



## UNSW Course Outline

# PTRL5003 Well Pressure Testing - 2024

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## General Course Information

**Course Code :** PTRL5003

**Year :** 2024

**Term :** Term 3

**Teaching Period :** T3

**Is a multi-term course? :** No

**Faculty :** Faculty of Engineering

**Academic Unit :** School of Minerals & Energy Resources Engineering

**Delivery Mode :** In Person

**Delivery Format :** Standard

**Delivery Location :** Kensington

**Campus :** Sydney

**Study Level :** Postgraduate

**Units of Credit :** 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

This course is designed to provide students with an in-depth understanding of well pressure testing, including the importance of pressure testing, the different methods used to test well pressure, and the interpretation of test results. It will cover the theory of transient well testing,

various aspects of the design and performance of field test instrumentation, different interpretation methods, skin and wellbore storage, multirate tests, pulse testing, pressure buildup tests, and pressure response in heterogeneous reservoirs.

## Course Aims

Building upon knowledge of students on reservoir engineering fundamentals, the aim of this course is to give students insights into different methods of pressure testing and their principles, and enable them to interpret and evaluate results from well pressure testing. The course also aims to develop fundamental research skills for postgraduate coursework students in Petroleum Engineering.

# Course Learning Outcomes

Course Learning Outcomes
CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach
CLO2 : Identify early and late time effects and express different flow regimes
CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for heterogeneous reservoirs
CLO4 : Develop research and communication skills and strategies that would support the Research Project component of the program.
CLO5 : Develop research and communication skills and strategies that would support the Research Project component of the program

Course Learning Outcomes	Assessment Item
CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach	<ul style="list-style-type: none"><li>• Assignment</li><li>• Midterm quiz</li><li>• Research Project</li><li>• Final exam</li></ul>
CLO2 : Identify early and late time effects and express different flow regimes	<ul style="list-style-type: none"><li>• Assignment</li><li>• Midterm quiz</li><li>• Research Project</li><li>• Final exam</li></ul>
CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for heterogeneous reservoirs	<ul style="list-style-type: none"><li>• Assignment</li><li>• Midterm quiz</li><li>• Research Project</li><li>• Final exam</li></ul>
CLO4 : Develop research and communication skills and strategies that would support the Research Project component of the program.	<ul style="list-style-type: none"><li>• Research Project</li></ul>
CLO5 : Develop research and communication skills and strategies that would support the Research Project component of the program	

# Learning and Teaching Technologies

Moodle - Learning Management System

# Assessments

## Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment Assessment Format: Individual	20%	Due Date: Please refer to Moodle for more information.
Midterm quiz Assessment Format: Individual	20%	Due Date: Please refer to Moodle for more information.
Research Project Assessment Format: Group	10%	Due Date: Please refer to Moodle for more information.
Final exam Assessment Format: Individual	50%	Due Date: Please refer to Moodle for more information.

## Assessment Details

### Assignment

#### Assessment Overview

You will be required to complete and submit several assignments covering different topics throughout the course.

Submissions will be marked against assessment criteria and individual written feedback will be provided after the marking is finalised.

#### Course Learning Outcomes

- CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach
- CLO2 : Identify early and late time effects and express different flow regimes
- CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for heterogeneous reservoirs

#### Detailed Assessment Description

Assignments on different chapters of the course.

Please refer to Moodle for more information.

#### Generative AI Permission Level

### No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

## Midterm quiz

### Assessment Overview

The mid-term quiz will cover topics taught in the course (further details will be provided closer to the date of the assessment).

The quiz will be marked against assessment criteria and feedback will be provided after the marking.

### Course Learning Outcomes

- CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach
- CLO2 : Identify early and late time effects and express different flow regimes
- CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for heterogeneous reservoirs

### Detailed Assessment Description

Quiz on 25/Oct at 3PM.

Please refer to Moodle for more information.

### Generative AI Permission Level

#### No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

## Research Project

### Assessment Overview

Completion of Research Project on Well Test Analyses and submission of a final report. The report will be marked against assessment criteria with written feedback.

### Course Learning Outcomes

- CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach
- CLO2 : Identify early and late time effects and express different flow regimes
- CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for

heterogeneous reservoirs

- CLO4 : Develop research and communication skills and strategies that would support the Research Project component of the program.

#### **Detailed Assessment Description**

Research Project to be submitted by 15 November.

Please refer to Moodle for more information.

#### **Generative AI Permission Level**

##### **No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

#### **Final exam**

#### **Assessment Overview**

Final exam will cover the entire content of the course and will be marked against assessment criteria.

#### **Course Learning Outcomes**

- CLO1 : Analyse build-up and draw-down well tests for infinite acting reservoirs using analytical approach
- CLO2 : Identify early and late time effects and express different flow regimes
- CLO3 : Demonstrate understanding of numerical well test reports and interpret well tests for heterogeneous reservoirs

#### **Detailed Assessment Description**

Please refer to Moodle for more information.

#### **Generative AI Permission Level**

##### **No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

# General Assessment Information

## Grading Basis

Standard

# Course Schedule

## Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

## General Schedule Information

Please refer to Moodle for further information on Course Schedule.

# Course Resources

## Recommended Resources

Please refer to Moodle for further information on Course Resources.

# Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Peyman Mostaghimi					No	Yes
	Ahmad Dehghan Khalili					No	No

# Other Useful Information

## Academic Information

### I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's [Special Consideration page](#).

## II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and policies. In particular, students should be familiar with the following:

- [Attendance](#)
- [UNSW Email Address](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

## III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

## IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: <https://www.unsw.edu.au/engineering/student-life/student-resources/program-design>.

*Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.*

## **Academic Honesty and Plagiarism**

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: [student.unsw.edu.au/plagiarism](http://student.unsw.edu.au/plagiarism). The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

[www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf](http://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)

## **Submission of Assessment Tasks**

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be

awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

## **Faculty-specific Information**

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

## **Phone**

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

## **School-specific Information**

### **Course completion**

Course completion requires submission of all assessment items. Failure to submit all assessment items may result in the award of an Unsatisfactory Failure (UF) grade for the course

unless special consideration has been submitted and approved.

## Submission of Assessment Tasks

We encourage you to retain a copy of every assignment submitted for your own record, either in hardcopy or electronic form. All assessments must have an assessment cover sheet attached (if required).

## Student Resources

The School has [student resources](#) section, containing useful advice and information to ensure you're able to focus on your studies.

## Computing Resources and Internet Access Requirements

UNSW Minerals and Energy Resources Engineering provides blended learning using the online Moodle LMS (Learning Management System). Also see - Transitioning to Online Learning:  
<https://www.student.unsw.edu.au/transitioning-online-learning>

Note that some specialist engineering software is not available for Mac computers.

- Mining Engineering Students: OMB G48
- Petroleum Engineering Students: TETB LG34 & LG35

For more information about system requirements is available at [www.student.unsw.edu.au/moodle-system-requirements](https://www.student.unsw.edu.au/moodle-system-requirements)

## Accessing Course Materials Through Moodle

Course outlines, support materials are uploaded to Moodle, the university standard Learning Management System (LMS). In addition, on-line assignment submissions are made using the assignment dropbox facility provided in Moodle. All enrolled students are automatically included in Moodle for each course. To access these documents and other course resources, please visit: [www.moodle.telt.unsw.edu.au](https://www.moodle.telt.unsw.edu.au)

## School Contact Information

School of Minerals and Energy Resources  
Old Main Building, Level 1, 159 (K15)  
UNSW SYDNEY NSW 2052 AUSTRALIA

For current students, all enquiries and assistance relating to enrolment, class registration, progression checks and other administrative matters, please see [The Nucleus: Student Hub](#).

**Web & Important Links:**

[School of Minerals and Energy Resources](#)

[The Nucleus Student Hub](#)

[Moodle](#)

[UNSW Handbook](#)

[UNSW Timetable](#)

[Student Wellbeing](#)

[Urgent Mental Health & Support](#)

[Equitable Learning Services](#)