

AU Course Outline Template

College of Engineering

PETR290 – Project PBL 1

PETR02

Diploma of Petroleum Engineering

- Prerequisites: None
- Co-Requisites: None
- Credit Hours: 1 credit
- Course Coordinator: Dr. Suad Al Radhwan
- Instructors' Names: Dr. Suad Al Radhwan
- Instructors' Office Hours: Monday (14:00 – 15:30) and Tuesday (12:30 – 14:00)
- Instructors' Office Location: B2 – S17
- Instructors' telephone extension: 4202
- Instructors' email addresses:
 - Dr. Suad Al Radhwan: s.alradhwan@au.edu.kw
- Classroom Location and timings¹: As per EduGate (On-Campus)

This course is part of the mentioned above program which is accredited by Engineers Australia.

Course Objectives and Student Learning Course Description

This is a project-based learning (PBL) course during which the students work in groups under the supervision of one or more academic staff to Conceive, Design, Implement and Operate (CDIO) a solution to a petroleum engineering problem. This course allows students to exercise daily engineering ethics and work practices such as professional documentation, meetings, communication styles, etc. The students are required to present their final solution in the form of technical report, presentation and a functional prototype.

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Course Objectives and Student Learning Outcomes

LO1	Recall required engineering and sustainability principles to solve well-defined real-world engineering project
LO2	Analyze well-defined project specifications to breakdown project tasks (analysis and breakdown)
LO3	Design and develop a solution that is compliant with the required standards and practices
LO4	Iteratively evaluate and optimize solutions to improve efficiency and compliance through reflection
LO5	Practice project management, communication and teamwork skills effectively

Engineers Australia Stage 1 Competencies

Achieving the student learning outcomes of this course partially fulfills the following EA Stage 1 Competencies for engineering associate.

Knowledge and Skills	1.1 Descriptive, formula-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the practice area.
	1.2 Procedural-level understanding of mathematics, numerical analysis, statistics, and computer and information sciences which underpin the practice area.
	1.3 In-depth practical knowledge and skills within specialist sub-disciplines of the practice area.
	1.4 Discernment of engineering developments within the practice area.
	1.5 Knowledge of engineering design practice and contextual factors impacting the practice area.
	1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the area of practice.
Engineering Application Ability	2.1 Application of established technical and practical methods to the solution of well-defined engineering problems.
	2.2 Application of technical and practical techniques, tools and resources to well-defined engineering problems.

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Professional and Personal Attributes	2.3 Application of systematic synthesis and design processes to well-defined engineering problems.
	2.4 Application of systematic project management processes.
	3.1 Ethical conduct and professional accountability.
	3.2 Effective oral and written communication in professional and lay domains.
	3.3 Creative, innovative and pro-active demeanor.
	3.4 Professional use and management of information.
	3.5 Orderly management of self, and professional conduct.
	3.6 Effective team membership and team leadership.

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Course Content

The course material will be delivered to the student as a mix of power point presentation, handwritten notes and handouts.

Below are the topics that will be covered during this course. Please note that topics are tentative to change.

Week	Topics	Resources	Learning Outcomes /Performance Criteria
1	- Introduction to the course (outline) - Formation of groups and Teams Project statement & Description - Referencing / Citation style		
2	Introduction to Sustainable Development and goals	Ch. 1, 2	1
3	A Local Case Study on Sustainable Development	Ch. 3	1
4	Sustainable Manufacturing	Ch. 4	2
5	Communication (Emails, Agendas, MoM) Literature Review and study	Handouts / Online search	1-3
6	Literature review and Critical review Progress review presentations	Handouts / Online search	1-3
7	Progress report or presentation	Handouts / Online search	2,3
8	Simulation or project design Progress review presentations	Handouts / Online search	4
8	Midterm assessment (30%)		1-4
9	Overall review of progress Project work	Handouts / Online search	3,4

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10	Process simulation or process design Project work	Handouts / Online search	3-5
11	Project work Report submission preparation	Handouts / Online search	1-5
13-14	Final report submission (April 24, 2025) and assessment (60%)		1-5

Methods of Delivery

This course will be delivered face-to-face. Students are expected to attend designated live sessions on campus. Any updates about the delivery method will be communicated to the students via the official communication platforms. PETR290 will be delivered as a Project Based Learning (PBL) course, which is briefly described as follows:

A project description is provided at the beginning of the semester.

- Students will be divided into groups. Group members are expected to collaborate closely during the semester to design and implement a solution(s) for the project(s).
- Students are expected to carry out teamwork during the scheduled class sessions. Students receive feedback (formative assessment) on their work and progress during class sessions.
- Students are the main responsible party for all activities, including learning, project management, design, implementation, testing, and documentation. Students must become self-dependent and provide solutions to the challenges related to the project and group affairs.
- Students may consult third-party experts and resources that could assist them in achieving their course objectives. However, references to such consultations with experts or resources must be documented inside their workbooks/individual reports, meeting agendas, and minutes.
- Outsourcing, including work carried out by practitioners, will not be accepted and will lead to a zero mark on the assessment(s). The final submission must be the outcome of the student's efforts only. A good command of all aspects of the project must demonstrate this.
- Students must avoid consulting their instructor before exhausting all necessary efforts to learn and resolve any project-related issue. The instructor of a PBL course is a facilitator who guides groups mainly through feedback. He must not be treated as an expert consultant in the first instance.
- Students must document their meetings in meeting agendas and minutes and continuously reflect on their learning. Meeting minutes must be submitted via EduLearn by all students.
- Students' work must be documented in their workbooks/individual reports. For on-campus classes, the students must bring their workbooks to all PBL sessions. The facilitator may check workbooks/individual reports for feedback and progress tracking at any PBL session.
- The students must also submit deliverables as specified by their facilitator before the allocated deadlines. All deliverables are submitted via eduLearn unless announced otherwise by the facilitator.

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Extent and Nature of Use of Technology

All the lectures' slides and other learning material for this course are available online on the PETR290 webpage on Edu Learn. Students are required to visit this page regularly to check for any updates.

Course related announcements are sent by email. Students are required to check their email daily.

Attendance

The student is required to attend designated live sessions on campus. A student who fails to do so will be marked as absent from that class.

Please refer to the AU Student Attendance Policy and Procedure on the [AU portal](#).

Submission of Work

All student submissions must be free of plagiarism. AU has zero tolerance for Academic Dishonesty and is committed to dealing with all incidents promptly, effectively, and with the principles of procedural fairness. Please refer to the AU Policies and Procedures on the AU portal.

All assigned work must be presented and submitted professionally on the nominated due dates.

Late submission affects the assessment grade as follows:

- a) Late submission by up to three calendar days will reduce the grade for the assessment item by -10% per day of late submission.
- b) Submissions of more than three days will not be considered for evaluation, and the grade for the assessment item will be 0%.

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Final report submission date is April 24, 2025.

Please refer to the AU Code of Academic Integrity on the [AU Portal](#).

Assessment Plan

The following table evaluates the student's work and performance throughout the semester. In addition to the summative assessments below, the student's work is assessed during the semester through formative assessments (i.e., feedback) based on the student's progress, which is documented in their workbook/individual reports and other deliverables.

Assessment No. and title	Method of Assessment	Learning Outcomes	Week	Weight
Assessment 1. Midterm Exam	Progress report / Presentation / Viva Voce	LO 1-2	7, 8	30%
Assessment 2. Attendance/Participation	Continuous Assessment	NA	1-14	10%
Assessment 3. Final Exam	Report / Presentation / Viva Voce / Lab performance	LO 1-5	13, 14	60%

Students will receive feedback regularly throughout the semester during class sessions, and they are expected to take such feedback seriously and consider it for following work and learning activities.

Students must refer to the AU Student Assessment Policy on the [AU Portal](#) concerning assessments and re-assessment.

Grading Scale

Please refer to the AU Grading Policy on the [AU Portal](#).