Course Outline – Spring 2025

Department: Petroleum Engineering Department
PETR201 / Environmental Control in Petroleum Industry
PETR 22
Diploma of Technology in Petroleum Engineering

- Prerequisites: PETR200
- Co-Requisites: NA
- Credit Hours: 3
- Course Coordinator:
- Instructors' Names:
  Instructors' Office Hours:
- Instructors' Office Location:
- Instructors' telephone extension:
- Instructors' email addresses:
- Classroom Location and timings[1]: As per EduGate (On-Campus)

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

Catalog Description

The aim of this course is to introduce students to environmental issues facing the Petroleum Industry. The course covers key concepts of various aspects of drilling and production operations and specific impacts associated with them. The course will also present ways to plan and manage activities that minimize or eliminate potential environmental impacts without severely disrupting operations. Concepts of treatment of drilling and production wastes to reduce their toxicity and volume before disposal will be discussed. All these concepts will further be utilized to understand available technologies for remediating contaminated sites with petroleum wastes.

[1] Classroom timings and location are tentative, please refer to EduGate for the up to date information.

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Course Objectives and Student Learning Outcomes

Upon completion of this course, students should be able to:

- ***LO1*** *Acquire a thorough understanding of the principles of Environmental Sustainability with an emphasis on the importance of applying the Sustainable Development Goals (SDGs) globally.*
- ***LO2*** *Analyze the effect of population growth, greenhouse gases and various sources of environmental pollution in petroleum industry.*
- ***LO3*** *Explore the gaseous and particulate matters pollutions on air and evaluate the different methods of air pollution control and its application in the petroleum industry.*
- ***LO4*** *Recognize the different sources of water pollution and demonstrate the ability of selecting the right treatment technology.*
- ***LO5*** *Understand the oil spills and its impact and develop the cleanup methods*
- ***LO6*** *Apply methods and techniques for solid waste management*

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Course Content

Below are the topics that will be covered during this course[2]. Please note that the topics are tentative to change.

Week	Topic	Resources required	Learning Outcome
1	Introduction to Environmental Sustainability and Sustainable Development Goals (SDG)	**PPT 1**	**LO1**
2	Environmental Problems in Petroleum Industry	**PPT 2**	**LO2**
3	Air Pollution	**PPT 3**	**LO3**
4	**Quiz 1 (5%)**	**PPT 1, 2**	**LO 1, 2**
5	Air Pollution Control	**PPT3**	**LO3**
6	Water Pollution	**PPT 4**	**LO 4**
7	Water Pollution Control	**PPT 4**	**LO 4**
	Midterm Exam Period (25%)	**PPT 3-4**	**LO 3-4**
9, 10	Oil Spills and its impact	**PPT 5**	**LO 5**
11	Oil Recovery and Clean Up Techniques	**PPT 6**	**LO 5**
12, 13	Solid Waste Management	**PPT 7**	**LO 6**
14	**Assignment (20%)**	**PPT 1-7**	**LO 1-6**
	Final Exam (40 %)	**PPT 1-7**	**LO1-6**

Methods of Delivery

Classroom-Based delivery. Lecture notes will be uploaded on EduLearn. Ungraded Homework will be uploaded for students on EduLearn.

Any updates about the method of delivery will be communicated with the students via the official communication platforms.

Extent and Nature of Use of Technology

All the lectures' slides, lab manual and other learning material for this course are available online on the PETR201 webpage on EduLearn. Students are required to visit this page regularly to check for any update.
Course related announcements are sent by email. Students are required to check their email daily.

[2] For the Summer Sessions, number of lectures per week is doubled and number of weeks is halved.

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Textbook/s

For this course, the following textbook will be used:

1. Environmental Science, 14th edition by G.Taylor and Scott E. Spoolman.
2. The Basics of Oil Spill Cleanup, 2nd Edition by Merv Fingas, CRC Press.

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.

As per AU Student Code of Conduct Policy, students should not engage in conduct that disrupts class. Late students are required to enter class quietly. The use of cell phones or other electronic devices for voice or text communication is not allowed. Failing to do so is considered as a violation of the AU student code of conduct and may lead to disciplinary actions.

Submission of Work

All assigned lab reports are to be presented and submitted in a professional manner on the nominated due dates. No late submission will be accepted.

Please refer to the AU Code of Academic Integrity on the AU Portal.

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Assessment Plan

The assessments dates are subject to change according to the material coverage pace.

#	Assessment Title	Method of Assessment	Learning Outcomes Covered	Week	Weight
1	Assessment 1	Quiz	1-2	4	5%
2	Midterm	Written Exam	3-4	Midterm Exams Period	25%
3	Assessment 3	Assignment & Relevant Submissions*	1-6	14	20%
4	Attendance/Participation	In Class Participation/Attendance	NA	1 -14	10%
5	Final Exam	Written Exam	1-6	Final Exam Period	40%

A student who misses a quiz will not be eligible for a makeup quiz and will be awarded a zero mark for that particular quiz.

Students must refer to the AU Student Assessment Policy on the AU Portal with regards to assessments and re-assessment.

Grading Scale

Please refer to the AU Grading Policy on the AU Portal.