



# ENGINEERING WORKING WITH INDUSTRY TO SOLVE REAL-WORLD PROBLEMS

## INDUSTRY ENGAGEMENT WITH ENGINEERING STUDENT PROJECTS AND FINAL-YEAR THESIS PROJECTS

The University of Wollongong seeks to further strengthen its collaboration with industry partners. We offer interdisciplinary, career-oriented engineering courses and industry-sponsored student projects to support the rapid development and evolving needs of industry.

As an integral part of our engineering program, every student is required to undertake a final year 'capstone' project which allows a senior student to have an in-depth look at solving real-world engineering problems.

We invite current and new industry partners to suggest topics for student projects and final-year thesis projects based on their business needs and experiences.

## YOUR INVOLVEMENT IN THE PROJECT SCOPE

If your company's interests align with our faculty's research focus\*, and you have a project topic suitable for an annual or summer student project, please submit a brief (200 word) project description and your contact details as the industry partner. (*Turn page for project outline requirements and timelines.*)

Your will need to nominate a representative from your industry to work closely with the academic supervisor and student to provide ongoing guidance and direction and ensure the successful completion of the project.

The role of the representative is to assist the student to understand the project requirements and maintain regular contact with the student for the project's duration.

The industry partner is not expected to make a direct financial contribution to this work unless the industry has specialised equipment requirements.

\*UOW engineering research website: <https://www.uow.edu.au/engineering-information-sciences/research/>

## BENEFITS TO INDUSTRY PARTNERS

By engaging in the development and supervision of student projects, industry partners gain cost-effective access to the Faculty's skills and infrastructure, and to its high-performing students and staff.

Participating partners are exposed to high-performing student capabilities, knowing that on completion of the project, these students will graduate and seek employment within the same industry.

## ACCESS TO STATE-OF-THE-ART TESTING FACILITIES

Our students have access to the faculty's substantial testing and analysis equipment and to comprehensive workshops with electrical, mechanical, civil and IT technical staff for prototype building and testing. By providing a project topic for students, your company or organisation gains direct access to these facilities and staff at no additional cost.

## BENEFITS TO STUDENTS AND THE UNIVERSITY

Engaging in industry projects allows students to develop a deeper comprehension of industry challenges, design processes, and technical requirements. Thereby enhancing their employability skills upon graduation.

Through active collaboration with industry, the University cultivates enduring and mutually beneficial industry partnerships. Our students benefit from learning a more creative approach to helping solve problems currently facing industry.

## AREAS FOR ENGINEERING PROJECTS

Architectural engineering, civil, mining, environmental, mechanical, manufacturing, materials, mechatronics, electrical, power engineering, computer and autonomous systems, telecommunications and IOT, electronics, biomedical engineering, asset management and project management.



## WHAT ARE MY PROJECT OPTIONS? SHORT TERM (Dec-FEB) SUMMER SCHOLARSHIP PROJECTS

Undergraduate engineering students enrolled in third or fourth year competitively apply for a ten-week summer scholarship to examine and seek solutions for a specific industry problem.

Summer Scholarships are generally to the value of \$5000, paid over the total ten-week period. Some scholarship projects can also count toward their professional practice placement.

## OUR SUMMER SCHOLARSHIP PROJECT TIMELINE

**August** - Industry partner submits topic for Summer Scholarship Project for initial discussions with academic supervisor

**October** - Project listed on Summer Scholarships website

**November** - Students apply competitively for summer scholarships

**Dec-Feb** - Project allocated and awarded to student who works on project over ten-week summer break.

## LONG TERM OUR ANNUAL FINAL-YEAR PROJECT

Undergraduate engineering students enrolled in their final or fourth year of the Honours program must complete an annual thesis on, for example, a specific industry-relevant topic.

## ANNUAL FINAL-YEAR PROJECT TIMELINE

**Mid-October** - Submit brief (200 word) project description using our outline points and details of industry contact and potential industry co-supervisor to Rachel Weine (contact details below).

**Late October** - Academic supervisors allocated to industry project.

**November** - Project descriptions posted to Faculty website for students to consider as topics for their annual/final-year thesis. Student selected for project, start date defined.

## November – November (next year)

Annual final-year project/thesis runs according to our thesis booklet (enclosed) with regular meetings held between the industry representative, academic, supervisor and student, progress reports, presentations etc. as

defined.

**December** - Thesis final mark recorded. Graduation of student.

## PROJECT/THESIS OUTLINE REQUIREMENTS

Outline project in 200 words, to include:

1. Company/Organisation
2. Project description
3. Problem description  
**A** - Overview of current situation and difficulties  
**B** - Brief description of the industry problem to be solved and a preliminary list of key functionalities to be delivered by the project
4. Key technologies and tools to be employed for dealing with the project
5. Assumed knowledge and expected difficulties (software, limitations of access to knowledge, data, sites etc.)
6. On-site visit requirements (location, WHS or access requirements)
7. Testing requirements
8. Expected outcomes and benefits to industry partners and how this would be measured or assessed
9. Name and contact details of industry project supervisor who 'owns' the project and expected commitment, i.e., advise the number of hours per fortnight key stakeholder could commit to the project over its duration (ten-week Summer Scholarship or Annual/Final Year thesis project) and how stakeholder would best prefer to organise this, e.g., regularity, virtual or face-to-face meeting with student etc.
10. Opportunity for professional practice placements (see next paragraph) of other engineering students in the future- name of contact person

## THESIS GUIDELINES

The Thesis Guidelines for Students and Supervisors are available at the following link:

*Biomedical, Civil, Mining, Environmental, Mechanical, Materials, & Mechatronic Engineering:*

<https://documents.uow.edu.au/content/groups/public/@web/@eis/documents/doc/uow274700.pdf>

Bachelor of Engineering thesis topic information:

<https://www.uow.edu.au/engineering-information-sciences/current-students/thesis/>

## OTHER OPPORTUNITIES TO ENGAGE WITH ENGINEERING AT UOW:

### PROFESSIONAL PRACTICE PLACEMENT

Every undergraduate engineering student must complete a twelve-week professional practice placement, usually over the summer recess. Students must complete the placement under the guidance of a senior engineer.

If your company or organisation has opportunities for students to complete this work experience, please provide details to the contact listed below.

Professional Experience Requirements Guidelines for Students & Supervisors available at:  
<https://bit.ly/4dOpjz0>



### CONTACT

For more information and project/thesis submissions, contact:

### Rachel Weine

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