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INTRODUCTION

Following on from Geology 101 in semester 1, this unit completes a comprehensive overview of the basic principles and practice of geology. Major topics to be covered in this unit are: structural geology, metamorphism, ore genesis, fossil fuels and palaeontology.

ESSENTIAL ADMINISTRATIVE INFORMATION

<table>
<thead>
<tr>
<th>Unit Title</th>
<th>Geology 102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Study Package Number</td>
<td>07032 (v.5)</td>
</tr>
<tr>
<td>Unit Coordinator</td>
<td>Pete Kinny</td>
</tr>
<tr>
<td>Teaching Area</td>
<td>Department of Applied Geology</td>
</tr>
<tr>
<td>Credit Value</td>
<td>25</td>
</tr>
<tr>
<td>Mode(s) of study</td>
<td>Internal (Bentley)</td>
</tr>
<tr>
<td>Additional requirements</td>
<td>Students need to have a compass/clinometer for practical work, which may be purchased from the Department</td>
</tr>
<tr>
<td>Core Unit status</td>
<td>A core unit in the BSc (Applied Geology) and you may be terminated from this course of study if you fail it twice. A pre-requisite for all second-year and higher level geology units</td>
</tr>
<tr>
<td>Result Type</td>
<td>Grade/Mark</td>
</tr>
<tr>
<td>Ancillary Fees and Charges</td>
<td>The required compass/clinometer retails for approx. $85</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>
<tr>
<td>Tuition Pattern</td>
<td>Lecture 1 (1 hour): Monday 10.00–11.00 Rm 307.103</td>
</tr>
<tr>
<td></td>
<td>Practical 1 (2 hrs): Monday 11.00–13.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Monday 14.00–16.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Monday 16.00–18.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Tuesday 09.00–11.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>Lecture 2 (1 hour): Tuesday 13.00–14.00 Rm 307.103</td>
</tr>
<tr>
<td></td>
<td>Practical 2 (2 hrs): Wednesday 14.00–16.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Friday 10.00–12.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Friday 13.00–15.00 Rm 312.101</td>
</tr>
<tr>
<td></td>
<td>OR Friday 15.00–17.00 Rm 312.101</td>
</tr>
<tr>
<td>Duration</td>
<td>Classes run throughout Semester 1 (12 weeks) as detailed in the unit study calendar</td>
</tr>
</tbody>
</table>
The principal lecturers for this unit and their contact details are below:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Email</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nick Timms</td>
<td><a href="mailto:n.timms@curtin.edu.au">n.timms@curtin.edu.au</a></td>
<td>(08) 9266 4372</td>
<td>(08) 9266 3153</td>
</tr>
<tr>
<td>Pete Kinny</td>
<td><a href="mailto:P.Kinny@curtin.edu.au">P.Kinny@curtin.edu.au</a></td>
<td>(08) 9266 2447</td>
<td>(08) 9266 3153</td>
</tr>
<tr>
<td>Lynne Milne</td>
<td></td>
<td>(08) 9266 7097</td>
<td>(08) 9266 3153</td>
</tr>
</tbody>
</table>

**Contact Hours:**
- Nick prefers to be contacted via email, and checks webCT fairly regularly. Although Nick is often busy with research, he usually makes time to see you in his office. But first you have to get past the grumpy ogre.
- Best means of contact is via email.
- Best means of contact is via email.

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**

Pete Kinny is responsible for the overall administration of this unit and is the Geology First Year Coordinator. If you are unable to contact the person who is teaching you at the time or if you have general administrative queries about this unit, you should contact Pete via email, telephone or in person.
SYLLABUS

From lectures, assignments and reading materials, students will continue to learn the language of geology, and will be introduced to the nature of internal and external planetary processes, past and present. In laboratory classes, students will develop skills in the identification, description and classification of metamorphic rocks, the 3D interpretation of geological structures, use of the compass/clinometer, and the identification and taxonomy of the major invertebrate fossil groups.

LEARNING ACTIVITIES

Lectures are held in a large theatre. Classes commence on the hour, and conclude by ten minutes before the hour. Mobile phones should be switched off for the duration of the class. Students are expected to make their own notes (so bring writing materials) and to compile their own summaries of the lecture content in preparation for exams and for future reference. Some lecture material, e.g. copies of PowerPoint slides, diagrams, animations, etc will be made available on webCT. Attendance at lectures is essential for providing the background information necessary for undertaking the associated practical work.

Practical classes are held in Room 312.101. Classes are tutorial-style, permitting greater interaction and class participation than is possible in lectures. Each class will comprise a number of exercises set out on worksheets which are available on the webCT site. It is your responsibility to download and print out the relevant worksheets and bring them with you to each practical class. Instructors will not supply worksheets to you. Much of the practical work involves the examination of rock, mineral and fossil specimens that cannot be undertaken independently, or at times other than those specified, so regular attendance is essential. Furthermore, some of the practical work will be assessed. A list of the equipment you will need to bring to the practical classes is given on page 6.

LEARNING OUTCOMES

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

1. Describe the various ways in which rocks of the earth’s crust undergo deformation and metamorphism
2. Identify, describe and classify metamorphic rocks and minerals examined in hand-specimen
3. Use a compass and clinometer to measure and record planar and linear rock structures
4. Explain the processes leading to the formation of economic ore and fossil fuel deposits
5. Describe the fossilization process and outline the taxonomy and evolutionary development of the major fossil groups

LEARNING RESOURCES

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

1. Copy of this unit outline
2. Lecture summaries
3. Worksheets for practical classes
4. Additional study aids
TEXT BOOKS

Essential Text
The following is essential reading for this unit and is available for purchase at the bookshop:

Earth: Portrait of a Planet
by Stephen Marshak
Publisher: W.W. Norton & Co.

Earlier editions of the same book are acceptable substitutes.

Recommended Reading
Copies of the textbook and numerous additional basic geology texts are held in the Closed Reserve collection of the T.S. Robertson Library. Titles include: Physical geology by Plummer & McGeary; Geology by Chernicoff, S.; The Dynamic Earth by Skinner & Porter; The Inaccessible Earth by Brown & Mussett. You are also advised to refer to a textbook of palaeontology such as Understanding Fossils by Doyle.

EQUIPMENT

The following equipment should be brought to all practical classes:

- Worksheets downloaded from webCT
- Writing materials, paper, a ruler, protractor, and a scientific pocket calculator with basic trigonometric functions - graphical functions are not required.
- 10x magnification hand lens (as used in Geology 101, available for purchase from the department office)
- Compass-clinometer (available for purchase from the department office)

Lab-coats and safety glasses are not required, however you do need to wear covered shoes – no thongs.
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>Returned</th>
<th>Unit Learning Outcomes Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Test 1</td>
<td>10%</td>
<td>Week 4</td>
<td>Week 6</td>
<td>1</td>
</tr>
<tr>
<td>Practical Test 2</td>
<td>10%</td>
<td>Week 8</td>
<td>Week 9</td>
<td>1, 2</td>
</tr>
<tr>
<td>Assignment</td>
<td>10%</td>
<td>Week 5</td>
<td>Week 8</td>
<td>3</td>
</tr>
<tr>
<td>Labwork/quizzes</td>
<td>30%</td>
<td>Weekly</td>
<td></td>
<td>1, 5</td>
</tr>
<tr>
<td>Theory Exam</td>
<td>40%</td>
<td>Exam Period</td>
<td></td>
<td>1, 4, 5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum Standard to Pass the Unit
The minimum acceptable grade on the theory examinations is 35%
The minimum grade required to pass the unit overall is 50%

Assessment 1 – Practical Tests
Three practical tests will be conducted during semester, assessing the knowledge and skills acquired during the practical lab classes. Details of the formats of individual tests will be given by the lecturer concerned in the week preceding the test. In order to perform well on these tests, regular attendance and completion of exercises assigned in practical classes is essential.

**Worth:** 20% (2 x 10%)

**Held:** During lab class P2 in week 4          **Topic:** structural geology
lab class P1 in week 8          metamorphic rocks

**Returned:** Your lecturers will endeavour to return marked practical tests within 2 weeks.

Assessment 2 – Assignment

**Title:** Geological mapping with a compass: Geological analogue on campus

Details of the task to be provided at a later date.
Worth: 10%

Due: Monday 1st September 2008

Guidelines for Submission:
Assignments are to be handed in to the Assignment Box in Geology Building 312 on time, and accompanied by a signed cover sheet. During semester this box is cleared daily, and all submitted work is date-stamped. Be sure to retain a copy of your assignment as proof of submission. Work handed in late will be accepted at the discretion of the lecturer and will incur a penalty (typically 5 to 10% per day late) unless an extension has been granted by prior arrangement or where unforeseen medical, family or other issues prevent timely submission.

Marking Criteria: Details of the task to be provided at a later date.

Returned: Your lecturer will endeavour to return marked assignments within three weeks of the date of submission.

Assessment 3 – Lab quizzes

A short quiz will be done in each lab in the form of short (~10) multiple choice questions that relate to the lab and/or previous lecture material. Answers will be taken in during the lab. A random selection of quizzes will be used for assessment purposes.

Worth: 30% (3 x 10%)

Held: To be undertaken and completed during practical classes

Marking Criteria: 1 mark will be awarded for each correct answer.

Assessment 4 – Theory Exam

The theory exam will be a centrally-scheduled, 2 hour closed book exam. It will consist of a series of short answer questions / problems, essay questions and may include a multiple choice section. For a guide to the breadth and calibre of the questions that may be asked, refer to previous exam papers for this unit. These are available on-line at: http://library.curtin.edu.au/exampapers/Sci_Eng/Department_of_Applied_Geology/

Worth: 40%

Held: Examination period (time and date to be published in the Examination timetable)

Marking Criteria: To score highly in the theory exam you will need to:
1. Provide comprehensive, factually correct answers to the questions
2. Justify your answers and provide accurate illustrations where requested
3. Have worked hard throughout the semester
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 for comprehensive information on all of the above.

FEEDBACK

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). Recent changes to this unit in response to student feedback through eVALUate include:

1. Reduction in the number of assessment items
2. Marking periods for assignments are now more clearly defined

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 One 2009

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, and you can also print off an Enrolment Advice.

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

### Semester 2 2008

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>TOPIC</th>
<th>Textbook Chapter</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>28 Jul – 22 Aug</td>
<td>Structural geology</td>
<td>11</td>
<td>Lab Test</td>
</tr>
<tr>
<td></td>
<td>25 – 29 Aug</td>
<td>Tuition Free Week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 7</td>
<td>1 – 19 Sep</td>
<td>Metamorphism</td>
<td>8</td>
<td>Assignment due</td>
</tr>
<tr>
<td>8</td>
<td>22 – 26 Sep</td>
<td>Ore Deposits</td>
<td>15</td>
<td>Lab Test</td>
</tr>
<tr>
<td></td>
<td>29 Sep – 3 Oct</td>
<td>Tuition Free Week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>6 – 10 Oct</td>
<td>Fossil Fuels</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>10 -12</td>
<td>13 – 31 Oct</td>
<td>Palaeontology</td>
<td>E, 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 7 Nov</td>
<td>Study Week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 – 21 Nov</td>
<td>Examinations</td>
<td></td>
<td>Theory Exam</td>
</tr>
</tbody>
</table>
ASSIGNMENT COVER SHEET

Student Name: __________________________
Student ID: __________________________
Unit Name: __________________________
Lecturer’s Name: __________________________
Due Date: __________________________
Date Submitted: __________________________

DECLARATION
I have read and understood Curtin’s policy on plagiarism, and, except where indicated, this assignment is my own work and has not been submitted for assessment in another unit or course. I have given appropriate references where ideas have been taken from the published or unpublished work of others, and clearly acknowledge where blocks of text have been taken from other sources.

I have retained a copy of the assignment for my own records.

________________________________________
[Signature of student]

For Lecturer’s Use Only:

Overall Mark: _______ out of a total of _______
Percentage:

Lecturer’s Comments:

Lecturer’s Name: __________________________
Date Returned: __________________________