



Faculty of Engineering

**School of Minerals and Energy Resources Engineering**

Postgraduate Course Outline

PTRL6021

Reservoir Characterisation

Prof Christoph Arns



## 1. INFORMATION ABOUT THE COURSE

Course Code:

PTRL6021

Term:

T2, 2020

Level: PG

1. Demonstrate knowledge and skills needed to cross-correlate petrophysical properties.
2. Design and populate continuum 3D grids for the purpose of reservoir simulation using geostatistical interpolation techniques (Kriging) and stochastic simulation.
3. Upscale simulation grids for real and categorical variables.

### 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. Recommended Materials

Followings are the recommended books for this course.

- J.L. Jensen, L.W. Lake, P.W.M. C-1 -2.

-CS0 cs 1 Tf0 TGS3 gsa11 Td<0072Tf-0.003226.0616948163.44

## 4. COURSE CONTENT AND LEARNING ACTIVITIES

### 4.1. Course content

1. Introduction to Reservoir Characterisation
2. Grids and property modelling
3. Basic statistics and data quality control
4. Petrophysical cross-correlations
5. Mapping & contouring / spatial interpolation
6. Geostatistical estimation (Kriging)
7. Stochastic simulation
8. Upscaling

### 4.2. Learning Activities Summary

UNSW Wk	Activity	Content	Presenter
---------	----------	---------	-----------

## 5. COURSE ASSESSMENT

### 5.1. Assessment Summary

Assessment task	Due date / week	Weight	Assessment	Learning outcomes assessed
1	05 June 12 June 19 June 26 June 03 July 10 July 17 July	10%	<b>Quiz 1 – 7</b> Individual online quizzes to reflect on lecture material - infinite repetition allowed minimum pass mark 75	1, 2, 3
2	03 July	10%	<b>Individual assignment</b> Application of basic techniques	1, 2, 3
3	04 August 9:00 am	25%	<b>Major Group Assignment: Final Report</b> (max 6000 words)	1, 2, 3
	06 August	15%	<b>Major Group Assignment: Technical presentations</b> Group presentations of selected major assignment topic (about 30min/group)	1, 2, 3
4	Exam period	40%	<b>Final Exam</b>	1, 2, 3

Assignments related details/submission-box will be available online through Moodle. Access to the Moodle site is via the Moodle icon on the MyUNSW homepage.



#### 7.4. 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](http://www.moodle.telt.unsw.edu.au)

#### 7.5. Assignment Submissions

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 an assessment cover sheet attached.

#### 7.6. Late Submission of an Assignment

Full marks for any of the assignments will be awarded if submitted by the deadline.





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.

