11317
WASM Resource
Geology 112

UNIT OUTLINE
Semester 2 2008
# Table of Contents

INTRODUCTION ............................................................................................................................. 3  
ESSENTIAL ADMINISTRATIVE INFORMATION ....................................................................... 3  
TEACHING STAFF .................................................................................................................... 4  
UNIT COORDINATOR ............................................................................................................... 4  
UNIT SYLLABUS ....................................................................................................................... 5  
LEARNING OUTCOMES ........................................................................................................... 5  
LEARNING ACTIVITIES ........................................................................................................... 5  
STUDENT FEEDBACK .............................................................................................................. 5  
LEARNING RESOURCES ........................................................................................................ 5  
TEXT BOOKS .......................................................................................................................... 6  
  Essential Texts: ..................................................................................................................... 6  
  Recommended Texts: .............................................................................................................. 6  
ASSESSMENT DETAILS .......................................................................................................... 6  
  Assessment Summary ......................................................................................................... 6  
  Assessment 1 – Tests .......................................................................................................... 6  
  Assessment 2 – Quizzes ....................................................................................................... 7  
  Assessment 3 – Practical Map Exercises ......................................................................... 7  
  Assessment 4 – Theory Exam ............................................................................................. 7  
  Assignment Marking ........................................................................................................... 7  
STUDENTS’ RIGHTS AND RESPONSIBILITIES ................................................................... 7  
ADDITIONAL INFORMATION ............................................................................................... 8  
  Deferred and Supplementary Assessment ...................................................................... 8  
  Enrolment and HECS ......................................................................................................... 8  
UNIT STUDY CALENDAR ..................................................................................................... 9
INTRODUCTION

WASM Resource Geology 112 is an introductory unit in geology designed for geologists, mining engineers, extractive metallurgists, mine surveyors, environmental engineers and related disciplines in the mining industry. It is offered in the second semester each year at both the Bentley and Kalgoorlie campuses of the WA School of Mines. It is also possible to take the unit externally, using a combination of web-based lecture and practical material, and occasional visits to either Bentley or Kalgoorlie to carry out practical work.

ESSENTIAL ADMINISTRATIVE INFORMATION

<table>
<thead>
<tr>
<th>Unit Title</th>
<th>WASM Resource Geology 112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Study Package Number</td>
<td>11317</td>
</tr>
<tr>
<td>Unit Coordinator</td>
<td>Alex Nemchin</td>
</tr>
<tr>
<td>Teaching Area</td>
<td>Department of Applied Geology</td>
</tr>
<tr>
<td>Credit Value</td>
<td>12.5</td>
</tr>
<tr>
<td>Mode(s) of study</td>
<td>Internal</td>
</tr>
<tr>
<td>Co-, Pre- and Anti-requisites</td>
<td>11310 (v.4) WASM Geology 111 or any previous version</td>
</tr>
<tr>
<td>Additional requirements</td>
<td>None</td>
</tr>
<tr>
<td>Core Unit status</td>
<td>This is a core unit in a number of WASM courses including Mining Engineering, Minerals Engineering, Extractive Metallurgy, Mining Environmental Engineering, and Mine Surveying, and you may be terminated from these courses of study if you fail it twice.</td>
</tr>
<tr>
<td>Result Type</td>
<td>Grade/Mark</td>
</tr>
<tr>
<td>Ancillary Fees and Charges</td>
<td>This unit has no ancillary fees or charges.</td>
</tr>
<tr>
<td>Unit Website</td>
<td>Unit materials can be accessed from the associated WebCT site via <a href="http://oasis.curtin.edu.au">http://oasis.curtin.edu.au</a></td>
</tr>
<tr>
<td>Faculty or School Website</td>
<td><a href="http://www.geology.curtin.edu.au">www.geology.curtin.edu.au</a></td>
</tr>
</tbody>
</table>
| Tuition Pattern     | Lecture (one hour):
|                     | Practical (two hours):   |
TEACHING STAFF

The lecturers for this unit and their contact details are below:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Alex Nemchin (Bentley)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:nemchina@kalg.curtin.edu.au">nemchina@kalg.curtin.edu.au</a></td>
</tr>
<tr>
<td>Phone</td>
<td>(08) 9266 2445</td>
</tr>
<tr>
<td>Fax</td>
<td>(08) 9266 3153</td>
</tr>
<tr>
<td>Building &amp; Room</td>
<td>312 - 205</td>
</tr>
<tr>
<td>Contact Hours</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Kaul Gena (Kalgoorlie)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:K.Gena@curtin.edu.au">K.Gena@curtin.edu.au</a></td>
</tr>
<tr>
<td>Phone</td>
<td>(08) 9088 6613</td>
</tr>
<tr>
<td>Fax</td>
<td></td>
</tr>
<tr>
<td>Building &amp; Room</td>
<td></td>
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<tr>
<td>Contact Hours</td>
<td></td>
</tr>
</tbody>
</table>

The teaching staff will assist you with your learning and any problems or difficulties you may be experiencing while undertaking this unit. They will also mark your assignments and provide feedback in relation to your progress in this unit.

If you leave a message for a lecturer on email or telephone they will try to respond as soon as possible, but please allow for a response time of up to 5 working days.

UNIT COORDINATOR

Every unit also has a person who is responsible for the overall administration of that unit. This person is the Unit Coordinator. If you cannot contact the person who is teaching you at the time or if you have general administrative queries about this unit, you may wish to contact the Unit Coordinator for this unit.

<table>
<thead>
<tr>
<th>Lecturer</th>
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<tr>
<td>Contact Hours</td>
<td></td>
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</table>
UNIT SYLLABUS


LEARNING OUTCOMES

On successful completion of this unit you will be able to:

1. Identify most common ore minerals.
2. Recognise mineral assemblages from the main types of ore deposits and describe processes responsible for the formation of these assemblages.
3. Suggest exploration techniques applicable to specific geological setting and commodity
4. Make simple reserve calculations
5. Understand geology of water reserves and fossil fuels

LEARNING ACTIVITIES

This unit involves the following learning activities each week:

1. A one-hour lecture provides background information for each topic covered in this unit.
2. A two-hour practical class that complements and reinforces lecture material, involving exercises based on sample description and interpretation or calculations and graphical analysis of other forms of geological data.

STUDENT FEEDBACK

For Semester 1 and Semester 2 eVALUate is open for student feedback in weeks 12-17.

For other study periods see http://evaluate.curtin.edu.au/info/dates.cfm

We welcome your feedback as one way to keep improving this unit. Later this semester, you will be encouraged to give unit feedback through eVALUate, Curtin’s online student feedback system (see http://evaluate.curtin.edu.au). This unit was significantly modified compared to the previous year and we would like to identify any potential problems in both lecture and practical materials.

LEARNING RESOURCES

The following resources will be posted on the WebCT site for this unit:

1. Copy of this unit outline
2. PPT presentation of all lectures (before the lectures)
3. ilectures (after the lectures)
4. All practicals (You must print out these notes before each practical class and bring them with you to the class).
TEXT BOOKS

Essential Texts:
There are no textbooks that you need to purchase in order to complete this unit.

Recommended Texts:


The following books provide useful background reading for the geology course. Most are available in the library:

Clark I F & Cook B J (eds), 1986. Perspectives of the Earth, Australian Academy of Science, Canberra.


Hurlbut, Dana’s Manual of Mineralogy, Wiley-Tappan

Rutley’s Elements of Mineralogy (Revised by C.D. Gribble) Unwin Hyman.

Mason B & Berry L G, Elements of Mineralogy Freeman & Co.

ASSESSMENT DETAILS

Assessment Summary
The assessment for this unit consists of the following items.

<table>
<thead>
<tr>
<th>Assessment Tasks</th>
<th>Worth</th>
<th>Due</th>
<th>Unit Learning Outcome Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical test on ore minerals and ores</td>
<td>20%</td>
<td>Week-7</td>
<td>1, 2,</td>
</tr>
<tr>
<td>Ten 5 min quizzes (during the lectures)</td>
<td>10%</td>
<td>Week-2 through to Week-13</td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Practical map exercises</td>
<td>20%</td>
<td>Week-8 through to 14</td>
<td>3, 4</td>
</tr>
<tr>
<td>Theory Exam</td>
<td>50%</td>
<td>Exam Period</td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Assessment 1 – Test

Worth: 20%
Practical test will be held during the laboratory time of the week 6.
Assessment 2 – Quizzes

Worth: 10%
Ten five minute quizzes will be run during the lectures starting from Week Two. They will each require the application of knowledge presented in the previous week’s lecture to small problems and may also involve some lateral thinking (i.e. the questions will not exactly follow material presented in the lectures).

Assessment 3 – Practical map exercises

Worth: 20%
One question in each of the five paper exercises in Weeks 8-13 will be assessed. These exercises must be submitted to the lecturer for marking at the end of the practical session.

Assessment 4 – Theory Exam

Worth: 30%
Held: Examination period (time and date to be published in the Examination timetable)
A description of the exam paper format will be placed on WebCT in the middle of semester together with an example paper.

Assignment Marking
We will make every effort to return your marked work in the week following submission. However, in some circumstances turnaround could be extended to 2 weeks.

STUDENTS’ RIGHTS AND RESPONSIBILITIES

It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:

- the Student Charter,
- the University’s Guiding Ethical Principles,
- the University’s policy and statements on plagiarism and academic integrity,
- copyright principles and responsibilities,
- the University’s policies on appropriate use of software and computer facilities,
- students’ responsibility to check enrolment,
- deadlines, appeals, and grievance resolution,
- student feedback,
- other policies and procedures
- electronic communication with students

See [www.students.curtin.edu.au/administration/responsibilities.cfm](http://www.students.curtin.edu.au/administration/responsibilities.cfm) for comprehensive information on all of the above.

ADDITIONAL INFORMATION

Deferred and Supplementary Assessment
You might be granted a deferred assessment for this unit if you are unable to complete an assessment task due to documented circumstances outside of your control, or a supplementary assessment when your final grade from the unit is between 45 and 50 and your academic record and personal circumstance warrant a second chance to pass the unit.
Deferred and supplementary exams will be held in Orientation Week of Semester Two 2008

**Enrolment and HECS**

It is your responsibility to ensure that your enrolment is correct - you can check your enrolment through the eStudent option on OASIS, [www.oasis.curtin.edu.au](http://www.oasis.curtin.edu.au), and you can also print off an Enrolment Advice.

You can make requests to have corrections made to your Semester One enrolment up to 31 March. The University will not change records after 31 March. HECS liabilities (where they apply) and your results depend on your 31 March enrolment. Withdrawals made after that date will not reduce your HECS liability.
UNIT STUDY CALENDAR

If you have a printed copy of this document, you may like to tear off this final page and keep the Study Calendar handy as you work through the unit. It only gives the weekly sequence of lectures and practicals because student groups take classes on different days of the week.

**Semester 1 2008**

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Bentley Program (L=lecture, P=practical)</th>
<th>Kalgoorlie Program (L=lecture, P=practical)</th>
<th>ASSESSMENT (B=Bentley K=Kal)</th>
</tr>
</thead>
</table>
| 1.   | 28 Jul to 1 Aug | L: Ore Minerals  
P: Ore minerals | L: Ore Minerals  
P: Ore minerals |                             |
| 2.   | 4-8 Aug | L: Industrial Minerals  
P: Ore minerals | L: Industrial Minerals  
P: Ore minerals | Quiz on Wk 1 (BK) |
| 3.   | 11-15 Aug | L: Ore deposits 1  
P: Ore deposits 1 | L: Ore deposits 1  
P: Ore deposits 1 | Quiz on Wk 2(BK) |
| 4.   | 18-22 Aug | L: Ore deposits 2  
P: Ore deposits 2 | L: Ore deposits 2  
P: Ore deposits 2 | Quiz on Wk 3 (BK) |
| 5.   | 25-29 Aug |                       | Tuition Free Week                          |                             |
| 6.   | 1-5 Sep | L: Ore deposits 3  
P: Ore deposits 3 | L: Ore deposits 3  
P: Ore deposits 3 | Quiz on Wk 4 (BK) |
| 7.   | 8-12 Sep | L: Mineral exploration  
P: Test | L: Mineral exploration  
P: Test | Quiz on Wk 6 (BK) 
Test (BK) |
| 8.   | 15-19 Sep | L: Exploration Geochemistry  
P: Exploration Geochemistry | L: Exploration Geochemistry  
P: Exploration Geochemistry | Quiz on Wk 7 (BK) 
Practical (BK) |
| 9.   | 22-26 Sep | L: Exploration Geophysics  
P: Exploration Geophysics | L: Exploration Geophysics  
P: Exploration Geophysics | Quiz on Wk 8 (BK) 
Practical (BK) |
| 10.  | 29 Sep to-3 Oct |                       | Tuition Free Week                          |                             |
| 11.  | 6-10 Oct | L: Resource estimation  
P: Resource estimation | L: Resource estimation  
P: Resource estimation | Quiz on Wk 9 (BK) 
Practical (BK) |
| 12.  | 13-17 Oct | L: Fossil fuels  
P: Coal structural problem | L: Fossil fuels  
P: Coal structural problem | Quiz on Wk 11 (BK) 
Practical (BK) |
| 13.  | 20-24 Oct | L: Rock mechanics  
P: Rock mechanics | L: Rock mechanics  
P: Rock mechanics | Quiz on Wk 12 (BK) 
Practical (BK) |
| 14.  | 27-31 Oct | L: Hydrogeology  
P: Hydrogeology | L Hydrogeology  
P: Hydrogeology | Practical (BK) |
| 15.  | 3-7 Nov |                       | Study Week                                 |                             |
| 16.  | 10-14 Nov |                       | Examinations                              | Theory Exam                 |
| 17.  | 17-21 Nov |                       | Examinations                              | Theory Exam                 |