

ENGR 4022 STUDIO: DESIGN SYNTHESIS CAPSTONE

Credit Points 10

Legacy Code 301402

Coordinator James Berry (<https://directory.westernsydney.edu.au/search/name/James Berry/>)

Description This subject engages students in a significant project that synthesises creative thinking, design strategy and practical design skills in preparation to be 'work-ready' as a designer upon graduation. Students will apply the skills that they have acquired throughout their degree in core and specialised elective subjects toward their Design Capstone project. The amalgamation of multidisciplinary viewpoints with industry collaborators throughout the subject ensures a vibrant learning environment, culminating in well resolved design outcomes within a Work Integrated Learning (WIL) Framework with linkages to a real-world challenge.

School Eng, Design & Built Env

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 4 subject

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Critique existing global design trends (within the overarching project theme) in relation to manufacturing, sustainability and entrepreneurial opportunities
2. Develop methods for responding to an advanced design project brief.
3. Apply a range of 2D and 3D design communication skills to propose a design solution to a complex problem or issue
4. Synthesise and apply design process, skills and knowledge to create innovative design solutions in multidisciplinary teams.
5. Present an evidence-based design solution that addresses local, national or global requirements

Subject Content

1. Advanced Integrated Product Design Investigation
2. Applied local and international design standards
3. Advanced iterative design methods incorporating analogue and digital communication
4. Actionable Manufacturing Documentation
5. Sustainable Lifecycle Design
6. Industry and community-centred contextually responsive value proposition
7. Course-length Skills Synthesis
8. Managing creativity and innovation in teams

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
Applied Project	Report - 10 pages, Process - 20 pages, Model - 1:1	30	N	Group/ Individual	N
Applied Project	Process - 20 pages, Engineering Drawings - 10 pages, Model - scale	30	N	Individual	N
Applied Project	Model - 1:1, Posters - 2 x A2	40	N	Individual	N

Prescribed Texts

- Ulrich, KT, Eppinger, SD & Yang, MC 2020, *Product design and development*, 7th edn, McGraw-Hill Education, New York, NY.

Teaching Periods

Spring (2025)

Parramatta City - Macquarie St

On-site

Subject Contact James Berry (<https://directory.westernsydney.edu.au/search/name/James Berry/>)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR4022_25-SPR_PC_1#subjects)