



The Teaching-Research Nexus

A guide for academics and policy-makers
in higher education

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Examples from Australian universities

Engineering Research Practice: Teaching masters coursework students about research methods

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Broad discipline area:

Engineering and Related Technologies

- Systems Engineering

Year level:

- Postgraduate coursework

TRN strategy:

- Teach research methods, techniques and skills explicitly within subjects

Teaching and learning context:

- Assessment (Assignment)
- Reflective learning

Brief description of the initiative:

The *Engineering Research Practice* course focuses on research methods. The aim of the course is to introduce students to a number of perspectives on research and to broaden their conceptions of what research involves. The range of research practices this course covers includes: research design, qualitative and quantitative research, sources of data, data collection procedures, measurement strategies, questionnaire design, interviewing techniques, content analysis, literature surveys, information databases, statistical techniques, evaluation and writing of research reports, papers and theses, and development of a research program.

Students are expected to undertake two preparatory assignments before the final research proposal. One assignment focuses on deciding upon the background questions they are going to answer in their research proposal, and a justification of the significance of their topic. The second assignment focuses on methodology and a literature review. Students receive feedback on these preparatory assignments and are expected to bring this work together to form the final piece of assessment, the research proposal. Students work individually on these assignments, and as they are responsible for formulating their own research question, it increases student

engagement with the task. This course prepares students for the realities of practicing as a professional engineer, because it gives the students experience in solving an engineering problem that requires investigation to find a suitable solution. This Senior Lecturer is the co-coordinator of this course, which is offered as an elective in the Master of Engineering, with typical enrolment numbers of 35.

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