

# ENGR 4043 ADVANCED ENGINEERING THESIS 1: PRELIMINARY INVESTIGATIONS

## Credit Points 20

**Coordinator** Kejun Dong ([https://directory.westernsydney.edu.au/search/name/Kejun Dong/](https://directory.westernsydney.edu.au/search/name/Kejun%20Dong/))

**Description** In this subject, advanced students develop the foundations for a year-long, specialist research project within their Major area of study. To begin work on their thesis during the semester students will develop a high-level research proposal by identifying gaps in research literature, designing their research methodology and beginning work on the technical aspects of their project under the supervision of academic or industry mentors as co-supervisors. Advanced students, completing their individual research project, are expected to work with minimal supervision to manage the project and are responsible for solving issues as they arise and communicating their findings at a high level. The thesis will be completed and finalised in "Advanced Engineering Thesis 2: Detailed Investigations". Students completing these 2 associated subjects will develop skills relevant to their future careers as engineers or as a pathway to higher degree studies.

**School** Eng, Design & Built Env

**Discipline** Engineering and Related Technologies, Not Elsewhere Classified.

## Student Contribution Band

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 4 subject

## Restrictions

Students must be enrolled in 3771 Bachelor of Engineering Advanced (Honours) and have completed 220 credit points with a Grade Point Average 5.0 or above.

## Learning Outcomes

After successful completion of this Subject, students will be able to:

1. Evaluate the literature and its relevance to a specific area, which includes identifying the problems to be addressed, and their significance to engineering.
2. Apply engineering principles to analyse key engineering processes.
3. Formulate research problem/ research hypotheses/ research questions with minimal supervision.
4. Create design/ prepare research methodology/ identify data requirements to achieve research objectives.
5. Design major steps in the proposed research and prepare a timeline.
6. Communicate research and/or design work in an ethical and concise manner and in a range of formats reflective of scholarly and engineering professional practice.
7. Reflect on self-assessment and feedback for research and/or design project work.

## Subject Content

1. Project initiation, literature review and problem identification
2. Research methodologies and technical presentation
3. Problem solving and communication skills
4. Project and risk management
5. Engineering ethics

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Participation	1000 words	S/U	N	Individual	Y
Self-Assessment	30 minutes	S/U	N	Individual	Y
Proposal	3000 words	35	N	Individual	Y
Report	6000 words	65	N	Individual	Y

Teaching Periods

## Autumn (2025)

### Penrith (Kingswood)

#### On-site

**Subject Contact** Kejun Dong ([https://directory.westernsydney.edu.au/search/name/Kejun Dong/](https://directory.westernsydney.edu.au/search/name/Kejun%20Dong/))

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=ENGR4043\\_25-AUT\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR4043_25-AUT_KW_1#subjects))

## Spring (2025)

### Penrith (Kingswood)

#### On-site

**Subject Contact** Kejun Dong ([https://directory.westernsydney.edu.au/search/name/Kejun Dong/](https://directory.westernsydney.edu.au/search/name/Kejun%20Dong/))

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=ENGR4043\\_25-SPR\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR4043_25-SPR_KW_1#subjects))