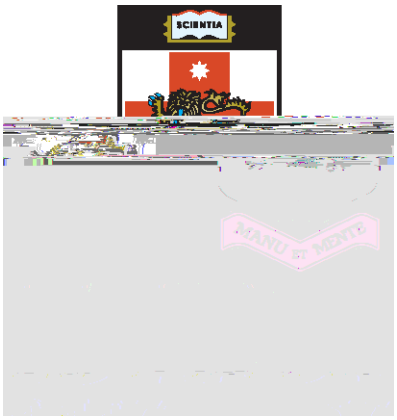

Faculty of Engineering

School of Minerals and Energy Resources Engineering

Undergraduate Course Outline

PTRL2019

Reservoir Engineering A

Dr Peyman Mostaghimi

CONTENTS

1. INFORMATION ABOUT THE COURSE

Course Code:	PTRL2019	Term:	T1, 2020	Level:	UG	Units/Credits	6 UOC
Course Name:	Reservoir Engineering A						

Course Convenor:			
Contact Details	School of Minerals and Energy Resources Engineering TETB 2XX	EMAIL:	peyman@unsw.edu.au
		Phone:	+61 2 9385 XXX
Contact times	Can be found at: http://timetable.unsw.edu.au/2020/PTRL2019.html		

1.1. Course Description

Hydrostatic pressure and geothermal gradients. Porosity-permeability relationships and rock microstructures. Volumetric and initial hydrocarbon volume. Fluid Statics. Fluid flows, laminar and turbulent flows. Boundary layers. Flow in pipes, friction in pipe, Euler and Bernoulli's equation. Angular momentum equation. Steady flow energy equation. Minor losses. Flow over surfaces. Steady state inclined flow and pressure potential. Steady-state radial flow. Flow in series and in parallel. Vertical well model and skin effect.

1.2. Course Completion

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

1.3. Assumed Knowledge

Prerequisite: MATH1231 or MATH1241

1.4. Attendance

To pass this course it is expected that you will attend at least 80% of tutorials and lectures. *If your*

2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

2.1. Course Aims

The aim of this course is to give you an insight in to petroleum reservoirs; to introduce you to important rock and fluid characteristics; and to assist you to answer key questions to reservoir engineers.

2.2. Learning Outcomes

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

1. Understand and apply fundamental theories and concepts to solve many reservoir engineering problems, e.g. initial hydrocarbon in place, basic rock and fluid properties, hydrostatic pressure distribution, water influx and single phase fluid flow.

2. Critically analyse the underlying theories, concepts, assumptions and arguments concerning fluid flow under different reservoir conditions.

3. REFERENCE RESOURCES

3.1. Reference Materials

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

The lecture note may be viewed and downloaded from the UNSW-Moodle http://moodle.telt.unsw.edu.au/.

3.2. Text (if applicable)

Followings are the reccomended books for this course.

Fundamentals of Reservoir Engineering, Dake (1978).
The Practice of Reservoir Engineering, Dake (1994).
Applied Petroleum Reservoir Engineering, Craft and Hawkins (rev. Terry) (1991).

3.3. Other Resources

3.4. Online Resources

There are numerous articles / information sources on reservoir engineering on the web. Many of them are sound, but many are either very lightweight or contain errors. Be very careful in your choice of web sources. Remember, UNSW librarians are usually happy to help you locate articles or make suggestions regarding possible material to help you in your academic work. You can also access basic online help at http://www.library.unsw.edu.au/

3.5. Report Writing Guide

The School has a report writing guide (RWG) available. A copy of this is available on the course moodle site.

4.

4.2. Learning Activities Summary

Study Period 29 Apr

5. COURSE ASSESSMENT

5.1. Assessment Summary

6. ASSESSMENT CRITERIA

The assessment criteria provides a framework for you to assess your own work before formally submitting major assignments to your course convenor. Your course convenor will be using this framework to assess your work and as a way to assess whether you have met the listed learning outcomes and the graduate attributes for your program. We ask that you don't use the assessment criteria guidelines as a checklist, but as a tool to assess the quality of your work. Your course convenor will also be looking at the quality, creativity and the presentation of your written assignment as they review the framework. Rubrics, wherever applicable, will be provided at the time of the assignment release.

7. STUDYING A UG COURSE IN UNSW MINERALS AND ENERGY RESOURCES ENGINEERING

7.1. How We Contact You

At times, the School or your course convenors may need to contact you about your course or your enrolment. Your course convenors

In some instances your final course result may be withheld and not released on the UNSW planned date. This is indicated by a course grade result of either:

WD – which usually indicates you have not completed one or more items of assessment or there is an issue with one or more assignment; or
WC – which indicates you have applied for Special

8. SCHOOL ASSESSMENT COVER SHEET

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

ACADEMIC REQUIREMENTS
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 *Plagiarism and Academic Integrity* 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. *Plagiarism* is using the work of others in whole or part without appropriate acknowledgement within the assignment in the required form. *Collusion* is where another person(s) assists in the preparation of a student's assignment without the consent or knowledge of the Course Convenor.

Plagiarism and *Collusion* are considered as Academic Misconduct and will be dealt with according to University Policy.

STUDENT DECLARATION OF ACADEMIC INTEGRITY
I declare that:

- This assessment item is entirely my own original work, except where I have acknowledged us8 Tm0o(2.04 reW*n