Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: Advanced Engineering Research Project 2

Unit ID: ENGRG9005

Credit Points: 30.00

Prerequisite(s): (ENGRG9004)

Co-requisite(s): Nil

Exclusion(s): (ENGIN5003)

ASCED: 039999

Description of the Unit:
This unit is intended to be taken in sequence with ENGRG9004 and will build upon this unit. Students will continue to develop their knowledge and skills necessary to undertake an advanced engineering research project. In the process, students will employ a combination of hands-on, analytical and computing skills relevant to their field of advanced study. Students will present their findings in front of a peer based audience and will produce a final written thesis or other suitable form of written work.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory						
Intermediate						

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Advanced					✔	

Learning Outcomes:

On successful completion of the unit the students are expected to be able to:

Knowledge:

K1. Plan and lead an engineering research project at an advanced level.

K2. Apply critical and independent thinking to complex research design, investigation and experimentation.

K3. Apply the ethics, norms and concepts that guide engineering (research) practice (including professionalism, innovation and adaptability).

K4. Recognise the importance of continuous professional development and awareness of the current engineering practice.

Skills:

S1. Assess research literature to identify gaps in knowledge and to synthesize information and/or ideas at an advanced level.

S2. Demonstrate an ability to effectively manage time and research resources (independently and/or as a member of a team).

S3. Demonstrate an ability to effectively present engineering research outcomes to others within the engineering profession and the wider community through written and verbal mediums.

S4. Articulate the limitations and uncertainties of research undertaken and formulate recommendations for future research.

Application of knowledge and skills:

A1. Analyze and evaluate engineering research data at an advanced level (appropriate to the discipline or advanced field of research).

A2. Create and defend a major piece of written work through a thesis (commensurate with the discipline and field of research).

Unit Content:

Topics may include:

- Structuring and drafting of a research thesis.
- Producing a research paper out of the thesis work.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K3, S1-S3, A1	Report on the progress of the research project.	Report or logsheet	10-15%
K1-K3, S1-S4, A1, A2	Production of a complete and original written dissertation	Dissertation	70-80%
K1-K3, S1-S4, A1, A2	Oral presentation outlining the research project findings	Presentation to a panel of academics and peers	15-25%

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K3, K4, S3	Completing specific hours of continuous professional development (CPD) relevant to specialised fields of engineering in the form of participating in industry presentations, professional guest lectures, etc.	Participation in required professional development activities and preparation of a report	Hurdle

Adopted Reference Style:

IEEE

Refer to the library website for more information

Fed Cite - referencing tool