Turn on the TV and you’ll see water, water everywhere. Managing Australia’s water resources, coasts and oceans is the biggest challenge our society faces, prompting Griffith University to introduce two exciting new degrees to equip students to tackle the water challenge.

Temporary drought or permanent issue?

Bachelor of Science (Water Resources)

With drought, water recycling and desalination topping the environmental agenda, the water resources industry is more complex than ever before.

These days it’s not enough to have a science or a resource management degree – the industry needs graduates who understand water issues from the catchment to the tap to the sea and back again.

As a Bachelor of Science (Water Resources) student, you’ll learn the sound biology and chemistry skills of a science degree, plus water resource management, conservation and restoration.

Career options
- Water resource planning
- Water quality testing and data analysis
- Waterways management and rehabilitation
- Catchment and groundwater monitoring and management
- Wastewater treatment
- Policy development, community consultation and public education
- Engineering or environmental consultancy in a range of industries

Find out more: www.griffith.edu.au/water
Real life study: 
Jelly plague?

Oceans throughout the world are experiencing plagues of jellyfish. Why?

Scientists believe it’s a result of commercial overfishing – with fewer fish around, the jellies have little competition for food and are able to flourish. These jelly plagues are now so thick and plentiful they damage ships’ engines and destroy fishing gear. What effect will this have on other marine animals and plants and on our shipping and fishing industries? Can we do anything to restore the balance?

Griffith School of Environment students Liz West and Julien Bouchet are currently working with Sea World to study the jellyfish phenomenon, in the hope of answering these questions in the future.

Top tech innovations on display in student expo

Looking for a security door that recognises faces? Or a soccer player’s reaction times to find the next David Beckham? There were a few of the amazing projects on show at the recent Griffith University Project Expo, a display of the hottest science, environment, engineering, multimedia and technology projects completed by Griffith students on final year industry placement.

Other projects included:
- a project remotely linking weather tracking systems with wastewater pump station operations to prevent overflows
- an electronic movement device to help recover after a knee reconstruction
- a device to judge snowboarding competition manoeuvres
- a method for mapping and predicting tsunami and cyclone surges
- a way to reduce drinking water wastage at wastewater treatment plants
- a design for more environmentally-friendly concrete
- robots that navigate around a home.

Program Manager Carol-Joy Patrick said the 130 projects on show were completed through Griffith’s Industry Affiliates Program (IAP), a scheme through which final-year students tackle real-life projects for external companies or university research centres.

“Employers prefer to hire students who’ve already been tested in the workplace, understand workplace culture, and have delivered a substantial industry project,” Carol-Joy said.

“It also removes obstacles for students, who graduate with relevant industry experience and contacts.”

Bachelor of Marine Science

This challenging new multi-disciplinary degree builds a critical knowledge link between marine biology, water science, coastal management and coastal engineering. As a student, you’ll complete industry placement with key organisations working on real-life projects in fisheries, aquaculture, marine conservation, coastal and resource management. You’ll graduate with the knowledge, networks and hands-on experience to navigate a world of exciting and fulfilling careers.

Career options
- Environmental consultant in modelling, meteorology and oceanography
- Environmental assessment and planning
- Pollution control
- Chemical oceanography

Find out more: www.griffith.edu.au/marine

Killing machine or dying breed?

Real life study: 
Jelly plague?

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Howzat: Vernon D’Costa with his project to develop an electronic system to assess the skill of a batsman.

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Got a CyberTwin yet?

Ever wanted a twin? How about one who never sleeps and can chat to your friends online on your behalf 24/7? You need a CyberTwin!

www.mycybertwin.com is the brainchild of Griffith graduate John Zakos who used his IT skills to create a revolutionary online company.

“MyCyberTwin enables users to create a personality that can chat online,” he said.

“You decide what your twin looks like, then you ‘teach’ it all about yourself, so it can answer questions just the way you would. The more you teach it, the more it knows about you, and the more accurately it answers.”

John developed the Java-based software system then worked with business partner and co-founder, psychologist Liesl Capper, to create a system of realistic human personalities for the MyCyberTwins.

John said while thousands of people around the world now had an online MyCyberTwin, businesses had also jumped on the concept.

“Businesses use MyCyberTwin to create an online virtual employee to answer questions from customers any time in any time zone around the world,” he said.

The former Trinity Lutheran College student completed a Bachelor of Science (Computer Science) at Griffith before going on to earn an Honours and PhD in Griffith’s School of Information and Communication Technology. He’s now come full circle, acting as a guest lecturer to Griffith IT students.

Students with an ‘i’ on the future

A team of Griffith Bachelor of Information Technology students captured the attention of Australia’s IT industry with a project linking struggling families with online information.

The team’s Communities for Children E-kiosk designed for the Salvation Army was among three student projects selected as finalists in the Australian Information Industry Association’s 2007 ‘iAwards’.

The project was part of Griffith’s Work Integrated Learning program, where third-year students complete a hands-on project for an industry client as part of their studies.

It involved designing a simple-to-use touch screen information kiosk for families of young children in their local area.

Team project manager Peter Shipway said managing a large, in-depth project gave him the confidence to go out into a real life situation and perform his best, knowing he already had a lot of the skills required.

“It is also fantastic to see something we put so much time and effort into, actually out in the local community being used.”

Salvation Army Communities for Children program manager Geraldine Harris said the students received Children’s Champions Awards from the Salvation Army in recognition of their work.

“They were incredible: innovative and dynamic in the IT realm and compassionate and dedicated to their understanding of early childhood and the community,” she said.

“The partnership allowed for a reciprocally beneficial placement providing students with the community experiences and the community with the expertise and professionalism of Griffith students.”

Can I have IT with that?

Whether you are working towards a career in movies, medicine, sports science, coastal engineering or business, you might find yourself working alongside a Griffith Bachelor of Information Technology graduate.

Forget the image of IT jobs as ‘desk jockeys’ – in today’s technology-driven workplace nothing happens without an IT professional.

Griffith now offers a range of double degrees including Science/IT, Engineering/IT and Multimedia/IT to meet industry demand.

Griffith University Head of Information and Communication Technology, Dr Michael Blumenstein said the double degrees provided graduates with great versatility.

“You invest a bit more time in a double degree, but in the long run it doubles your career options. Demand for IT graduates is so great we now have graduates in industries from arts to business coming back to do our Masters in Information Technology to get the skills they need,” he said.

Examples of the diverse IT careers in which Griffith graduates now work include:

- film and television special effects and animation
- medicine, creating and operating the software that drives cutting-edge biomedical diagnostic and research equipment
- coastal management, designing computerised programs that can model everything from surf conditions to tsunami waves and climate change
- sports science and management, devising software to enable coaches to monitor and improve athletic performance
- business, working in, and running, online commerce and information services companies.

To find out more about our degrees in IT, visit www.griffith.edu.au/futurestudents
Go wild about native fruits

Griffith student Kim Hamilton has just completed a project working to save rare Australian native fruits from extinction through a program with the Millennium Seed Bank, United Kingdom.

Kim completed a Bachelor of Applied Science before earning a scholarship to conduct the PhD study. Her project is part of a Queensland program, Seeds for Life, which is collecting and conserving up to 1000 native species in Australia with a duplicate collection kept in a genetic ‘bank’ at the Royal Botanic Gardens in the UK.

“Australia has a broad array of natives fruits including citrus, but some of these are now considered rare and threatened in the wild,” Kim said.

“These natives are related to citrus fruits such as oranges and mandarins and represent an important part of the crop gene pool for sustainable production in a changing environment of drought, climate change and pests and diseases. By preserving and growing native varieties we help protect genetic diversity, which builds resilient species.”

Some native fruits:
- **Finger lime** – an oval-shaped fruit with an amazing caviar texture for use in dipping sauces, drinks and cocktails, desserts and particularly Asian dishes.
- **Davidson’s plum** – a purple fruit giving striking colour and rich flavour to jams, ice cream and cakes.
- **Quandong** – or native peach – a fleshy, drought-tolerant fruit with a tart flavour used in jams and preserves, dipping sauces and confectionary.
- **Riberry** – the fruit of a particular Pilypily with a pretty pink hue, it adds a spicy clove flavour to roast meat and stew, jams, tarts and jellies.

Qantas–Griffith partnership takes off

Griffith University has joined Australia’s leading airline, Qantas, to offer an exciting new cadetship.

The program enables students to undertake a three year Bachelor of Aviation and a Graduate Diploma of Flight Management and then on successful completion, undertake a further two years of flying employment experience within the Qantas Group.

After successful completion of this phase of training, cadets will be considered for employment as a Second Officer with the Qantas Group.

Griffith University Head of Aviation Associate Professor Paul Bates said the joint Qantas and Griffith program would open the skies to a wider range of students.

“This joint cadetship program has FEE-HELP eligibility, enabling Griffith and Qantas to recruit the best possible students from around the country without regard to their financial status,” he said.

“A university education provides well-rounded pilots, better able to meet the demands of the aviation industry well into the future.”

Find out more: www.griffith.edu.au/aviation

Battling modern plagues

Bachelor of Biotechnology graduate Sarah McAtamney is using science to battle one of humanity’s most fearsome enemies.

She is working to understand how human cells are infected with dengue fever virus, a devastating tropical disease that kills about 25,000 people and makes 50 million sick each year.

“Dengue is very tricky to fight, with no drugs or vaccine available,” she said.

“Dengue Haemorrhagic Fever (DHF) is a very nasty disease. Victims of the gruesome DHF virus often suffer massive internal bleeding and organ damage. Without treatment, about 20% die. The disease is also spreading rapidly. Before 1970, only nine countries were affected; now more than 100 countries have had outbreaks. With global warming, more parts of the world could become warm enough to breed mosquitoes that carry the virus, creating an urgent need for anti-viral drugs and vaccines.

A former Cairns Trinity Anglican School student, Sarah is now completing her PhD and working in Griffith’s Institute for Glycomics.
Study reveals deadly frog disease

The deadly chytrid fungus is making devastating in-roads into Australia’s vulnerable frog populations, with a Griffith University study revealing the disease-causing fungus is now established in frog populations throughout eastern Australia.

Griffith School of Environment student Kerry Kriger has just completed his PhD study focusing on the geography of the disease across the region from the mountains to the coast between Cairns and southern NSW.

"Chytrid spreads so quickly that frogs often have no chance to evolve resistance to it," Kerry said.

"It's highly infectious, so when it arrives in an area most frogs are likely to contract it. It attacks the keratin in the frogs' skin, and may also produce a toxin that poisons the frog. It can have an 80% mortality rate, and is believed to be responsible for six to eight species' extinctions in eastern Australia."

Research is underway to understand and control the disease. Meanwhile people can help by not handling frogs and not relocating frogs or tadpoles from one place to another.

On the trail of urban dragons

Bachelor of Science (Environment) student Amy Bond is used to getting funny looks when she tells people she’s studying dragons at university.

Amy’s scaled monsters aren’t the fire-breathing child-gobbling kind, but the Physignathus lesueurii or Eastern Water Dragon. The animals grow to about 80cm and can be found near creeks and waterholes around Australia’s east coast.

Amy is studying lizards in a cross-section of sites from urban to semi-rural Brisbane, with a focus on the social behaviour of the animals, which communicate with each other through body language.

“They’re quite social for a lizard, and we often see them in groups. They communicate with a wide range of head bobs, arm waves and tail flicks,” she said.

“They seem to have adapted quite well to living close to humans.

“One of my research sites is a car yard where lizards have migrated from a nearby creek into an outdoor water feature,” she said.

On completion of her Honours in Griffith School of Environment at the end of the year, Amy hopes to work in wildlife conservation.

Start at the top

When studying an Urban and Environmental Planning degree, it helps to go right to the top!

That’s what Griffith University students did last semester when they toured Q1, the world’s tallest residential building, situated on the Gold Coast.

The Q1 Observation Deck provided the ideal vantage point to view the city’s development as a whole.

Lecturer Dr Caryl Bosman said the students got a guided tour of the city’s developments with Gold Coast City Council’s supervising planner, principal architect and urban designer.

“We were sponsored by the Council’s Planning Environment and Transport directorate, which gave students the chance to ask questions of senior planners,” she said.

“They looked at the history of development on the Gold Coast, its built form and urbanisation, including the human-made changes such as the canal developments.

“They also explored environmental problems and threats such as traffic and transport congestion, urban sprawl and climate change, and looked at the role planners can play in minimising these.”
Glenn’s career bigger than Texas

Diamonds in Canada. Gold in Tanzania. Copper in Argentina. Nickel in Western Australia. Software developed by former Griffith School of Engineering (electronic engineering) PhD student Glenn Wilson is being used in these and many other exploration operations around the world. And now he has packed his bags for abroad after being snapped up by one of the world’s largest companies. Based between Houston and London working for BP, Glenn will be involved in the development of new technologies for offshore oil exploration in some of the most remote, exotic and dangerous (sometimes all three!) places on Earth. ‘My education in physics and maths was such that I learnt the tools needed to build the tools others wanted,’ he said, explaining how the skills of a physicist can be used for any profession. His career began as he worked during vacations on coal mining projects across Queensland. Whilst studying for his PhD, he took part in a student exchange to The University of Utah. After graduating with his PhD at 23, he returned to Utah where he began working on software for interpreting geophysical data for mineral exploration. He was awarded a CSIRO Postdoctoral Fellowship, Australia’s most prestigious postdoctoral award, to return to Australia and continue his work. He’s now taken out CSIRO’s top young scientist award for developing the 3D imaging software in use in exploration on every continent except Antarctica – a great achievement for a student from Cathedral College, Rockhampton who simply enjoyed maths and physics, and wanted a job where he could travel the world.

Clean up your world!

Restoring contaminated land back to health is a labour of love for Griffith Bachelor of Engineering (Environmental Engineering) graduate Kylie Sheppard.

A former Cairns Trinity Anglican School student, Kylie now works with Douglas Partners, a national company specialising in rehabilitating industrial sites to make them safe for redevelopment. Her work involves testing soil and groundwater to uncover where contaminants may lay reporting back to landowners with ways to remedy the problem. ‘My favorite part of the job is getting out on site and conducting my own tests. It’s a good feeling to restore the health of a site, and I enjoy seeing the changes we can make to degraded land,’ she said.

‘Environmental engineering is a lot more than number crunching. You need be able to communicate with landowners, residents, government departments and technical experts to build a full picture of the history of the issue, and recommend solutions. ‘The degree was diverse, and really taught me how to focus on the broader issues.’ Kylie has since gone on to complete a PhD in sustainability. In her holidays she uses her skills to help out in aid projects in developing parts of Asia.
What's on at the EcoCentre

Griffith University multimedia students are doing their bit for environmental education, through a joint project with the EcoCentre to create an on-line information kiosk for one of Australia’s leading property developers.

A team of five Bachelor of Multimedia students is working with Mirvac on the new Orion Springfield Town Centre Community Environmental Education project. A winner of the 2007 EPA Sustainable Industries Award for Sustainability in Urban Development or the Built Environment, the Orion Springfield Town Centre utilises a variety of environmentally-friendly features, setting new eco-efficiency benchmarks for Australian shopping centres.

"The kiosk is a tool to inform visitors about the new centre and its environmental performance but will also provide information for people to learn about the savings that can be made by adapting power and water-saving features in their own homes," she said.

EcoCentre Manager Delwyn Langdon said this meant offsetting the amount of carbon their trip produced by investing in a project that reduces carbon.

"It's possible to buy 'carbon credits' from organisations that specialise in projects to remove carbon from the atmosphere by planting trees, or 'green power' projects such as wind power that reduce emissions," she said.

What’s on at the EcoCentre

- First week of September: Threatened species week – a great time to check out our displays and find out more about protecting threatened animals and plants in your local area.
- Wednesday 3 October: Community climate change forum
- Wednesday 14 November: Community water forum

Water wise: Students will work with Mirvac to document the Orion project’s water-saving features.

To find out more about the EcoCentre, visit www.griffith.edu.au/centre/ecocentre

Students bring Eco-info to a screen near you

Each time you use motorised transport you contribute to the huge amount of carbon and greenhouse gases released into our atmosphere.

It helps to ride a bike, car pool or use public transport, but if you can’t avoid using a car there are still ways you can offset the amount of damage your trip causes to the environment.

With climate change the ‘hottest’ issue of our time, staff at the EcoCentre decided to make their trips to work each day ‘carbon neutral’.

EcoCentre Manager Delwyn Langdon said this meant offsetting the amount of carbon their trip produced by investing in a project that reduces carbon.

“A great way to develop field research skills, and can lead to a range of exciting careers in ecology, biology and entomology.”

For more information on Mini-beasts contact the Centre on 07 3735 6557.

A ‘beastly’ day at school

Are you brave enough to share a class with some creepy, crawly critters? With the Toohey Forest Environmental Education Centre ‘Mini-beast’ program, you can get up close with some of Australia’s most fascinating and misunderstood creatures.

Coordinated by Education Queensland and based at Griffith University’s EcoCentre, the mini-beast program transports students into the amazing world of invertebrates.

Program leader Darren Shepherd said students spent a full day in the forest studying a variety of invertebrate animals including butterflies, spiders, ants, centipedes, termites and grasshoppers.

“Students learn about habitat, food chains, life cycles, adaptation and species classification,” he said.

“They use the equipment that entomologists use in the field, including nets, beating trays, pitfall and light traps. Binocular microscopes are used to examine specimens in detail.”

“Students will also design a content management system so Mirvac staff can update the kiosk themselves.”

Third-year Bachelor of Multimedia student and project leader David Cant said visitors would be able to follow an ‘enviro-trail’ to view the design features.

“With climate change the ‘hottest’ issue of our time, staff at the EcoCentre decided to make their trips to work each day ‘carbon neutral’.”

If you’re interested in finding out more about making your school, home or office carbon neutral, visit www.climatefriendly.com for more information.

To find out more about the EcoCentre, visit www.griffith.edu.au/centre/ecocentre

Carbon neutral: You can help offset the pollution car travel produces.
Making a difference

When Griffith University final-year Bachelor of Science (Ecology and Conservation) student Jennifer Sanger talks, the Queensland Government listens.

The 23-year-old is one of 30 16-25 year olds appointed to the Queensland Youth Environment Council, the advisory panel lending a fresh, young perspective to Queensland’s Parliament.

“Young people will be the ones who have to solve the world’s environmental problems, so it’s vital we become involved in finding solutions and vital that governments listen to us,” Jennifer said.

“As well as advising the government, I feel our role also involves community outreach – motivating other young people to become involved.”

As a career, Jennifer hopes to work on projects rehabilitating degraded farmland and restoring forest ecosystems.

She is currently participating in a study looking at how to accelerate rainforest regeneration by adding value to the actions of fruit-eating birds that spread seeds in their droppings.

“I think conservation is about thinking laterally and holistically. It’s not enough to just save water, recycle, or reduce carbon – we need to assess our overall lifestyle to make it more sustainable.

“It’s often a combination of simple things that make the difference – consuming fewer resources, buying Australian-made products that are sustainably produced, and avoiding excessive packaging.”

Don’t miss…

Gold Coast Schools Science Competition

Competition: 10-12 September 2007
Presentation evening: 13 September
Nerang Bicentennial Hall
Nerang-Southport Road, Nerang.
Registration via: www.helensvaleshs.eq.edu.au/sciencecomp/

Invite Griffith to your school!

Interested in Griffith staff coming out to your school? Science, Environment, Engineering and Technology staff can come to your school, talk to your Heads of Departments and meet with your students.

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Contact Griffith University for more information:
Phone: 1800 154 055
Web: www.griffith.edu.au
Email: student_enquiry@griffith.edu.au

Staff writer:
Jeanette Langan j.langan@griffith.edu.au
Editorial coordinator:
Vanessa Fairweather v.fairweather@griffith.edu.au

To order additional copies of Discovery:
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Science skills: St Michael’s College students Hayley Wilcox, Kaoli Masunaga, Valerie Moraleda and Pamela Cheok.