enough for me to get that personal connection.

It took a while to adapt to the different way of learning at uni. I’d wonder: do I take notes here? Do I just listen? I basically had to learn to be a student again, tune in to the new style find out the best way to learn in this environment.

Socially, the chance to meet new and different people was a huge factor for me. What’s great about first year is that everyone's in the same boat, they want to meet people and make new friends too.

The facilities at UOW are pretty amazing compared to high school. I mean, at high school I had a canteen, a sports shed, you know? Here you have the whole UOW sports complex, a library as big as my entire high school, access to all sorts of resources and events.

Particularly from a science point of view, the labs are pretty cool. I get to use much better technology than in school, things like spectrometers, some pretty expensive equipment.

In high school chemistry you’re using pretty weak concentrations of things; in uni you’re using the real deal. You’re not watching the teacher demo a prac, you’re doing it yourself. You really have to know what you’re doing, too, and it really reinforces what you’ve learned in lectures.

There’s definitely more responsibility in uni, particularly with regard to learning.

You’re not getting hassled for not doing homework—often, you’re the only person who knows you haven’t done it. It’s all up to you. But I think that’s great.

You get to be more flexible. If you’re really busy you can put something aside and then when you’ve got free time you can get stuck in to really intensive work. That’s a big improvement over high school.

It’s also good having access to a whole faculty of science teachers. You might talk to one biologist who is doing something completely different to another biologist. And as they’re teaching you, you get to see they’re doing some very cool stuff. One of my lecturers is one of the leading conservational biologists in Australia. Being taught by people who are leading a field is pretty amazing.

International Bachelor of Science
ATAR 95 + application and interview, UAC: 757600
Hey Guys! Scully here

More than 5000 of you attended to get a taste of what uni life is like. I hope you enjoyed it as much as I did. If you liked what you saw, or have any questions about coming to UOW, jump on our Facebook page and leave a note, or drop us a line at 1300 367 869.

Remember to tell a good story!

Josh Scully
(Sculldizz or Scull-Dog Millionaire)

There are stacks of photos of all the D-Days action on Facebook, so if you haven’t yet become a fan, go to www.facebook.com/uowfuture
**Peer Study Sessions at UOW**  
www.uow.edu.au/student/services/pass

The PASS Program (Peer Assisted Study Sessions) is a program where students work together to reinforce concepts and develop effective study strategies. PASS is a group learning program that consists of weekly one-hour, non-compulsory sessions. It’s free, it’s friendly, and participants regularly increase their marks in key subjects by up to 20 points.

PASS at UOW is a particularly strong program with a ten-year history of success. It was voted 2010 Most Outstanding PASS Program in the World at the International PASS Conference—the first time in 20 years it had been awarded to a program outside the USA.

Learning sessions are based around subjects commonly seen as challenging. They are led by senior students who have excelled at these subjects in the past, such as Alison Reglar, who talks to UniSpeak about experiences with the program.

**ALISON REGLAR**  
Bachelor of Arts Dean’s Scholar (History, Politics)  
PASS leader

“I can sum up all the differences between high school and uni with one word: freedom. Rather than following a regimented structure like at school, where lunch breaks and class times were strictly enforced, at uni, students have more flexibility and freedom. There is a lot more pressure on students to be self-motivated.

“I think students sometimes struggle to come to terms with this increased independence. Having said that, the increased freedom is my favourite thing transitioning from high school to uni. The self-reliance that comes with uni, I believe, has made me more mature and it is certainly something that I’ve grown accustomed to and now embrace.

“Being a PASS leader involves being a mentor to the students. Our job is not to teach the students, we are there to provide extra assistance to people who are finding a subject difficult.

“When I was a mentee in the program, I gained the confidence to express my opinion—something I was too timid to do in tutorials before I went to PASS. I was able to take this and apply it to tutorials where I became more actively involved instead of being a bystander.

“I believe programs like PASS are an essential part of the uni experience. That the PASS program is peer-orientated means that the gap that can develop between student and tutor is diminished, as students gain confidence from being in an environment with people in the same position as them. I definitely recommend every student should take up the opportunity to be involved in PASS. It’s a great way to make friends, settle in to uni life and boost your marks as well.”

For more info see www.uow.edu.au/student/services/pass

**James Deane**  
Peer-2-Peer student mentoring program

The UOW Faculty of Arts is making the transition to university study easier than ever with the new Peer-2-Peer student mentoring program.

It can take time to settle in at university without some guidance. After all, university’s a big place, and there’s so much to do it’s sometimes hard to know where to start. That’s where Peer-2-Peer comes in. It connects small groups of first-year Faculty of Arts students with an experienced mentor—someone who’s in the later years of their degree.

The Faculty’s James Deane sums it up easily. “With Peer-2-Peer, you can hear all about it from the people who know best: Arts students who have been where you are.”

Every new Bachelor of Arts student completes the ten-week program at the beginning of their degree. This makes starting uni life and meeting new people easy.

“Because of the diversity of a Bachelor of Arts, close to 80% of students enrolled in the degree have a unique timetable,” says James. While Peer-2-Peer helps Arts students make lots of new friends, it also connects them with valuable university services, academic, extracurricular and social events.

James only recently finished a Bachelor of Arts himself, so he understands the challenges of first year. “The thing is, starting uni is a busy time. Sometimes it’s hard to absorb all this new information at once, particularly for support services. This is where Peer-2-Peer is a big advantage.”

“You also may not even think of extracurricular activities, which is a shame. An Arts degree is really what you make it. It’s not just the flexibility of the degree program itself, it’s about all the extracurricular activities you can add.”

www.uow.edu.au/arts

Bachelor of Arts – ATAR 75, UAC: 753101
LAW FIRST-YEAR EXPERIENCE

A Bachelor of Laws is a challenging but rewarding degree. It can be more structured than some degrees as it has to meet the requirements set by the Legal Profession Admission Board of NSW. But this doesn’t mean all first-year law programs are the same!

In fact, at UOW, your first year has been carefully designed to prepare you for success all the way through your degree. UOW calls this the immersion program.

- One of the most distinctive features of the first-year law experience at UOW is the POD system. For your first semester, you’ll take all your tutorial classes with the same group of students. This makes it very easy to settle in and find friends and study partners. From then on, you will gain more control over your timetable every semester, until your third year when you choose a suite of electives to customise your qualification.

- Starting in the first session of first year, you will study a program of skills subjects. They cover the key professional skills you need to succeed in a legal career, including legal writing, advocacy, communication skills and dispute management.

- You will study an integrated curriculum, which means you will receive a broad and even-handed legal education. This will help you keep an eye on the big picture, giving you the confidence to choose from hundreds of options the legal career that suits you best. UOW law graduates are known for their adaptability and awareness of the how the law works in a real-world context.

You can find more information about UOW’s law programs at www.uow.edu.au/law

When my colleagues and I are talking to future students about the option of studying law at the University of Wollongong, or talking to current UOW law students about their post-graduation plans, we are used to fielding questions like:

“What sort of job will a UOW law degree get me? Does a UOW law degree give me the breadth and quality of career opportunities available to graduates of other law schools?”

These are fair questions, and we realise that they require more than just broad reassurances. We’ve worked out that the best answers are the ones that come directly from the mouths of our many successful graduates who, since the early 1990s, have been pursuing careers in a diverse range of professional workplaces—in law firms, in government departments, in community legal centres, in the corporate, banking and finance sectors, in human rights organisations and in universities.

I invite you to visit our website and hear from a selection of graduates about where their UOW law degree has taken them. We are confident that these career success stories provide strong evidence that the LLB degree at the University of Wollongong is not only highly regarded by employers, but it is a passport to a diverse range of career options.

You can download a copy of our brochure at www.uow.edu.au/law/uowllb

Professor Luke McNamara
Dean, Faculty of Law

Bachelor of Laws = LLB

If you are thinking of studying a law degree you will see the abbreviation LLB used everywhere, but what does it stand for?

LLB stands for Legum Baccalaureus which is the Latin translation of ‘Bachelor of Laws’.

People have been studying law at university since the 12th Century!
The disastrous flooding of Queensland and Victoria in the opening weeks of 2011 made clear to the whole country how dangerous and destructive extreme environmental conditions can be. What isn’t so clear, and what may take the work of scientists to uncover, is how much damage these floods did to the rivers themselves.

The most alarming thing about the damage to land, rivers and oceans caused by the floods is that it doesn’t take flood conditions for this damage to occur. It may be happening in rivers all over the country, little by little, right under our noses.

Professor Gerald Nanson teaches in UOW’s school of Earth and Environmental Sciences. He is keenly aware of the importance of monitoring the health of river systems, and not just in times of crisis.

“The floods of Queensland have raised important issues relating to how well Australia collects vital data about potential hazards,” says Professor Nanson. “And how adequately our country understands and therefore is prepared to deal with these hazards.”

It can be a surprising idea, ‘nature damaging nature’. It’s normal to assess environmental damage as something humans impose on the world, and the reverse: natural disasters destroying human life and property.

“Take the rivers along Cape York and the east coast of Queensland”, says Professor Nanson. “Sediment washed from these rivers has had a big impact on damaging the Great Barrier Reef.” And the Reef isn’t just a unique ecosystem, it’s a national icon. “We can determine immediate connections between agricultural activity (upriver) on the biology of the reef and tourism—and culture.”

“In environmental science, one rarely studies something that is completely isolated from other factors.”

This kind of lateral thinking typifies the work of an environmental scientist, according to Professor Nanson, but it’s not the whole story. A lot of it is just good science: thoughtful, well-documented observation of the world around us, such as river gauging and sediment analysis. It’s important work on “a continent where rivers are our lifeblood and soils are our foundation for agriculture.” However, it’s not as visible as work on, for example, bushfire science.

“Data collection has never been seen as particularly sexy,” Professor Nanson admits. “But there’s really no way around it. Governments simply have to do it to understand and assess our environment.”

It’s particularly important in Australia, Nanson points out. “We have such a variable client in Australia we need long records to properly assess the environment. For example, for many years some rivers in Australia just don’t flow. Collecting five years of data when the river isn’t flowing is no good. Sometimes you need to collect data for 50 or 150 years for useful data.”

“Really understanding these interconnections requires a very solid undergraduate background. Students have to have done detailed studies in a range of areas—biology, earth science, chemistry, soil engineering—so they can coordinate effectively with other scientists.”

Of course, like in any other profession, passion is key.

“In my experience, I see that young people have a certain level of idealism. They are very concerned about the environment and how it’s being treated. They want to do something, and that’s exactly what environmental science is about: modifying, protecting and improving the environment.”

**ENVIRONMENTAL SCIENCE AT UOW**

Environmental science is characterised by its ability to bring together diverse branches of science and other professions. Environmental scientists have exceptionally good contextual knowledge—and are good lateral thinkers, able to correlate pieces of information to understand the changes happening in the world around us. Their strong communication skills mean they will often find themselves leading teams of specialists to tackle a problem.

There are a number of degrees at UOW for people interested in environmental science. However, a wide variety of professionals can apply their skills to investigate our environment, from engineers and chemists to mathematicians and sociologists. If you’re interested, call UniAdvice on 1300 367 869 or talk to your Careers Adviser to discuss options.

- Bachelor of Environmental Science UAC: 757612. ATAR 85
- Bachelor of Environmental Science Advanced UAC: 757618. ATAR 95
- Bachelor of Marine Science UAC: 757622. ATAR 85
- Bachelor of Marine Science Advanced UAC: 757623. ATAR 95
- Bachelor of Science - Environment UAC: 757601. ATAR 75
- Geology UAC: 757620. ATAR 75
- Geosciences:
  - Human Geography UAC: 757620. ATAR 75
  - Land and Heritage Management UAC: 757601. ATAR 75
  - Physical Geography UAC: 757620. ATAR 75
In November 2010 the Faculty of Engineering began installation of its first small-scale wind turbine at UOW’s Innovation Campus. The 5-kilowatt wind generator can generate close to half the daily energy needs of the average Australian home. Perhaps more importantly, it will be a valuable training tool for the next generation of engineers studying at UOW.

The project has been coordinated by Professor Paul Cooper of UOW’s School of Mechanical, Materials and Mechatronic Engineering. It represents a key component of the Sustainable Buildings Research Centre (SBRC) opening in 2012. Professor Cooper says UOW plans to run the building entirely on renewable energy generated on-site.

“The SBRC will be a state-of-the-art building that demonstrates on-site renewable energy generation from photovoltaic solar systems and wind turbines of various types.”

These turbines will assist the Faculty of Engineering in research efforts to improve small-scale wind turbine performance including renewable energy production and noise minimisation. They will also find their way into the undergraduate classroom.

“Mechanical and mechatronic engineering students will be able to train in sustainable energy systems. In their classes on wind energy systems they will use the data from the wind turbine to understand to optimise wind turbine designs.”

Professor Cooper believes this training is important for young engineers, who will be at the forefront of developing green power technology. “Engineers are the people who will transform the way in which energy is generated and used in the coming years and decades.”

“Mechanical engineers are working to develop new wind and solar power stations, and materials engineers are developing new materials for fuel cells. Virtually every discipline of engineering is involved in this important quest to reduce our impact on the environment while increasing the wellbeing of everyone.”

It’s not just mechanical engineers students who will benefit from the turbine project, according to Professor Cooper.

“From economics students interested in cost effectiveness and carbon, through to electrical engineers learning how wind turbines export power to the grid, this installation will be valuable for a range of UOW students.”

Bachelor of Engineering (Mechanical Engineering) – ATAR 78, UAC: 755614
Science journalists are the modern professionals tasked with bringing increasingly complex science news into the homes of the general public. Using the exacting approach of a scientist, they break stories on everything from genetic modifications, to new mobile phones, to billion-dollar particle colliders.

Dr David Blackall teaches and researches at UOW in the fields of journalism ethics and law, investigative journalism and documentary filmmaking. He talks to us about science journalism, why it's important, and the responsibility it requires.

In 2009, a journalist working for a very reputable news service broadcast a story called ‘White House report urges action on climate change’, in which the journalist claimed climate change leads to more frequent earthquakes. Of course, there is no such proven link. The causes of earthquakes are quite well understood and not associated with climate change. The reporter made the mistake of using only one source for the story: a report that came from the United Nations.

There are many parallels between journalism and science. Both require an exacting process to arrive at truth in the public interest. Both require due diligence.

Science education can enable learning journalists to spot the problems in the source information, which is often provided through a press release. Journalists without that solid grounding in science can be vulnerable to simplistic two-sided summaries of an issue, particularly when it has a complicated science base.

Before working in journalism I taught HSC biology, agriculture and geology for ten years. All my work is informed by that original science education that gave me scepticism and a thorough approach to interpreting data. That education allows me to see the damage being done by irresponsible or misinformed journalism.


"The floods battered New England, then Nashville, then Arkansas, then Oklahoma—and were followed by a deluge in Pakistan that has upended the lives of 20 million people."

The title lays blame for floods on carbon dioxide emissions from cars, industry and power generation. However, the reality is that the immediate cause of flooding was related to the ground-level human activity directly upstream.

Heavy rain falling on already-full dams surrounded by deforested mountains and hillsides gave the water no other path but downwards, picking up everything it its wake. With no natural vegetation to absorb and slow the impact of rain, in many cases whole mountainsides washed into rivers, increasing the amount of soil the river was carrying.

This mechanism is simple, physical and observable and the ethics of responsible reporting are lost when mention is made of global warming in this context. Soils that usually sustain life, grow crops and sequester carbon are often washed away in such floods. Agriculture may now be impossible in parts of Pakistan where the floods hit last year; and irresponsibly blaming the wrong causes will only make it harder to prevent such a thing occurring again.

Mainstream news desperately needs more young science-educated journalists who can accurately interpret scientific papers and bravely stand their ground on the veracity of their stories and their sources.

Bachelor of Journalism – ATAR plus Portfolio/Interview, UAC: 754700
Science journalism is just one of the interesting careers you can prepare for with a UOW double degree.

Double degrees let you combine specialist studies in at least two areas. Double degree students still have a full choice of majors for each of their degrees, too. This means you can create a study program tailor-made for your dream career.

This is a diagram of all the double degree and major combinations you can choose from—if you start with just three degrees.

- Bachelor of Journalism
- Bachelor of Communication and Media Studies
- Bachelor of Arts

See page 22 of the UOW Course Guide.

Where will your curious mind take you?
GRADUATE PROFILE
DANIEL RICKLEMAN
Geologist
Manas Resources
Bachelor of Science Honours (Geosciences) 2004

I work for an Australian gold exploration company in Kyrgyzstan. My main job is to help plan and run exploration activities and the geological aspects of a feasibility study on a gold deposit. I spend about half my time in the field living in a small village, and half in the capital city Bishkek. I love living and working overseas. Previous to this job I worked in China for three years in a similar role.

I think it’s important in Geosciences that you can reach out and touch what you’re studying. At UOW, it was great that we could do so much fieldwork in nearby places and see amazing things relevant to what we were studying.

Bachelor of Sciences (Geosciences) – ATAR 75, UAC: 757620