

Faculty of Engineering

School of Minerals and Energy Resources Engineering

Undergraduate Course Outline

PTRL4020

Natural Gas Engineering

Dr Habib Zughbi

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Course Code:	PTRL4020	Term:	T1 2021	Level:	UG	Units/Credits	6 UOC
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Course Name:

Natural gas is becoming an increasingly important part of Australia's and the world's energy supply. Further, natural gas is put forward as a low emission alternative to other fossil fuels. Finally, the development of technologies to allow the development of unconventional gas resources has further added to the expansion in the supply and demand for natural gas. It is important that Petroleum Engineering graduates understand the technical, economic and social issues at play in the development of natural gas resources.

The technical aspects of natural gas developments are covered throughout the Petroleum Engineering Program as part of other reservoir engineering, geology, drilling and production courses. This course complements these other courses by aiming to:

1. Combine students existing knowledge of fluid flow with a thorough grounding in the analysis and prediction of the PVT behaviour of natural gases through the application of the thermodynamic concepts and equations of state by applying these concepts to selected unit operations,
2. Introduce students to the types of natural gas resources and the economic and social context of their development.

At the conclusion of this course, students should be able to:

1. Apply thermodynamic theory to predict & explain the properties and PVT behaviour of natural gases.
2. Perform preliminary design/analysis calculations for common unit operations in natural gas handling.
3. Critically engage in contemporary debates around the development of the various types of natural gas resources.

2.3. Graduate Attributes

UNSW aspires to develop graduates who are rigorous scholars, capable leaders, profession practitioners and global citizens.

The University has articulated a comprehensive list of Graduate Attributes (GAs) as a set of desired learning outcomes for all UNSW students. The full list, comprising sub-sets of the above four broad areas, may be found here:

<https://my.unsw.edu.au/student/atoz/GraduateAttributes.html>


The core graduate attributes which we develop in Natural Gas Engineering are:

- Scholars who have an understanding of their discipline in its interdisciplinary context (GA 1a)
- Scholars who are able to apply their knowledge and skills to solving problems (GA 1d)
- Scholars who are capable of effective communication (GA 1f)
- Leaders who are collaborative team workers (GA 2c)


Support material for this course including, whenever available, copies of lecture notes, recommended readings, etc. can be found on Moodle.



1.



Study Period	24 Apr – 29 Apr 2021
Exam Period	30 Apr – 13 May 2021



The School has developed a guideline to help you when submitting a course assignment.

We encourage you to retain a copy of every assignment submitted for assessment for your own record either in hardcopy or electronic form.

All assessments must have a assessment cover sheet attached.

The Student Equity and Disabilities Unit (SEADU) aims to provide all students with support and professional advice when circumstances may prevent students from achieving a successful university education. Take a look at their webpage: www.studentequity.unsw.edu.au/

Your lecturer and the University will expect your submitted assignments are truly your own work. UNSW has very clear guidelines on what plagiarism is and how to avoid it. Plagiarism is using the words or ideas of others and presenting them 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. The University has adopted an educative approach to plagiarism and has developed a range of resources to support students. All the details on plagiarism, including some useful resources, can be found at www.student.unsw.edu.au/plagiarism.

All Mining Engineering students are required to complete a student declaration for academic integrity which is outlined in the assignment cover sheets. By signing this declaration, you agree that your work is your own original work.

If you need some additional support with your writing skills, please contact the Learning Centre or view some of the resources on their website: www.lc.unsw.edu.au/. The Learning Centre is designed to help you improve your academic writing and communication skills. Some students use the Centre services because they are finding their assignments a challenge, others because they want to improve an already successful academic performance.

At the end of each course, all students will have the opportunity to complete a course evaluation form. These anonymous surveys help us understand your views of the course, your lecturers and the course materials. We are continuously improving our courses based on student feedback, and your perspective is valuable.

Feedback is given via <https://student.unsw.edu.au/myexperience> and you will be notified when this is available for you to complete.

We also encourage all students to share any feedback they have any time during the course – if you have a concern, please contact us immediately.

Course Convenor: _____
Course Code: _____ Course Title: _____
Assignment: _____
Due Date: _____
Student Name: _____ Student ID: _____

Before submitting this assignment, the student is advised to review:

- the assessment requirements contained in the briefing document for the assignment;
- the various matters related to assessment in the relevant Course Outline; and
- the _____ website at < <http://www.lc.unsw.edu.au/plagiarism/pintro.html> > to ensure they are familiar with the requirements to provide appropriate acknowledgement of source materials.

If after reviewing this material there is any doubt about assessment requirements, then in the first instance the student should consult with the Course Convenor and then if necessary with the Director – Undergraduate Studies.

While students are generally encouraged to work with other students to enhance learning, all assignments submitted for assessment must be their entire own work and duly acknowledge the use of other person's work or material. The student may be required to explain any or all parts of the assignment to the Course Convenor or other authorised persons.