COURSE OUTLINE

ENG401 Engineering Project 1

School: School of Science, Technology and Engineering

2023 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

The final year project represents the capstone and culmination of your four-year engineering degree. It allows you to demonstrate that you can put engineering theory into practice and operate at a professional level. The overall aim of this course is to provide you with the opportunity to demonstrate proficiency in engineering research and design. This will be done through an approved research or design project and the production of a report that clearly presents the results in such a way as to allow repetition of the work by others.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Information session – Online session (project kick-off).	2hrs	Week 1	Once Only
Information session – Online sessions to be held in week 5 and week 9	1hr	Week 5	2 times
Independent Study/Research – Independent work is expected every week. Hours/duration will depend on the individual project. Minimum expected hours is 10 hours per week. Students need to complete tasks on campus or in the field as required by their projects. Students will regularly meet with their supervisors on campus.	10hrs	Week 1	13 times

1.3. Course Topics

Planning and execution of final year engineering project
Conducting of research relevant to the engineering discipline
Roles and responsibilities in an engineering project
Collaborative work with an Advisor and project team
Communication of project information in various forms

2. What level is this course?

400 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING *
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Engineers Australia Stage 1 Professional Engineer Competency Standards
1 Apply the Engineering Process to conduct an engineering project.	Empowered	1, 2
2 Challenge engineering practice and contribute to new developments in your engineering discipline.	Empowered Engaged	1, 2
3 Define a problem and formulate a problem statement.	Empowered	1, 2, 3
4 Review, engage and challenge the (research) literature in a specialist domain / an engineering discipline.	Ethical Engaged	1, 2, 3
5 Develop and design concepts, solutions and procedures in your engineering discipline.	Creative and critical thinker Engaged	1, 2
6 Test and evaluate your concepts, solutions and procedures to reach informed decisions.	Empowered Sustainability-focussed	1, 2
7 Reflect on and evaluate the project impacts for the community (e.g. engineering discipline) and environment.	Ethical Sustainability-focussed	2, 3
8 Manage your project incl. planning, organising and managing resources and prioritising competing demands.	Empowered Engaged	2, 3
9 Communicate about your project, its development and outcomes to a professional audience in several media.	Engaged	3
10 Work collaboratively in a project team.	Engaged	3

* Competencies by Professional Body

CODE	COMPETENCY
ENGINEERS AUSTRALIA STAGE 1 PROFESSIONAL ENGINEER COMPETENCY STANDARDS	
1	Elements of competency: Knowledge and Skill Base
2	Elements of competency: Engineering Application Ability
3	Elements of competency: Professional and Personal Attributes

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1. Pre-requisites

MEC221 or ELC200, and 228 units completed and enrolled in Programs SC404, SC405, SC410, SC411 or SC425

5.2. Co-requisites

ENG302 and, ENG403 or ENG304

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Limited Grading (PNP)

Pass (PU), Fail (UF). All assessment tasks are required to be passed for successful completion of the course.

6.2. Details of early feedback on progress

You will receive feedback on your Project proposal (due in Week 2) from your Advisor(s).

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Written Piece	Individual or Group	Up to 100 words.	Refer to Format	To be Negotiated
All	2	Written Piece	Individual or Group	Up to 500 words.	Week 3	Online Assignment Submission with plagiarism check
All	3	Written Piece	Individual or Group	Up to 1000 words.	Week 7	Online Submission
All	4	Report	Individual or Group	Up to 5000 words (Refer to Format).	Week 11	Online Assignment Submission with plagiarism check
All	5	Portfolio	Individual or Group	Up to 5000 words (Refer to Format).	Week 13	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Project Registration

GOAL:	You provide a written notice to register your final year project accurately and clearly stating your project title, Academic Advisor(s) and, if applicable, Industry Advisor(s).
PRODUCT:	Written Piece
FORMAT:	The project registration is emailed to the Course Coordinator, providing key details about your project such as (mandatory information): - Project title, - Academic Advisor(s) with evidence of Advisor's consent provided; and - Industry Advisor(s) (if applicable). Submission instructions: - One submission per individual or group. - Email to the Course Coordination with the Academic Advisor cc'ed in the correspondence. - Submit prior to Week 1.
CRITERIA:	**No.** / **Learning Outcome assessed** 1 Registration compliant with ENG401 requirements — 9
GENERIC SKILLS:	Communication

All - Assessment Task 2: Project Proposal

GOAL:	You provide the written outline of your final year project presenting its topic, including a problem statement, and the identifications and assessments of the risks associated with your project.
PRODUCT:	Written Piece
FORMAT:	The project proposal provides key information about your project. In no more than 500 words, it details topic of your project. It also provides essential information about the project background, planned actions to 'solve' the problem, and the expected outcomes and benefits to the engineering community. Instructions for submission are provided on Canvas, incl. mandatory content.
CRITERIA:	**No.** / **Learning Outcome assessed** 1 Quality of written piece pertinent to the engineering discipline, — 8 9 2 Accuracy, reliability, and authenticity of information, — 9 3 Appropriateness of project proposal, objectives, and methodology — 3 4
GENERIC SKILLS:	Communication

All - Assessment Task 3: Research plan

GOAL:	You provide the Research plan of your project. You formulate your research/project 'problem', justify the research/project and prepare a plan to undertake the research/project that is required to address the 'problem'.
PRODUCT:	Written Piece
FORMAT:	The research plan is the blueprint for your project. The process of planning requires you to focus your thoughts, to decide not only what you may wish to do, but also what is realistic, given the constraints of your work and life. Your research plan outlines: • your aims and objectives; • your justification for doing the work (established by a focused Review of the Literature); • how and when you intend to do it; • the resources you will need; • what you expect to produce as a result of having completed the work (benefits to the engineering discipline); and • your risk analysis (SWOT) and management strategy. Instructions for submission are provided on Canvas, incl. mandatory content.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Quality of written piece pertinent to the engineering discipline, — 3 9 2 Accuracy, reliability, and authenticity of information, — 4 3 Appropriateness of the Research Plan, objectives, and methodology. — 3 8
GENERIC SKILLS:	Communication, Organisation

All - Assessment Task 4: Intermediary project report (draft)

GOAL:	You provide a written account of your final year project, presenting your progress to date in particular you provide a comprehensive literature review relevant to your research.
PRODUCT:	Report
FORMAT:	The Intermediary project report (draft) is a professional engineering report that shall be concisely worded, well-organised, and understandable to any engineers in the relevant field. It is an opportunity to receive feedback on your report in preparation for the submission of your Project portfolio in Week 13. Structure and format: With a length of max. 5000 words, your report adheres to the conventions of engineering reports, noting the word count includes Sections of previous Task(s) (for groups, larger word limits can be negotiated with your principal Academic Advisor and the Course Coordinator). Instructions for submission are provided on Canvas, incl. mandatory content.

CRITERIA:

No.		Learning Outcome assessed
1	Application of advanced knowledge and skills	1
2	Evaluation and consolidation of knowledge through literature review practices about a complex engineering problem and with intellectual independence.	2 4 5 6
3	Identification of factors likely to influence engineering project outcomes	7
4	Preparation of high quality written documents pertinent to the engineering discipline	9
5	Organisation, presentation, and communication of project	9
6	Appropriate format and use of report structure, grammar and syntax, referencing	9
7	If you are in a group, you are awarded an individual grade for this task. Your grade may be determined by an algorithm that uses the reviewers' marks, and/or peer ratings from your group. Furthermore, a benchmarking approach may be used and an inte	10

GENERIC SKILLS:	Communication, Problem solving

All - Assessment Task 5: Project portfolio

GOAL:	You provide a written account that demonstrates the implementation of your project proposal and critically reflect on this implementation and your progress, also reflecting on the roles and responsibilities in your project.
PRODUCT:	Portfolio
FORMAT:	Your project portfolio will include the following two parts: Part A - Reflective progress, and Part B - Intermediary project report (final). Part A - Reflective progress Individual (weekly) reflections outlining the progress you and/or your team are making in your project, identifying and quantifying your own contribution if applicable. Consider your progress against your anticipated project activities outlined in Tasks 2 & 3 and the agreed standard. Ongoing feedback received from your project Advisor(s). Week 13 reflection should focus on the contribution made by all team members and how the project is tracking to date. For Groups, a reflection on the Statement of collaboration shall be conducted. Part B - Intermediary project report (final) The Intermediary project report (final) is a professional engineering report that shall be concisely worded, well-organised, and understandable to any engineers in the relevant field. It incorporates the feedback received for your Draft report. Your report presents and details your work toward your solution(s), confirms the problem statement or scope (referring to Task 3) and presents a close-to-complete literature review. Structure and format: Your With a length of max. 5000 words, your report adheres to the conventions of engineering reports, noting word count includes Sections of previous Task(s) (for groups, larger word limits can be negotiated with your principal Academic Advisor and the Course Coordinator). Instructions for submission are provided on Canvas, incl. mandatory content.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 — Critical self-review and performance evaluation in tracking personal development, project progress and achievement — 9 2 — Application of critical principles of project management — 8 3 — Management of time and prioritisation of competing project demands — 8 4 — Organisation, presentation, and communication of project information — 8 9
GENERIC SKILLS:	Communication, Problem solving, Organisation

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

> There are no required/recommended resources for this course.

8.2. Specific requirements

You will be required to discuss with your Advisor(s) any specific requirements and needs, e.g. laboratory equipment, software, that you believe your project may have.

9. How are risks managed in this course?

Risk assessments have been performed for all studio and laboratory classes and a low level of health and safety risk exists. Some risk concerns may include equipment, instruments, and tools; as well as manual handling items within the laboratory. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Limited Graded Course:
This course will be graded as Pass in a Limited Grade Course (PU) or Fail in a Limited Grade Course (UF) as per clause 4.1.3 and 4.1.4 of the Grades and Grade Point Average (GPA) - Institutional Operating Policy of the USC.
In a course eligible to use Limited Grades, all assessment items in that course are marked on a Pass/Fail basis and all assessment tasks are required to be passed for a student to successfully complete the course. Supplementary assessment is not available in courses using Limited Grades.

10.3. Assessment: Submission penalties

You must contact your Course Coordinator and provide the required documentation if you require an extension.

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: 07 5430 1168 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call 07 5430 1226 or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au