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TEACHING STAFF

Course Coordinator/Lecturer  Nima Gholizadeh Doonechaly
Workstation 210ws06, Level 2, Tyree Energy Technologies Building
n.gholizadehdoonechaly@unsw.edu.au, 61-2-93855191
COURSE INFORMATION

The course aims to help students in the design of typical oil and gas well completion and its impact on reservoir productivity.

The course is divided into seven chapters.

- **Chapter 1** covers the general introduction to well testing, types of well testing, fundamental flow equations and dimensionless variables in describing flow properties.

- **Chapter 2** covers flow in idealized reservoirs, different types of boundary conditions and corresponding idealized flow equations as well flow equations.

- **Chapter 3** covers an introduction to well test interpretation techniques, using semi-Logarithmic analysis, type-curve matching, pressure derivative and pressure testing in realistic reservoirs.

- **Chapter 4** covers the effect of skin factor and wellbore storage on the pressure transient data and corresponding line source solutions, reservoir limit testing and interpretation techniques using semi-Log plot and derivative type-curve matching technique.

- **Chapter 5** covers the drawdown well pressure testing for variable flow rates, corresponding interpretation techniques and pulse testing design and interpretation methodologies.

- **Chapter 6** covers interpretation techniques for pressure build-up test, application of pressure derivative in build-up test analysis and interpretation of build-up test following a variable flow rate.

- **Chapter 7:** covers well test interpretation techniques in heterogeneous reservoirs including fractured reservoir and reservoirs with sealing faults.
ASSESSMENT

Feedback will be given for each component of the assessment other than examinations within 2 weeks.

Submissions: must be made with one file for each assignment, using Moodle and before the deadline.

NOTE: If someone fails in the final exam, he/she will fail the course.

<table>
<thead>
<tr>
<th>Task</th>
<th>Week Due</th>
<th>Marks PG</th>
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<tr>
<td>Assignment -1</td>
<td>End of week 4</td>
<td></td>
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<tr>
<td>Assignment -2</td>
<td>End of week 5</td>
<td></td>
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<tr>
<td>Assignment -3</td>
<td>End of week 6</td>
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<tr>
<td>Assignment -4</td>
<td>End of week 9</td>
<td></td>
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<tr>
<td>Assignment -5</td>
<td>End of week 11</td>
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<tr>
<td><strong>Total Assignment Mark</strong></td>
<td></td>
<td><strong>20</strong></td>
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<tr>
<td><strong>Midterm Exam</strong></td>
<td>17th of September 2015</td>
<td><strong>20</strong></td>
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<tr>
<td><strong>Final Exam</strong></td>
<td></td>
<td><strong>60</strong></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>100</strong></td>
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COURSE SCHEDULE

Ch-1 (1 week): Introduction

Ch-2 (1 week): Flow to a Well in an Idealized Reservoir: Important basic concepts and theory. If you master this chapter you are well on the way to understanding well test interpretation.

Ch-3 (1 week): Introduction to Interpretation Methods.

Ch-4 (1 week): Skin and Wellbore Storage.

Ch-5 (2 weeks): Pressure Drawdown for a Variable Rate Well.

Ch-6 (2 weeks): Pressure Buildup Tests.

Ch-7 (3 weeks): Pressure Response in Heterogeneous Reservoirs.

* The week numbers would change according to Midterm Exam and Public Holidays.
CLASS TIMES AND LOCATIONS

<table>
<thead>
<tr>
<th>Type of Class</th>
<th>Day of Class</th>
<th>Time</th>
<th>Room/Location</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>Thursday</td>
<td>9:00 – 11:00</td>
<td>Electrical Eng G24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(K-G17-G24)</td>
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<tr>
<td>Tutorial</td>
<td>Thursday</td>
<td>11:00 – 12:00</td>
<td>Electrical Eng G24</td>
</tr>
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<td>(K-G17-G24)</td>
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RESOURCES FOR STUDENTS

Textbooks/Recommended Reading

L.P.Dake
Fundamentals of Reservoir Engineering
Elsiever, 1978

John Lee
Well Testing
SPE Text Book Series, 1982

R.C. Earlougher Jr.
Advances in Well Test Analysis
SPE Monograph Volume 5, 1977

It is important that you have access to these texts during the course of your study. These books can be available from the Society of Petroleum Engineers (SPE) on-line bookshop which you can access through the SPE website at www.spe.org. The online SPE bookshop also contains other good books of interest.

Electronic Resources

www.spe.org.
ACADEMIC HONESTY AND PLAGIARISM

According to the UNSW website [www.lc.unsw.edu.au/plagiarism](http://www.lc.unsw.edu.au/plagiarism)

Plagiarism is taking the ideas or words of others and passing them off as your own. Plagiarism is a type of intellectual theft.

Plagiarism happens for a number of reasons—one is because some students decide consciously to gain credit for the work of others. However, most incidents of plagiarism are not a matter of deliberate cheating but of underdeveloped academic skills.

This course will be an important opportunity for you to develop skills in writing and referencing your sources so that you avoid plagiarism. Look at the website above for help, or see the resources available through The Learning Centre.

A standard UNSW statement on plagiarism is given below.

### What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one’s own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person’s assignment without appropriate acknowledgement;
- paraphrasing another person’s work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does not amount to plagiarism.
The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:  
[www.lc.unsw.edu.au/plagiarism](http://www.lc.unsw.edu.au/plagiarism)

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students 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 items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

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**ADMINISTRATIVE MATTERS**

*Expectations of students*

Students are expected to attend all classes including any lectures, tutorials, laboratories, etc., that have been timetabled for the course. Although exceptions may be made for special circumstances, we do expect University commitments to take precedence over regular work activities, holidays etc.

UNSW has rules for computer use, for example: for email and online discussion forums. You will have to agree to them when you first access the UNSW network.

We expect everyone – staff and students – to treat each other with respect.

*Occupational Health and Safety*

Like the wider community, UNSW has strict policies and expectations regarding Occupational Health and Safety. You should read these. They may be accessed on:  
Advice concerning illness or misadventure
If you believe that your performance in one of the assessment components for the course has been significantly affected by illness or other unexpected circumstance, then you should make an application for special consideration as soon as possible after the event by visiting UNSW Student Central. You are also advised to speak to the Course Coordinator. Note that considerations are not granted automatically and usually must be supported by documentation.

Equity and diversity
Students who have a disability which requires adjustment to their teaching or learning environment are encouraged to discuss their study needs either prior to or at the commencement of their course with the Course Coordinator or with the Equity Officer (Disability) in the Equity and Diversity Unit. The Equity Officer can be contacted on: 9385 4734 or at www.equity.unsw.edu.au/disabil.html Issues may include access to materials, signers or note-takers, and the provision of services and additional exam and assessment arrangements. Early notification of requirements for these services is essential to enable any necessary adjustments to be made.