



How universities can help drive the Blue Economy

Australia's Blue Economy has many challenges and opportunities ahead. Its driving force – the next generation of marine scientists – will need to be equipped with a diverse range of new skills in order to create maximum benefit for the nation.

The National Marine Science Committee interviewed employers and surveyed recent graduates to find out how the driving force of Australia's Blue Economy can become job-ready. They also surveyed current postgraduate students and reviewed written submissions from 23 Australian universities.

Based on what they learned, here are some ways that universities can play a leading role in developing the potential of the Blue Economy.

Dissolving disciplinary divides

- Make a multidisciplinary organisational unit responsible for marine science postgraduate training to foster cross-disciplinary collaboration.
- Develop and deliver specialist advanced marine science workshops and coursework across institutions when appropriate.
- Track the disciplines doing marine-based research and communicate this information to prospective students.
- Address the 'legacy mismatch' between the current disciplinary focus of postgraduate training and industry demand through strategies to attract excellent undergraduate and postgraduate students to marine science from under-represented biophysical science (such as chemistry,

earth sciences, engineering, mathematics, molecular sciences) and social science disciplines (economics, law).

- Offer coursework masters programs that are cross-disciplinary and problem-focussed.
- Enable cross-disciplinary teams to work on marine science projects with students from under-represented disciplines such as engineering, social science and law.
- Offer research masters and doctoral programs across the range of marine science disciplines that require high-level quantitative skills.
- Provide research masters and doctoral students with the option of enrolling in workshops and coursework including postgraduate certificates to broaden their disciplinary base, without extra fees.

Disciplines valued by employers

- environmental science and management
- marine biology
- mathematics, statistics and modelling
- marine and microbial ecology
- cross-disciplinary studies
- marine engineering
- oceanography
- fisheries
- computer science
- social science

Transferable skills valued by employers

- problem solving
- critical thinking
- time management
- written communication
- teamwork
- oral communication
- working across disciplines
- working with big data
- artificial intelligence and machine learning
- networking project management
- entrepreneurial skills
- business-oriented thinking
- leadership

Personal attributes valued by employers

- positive attitude
- honesty
- initiative
- dependability
- adaptability



Transferable skills and personal attributes

- Encourage postgraduate students to audit their skills and competencies early in candidature to identify the additional skills they need to: complete their degree; and support their broader professional and career development.
- Include transferable skills in assessment criteria so that students will value them.
- Assist postgraduate students to be 'job ready': communicate effectively (in particular write well), and be skilled in time management and teamwork.
- Record the skills each postgraduate has developed during candidature on their Australian Higher Education Graduation Statement or some other recognised format (for example, micro-credentials).

Industry-linked

- Establish an industry advisory board to enable postgraduate coursework and research training to become more stakeholder driven and engaged.

- Foster industry internships and work placements in Australia and overseas, industry engagement scholarships and industry-embedded PhDs.
- Target scholarships to areas of industry need and on projects developed in collaboration with industry.
- Actively encourage research students to present their findings to non-experts through competitions, social media and popular articles.
- Provide an industry mentor program for postgraduate students.
- Train research higher degree supervisors to recognise non-academic career paths and understand and respect the differences between the academic and non-academic cultures so that they can advise each student appropriately.

Career development

- Offer careers workshops and other training to postgraduate students to help them understand the future of work, plan for their career, know the job market and understand the priorities of target employers.

- Train postgraduate students to incorporate information about their disciplinary knowledge, transferable skills, and personal attributes into job applications.
- Assist postgraduate students identify what they are capable of as well as what they are trained to do and market themselves.

Read the report

The full report *Improving Australia's Marine Science Postgraduate Training System to Meet the Needs of the 'Blue Economy'*, is available on our website.

Contact us

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