GEOS125

Earth Dynamics

S2 Day 2016

Dept of Earth and Planetary Sciences

Contents

General Information

Unit convenor and teaching staff
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Credit points
3

Prerequisites

Corequisites

Co-badged status
GEOS125 external

Unit description
Discover how the solid Earth works – investigate the dynamic link between plate tectonics and Earth evolution. This introductory unit is suitable for all students including those wanting to try a natural science. It explores the composition and structure of our planet and the dynamic processes that change our environment. Students become skilled at geoscience techniques that permit detailed study of the Earth, and explore via case studies volcanoes and volcanic hazards, as well as economic geology. The unit provides a strong background in geoscience for further studies in geology, geophysics, geography, museum studies, geomorphology, astronomy and environmental science; and insights into Earth materials and their relationship to the environment for students of economics, physics, archaeology, chemistry, biology, marine science and education. This unit involves eye-opening field trips in tutorial classes around campus and a day trip across the Blue Mountains.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

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

? Understanding of the tools and methods that are used in the geosciences; these are organised in three modules: o Tools of the geoscientist o Hot rocks o Rocks under stress

? Competence in applying geo-scientific principles to understanding the world around you

? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results

? Understanding scientific methodology

? Competence in accessing, using and synthesising appropriate information

? Application of knowledge to solving problems and evaluating ideas and information

? Capacity to present ideas clearly with supporting evidence

Assessment Tasks

Name	Weighting	Due
Weekly quiz	10%	each week
Case Study I: Mt Todd	15%	29/08/2016
Hartley quiz and field notes	5%	week 12
Volcanoes	10%	7/10/2016
Hartley	15%	31/10/2016
Final exam	45%	to be advised

Weekly quiz

Due: **each week**
Weighting: **10%**

Weekly quiz to be taken at the start of each practical revising last weeks lecture

On successful completion you will be able to:

- ? Understanding of the tools and methods that are used in the geosciences; these are

organised in three modules: o Tools of the geoscientist o Hot rocks o Rocks under stress

- ? Understanding scientific methodology

Case Study I: Mt Todd

Due: **29/08/2016**
Weighting: **15%**

Mt. Todd Case study

On successful completion you will be able to:

- ? Competence in applying geo-scientific principles to understanding the world around you
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results
- ? Competence in accessing, using and synthesising appropriate information
- ? Application of knowledge to solving problems and evaluating ideas and information
- ? Capacity to present ideas clearly with supporting evidence

Hartley quiz and field notes

Due: **week 12**
Weighting: **5%**

Hartley quiz and field notes - to be handed in after Hartley field trip

On successful completion you will be able to:

- ? Understanding of the tools and methods that are used in the geosciences; these are organised in three modules: o Tools of the geoscientist o Hot rocks o Rocks under stress
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results

Volcanoes

Due: **7/10/2016**
Weighting: **10%**

Volcanoes assigment

On successful completion you will be able to:

- ? Competence in applying geo-scientific principles to understanding the world around you
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret

the results
- ? Competence in accessing, using and synthesising appropriate information
- ? Capacity to present ideas clearly with supporting evidence

Hartley

Due: **31/10/2016**
Weighting: **15%**

Report for Hartley Case study

On successful completion you will be able to:
- ? Competence in applying geo-scientific principles to understanding the world around you
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results
- ? Competence in accessing, using and synthesising appropriate information
- ? Application of knowledge to solving problems and evaluating ideas and information
- ? Capacity to present ideas clearly with supporting evidence

Final exam

Due: **to be advised**
Weighting: **45%**

Final examination

On successful completion you will be able to:
- ? Understanding of the tools and methods that are used in the geosciences; these are organised in three modules: o Tools of the geoscientist o Hot rocks o Rocks under stress
- ? Understanding scientific methodology
- ? Capacity to present ideas clearly with supporting evidence

Delivery and Resources

Lectures

Practicals

Field trip (on campus and Hartley)

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central. Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/grading/policy.html

Grade Appeal Policy http://mq.edu.au/policy/docs/gradeappeal/policy.html

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the Learning and Teaching Category of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcomes

- ? Competence in accessing, using and synthesising appropriate information
- ? Capacity to present ideas clearly with supporting evidence

Assessment tasks

- Case Study I: Mt Todd
- Volcanoes
- Hartley

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcome

- ? Understanding scientific methodology

Assessment task

- Final exam

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- ? Understanding of the tools and methods that are used in the geosciences; these are organised in three modules: o Tools of the geoscientist o Hot rocks o Rocks under stress
- ? Competence in applying geo-scientific principles to understanding the world around you
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results

Assessment tasks

- Weekly quiz
- Hartley quiz and field notes
- Volcanoes
- Hartley
- Final exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- ? Competence in applying geo-scientific principles to understanding the world around you
- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results
- ? Understanding scientific methodology

- ? Application of knowledge to solving problems and evaluating ideas and information

Assessment tasks

- Case Study I: Mt Todd
- Hartley quiz and field notes
- Volcanoes
- Hartley

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- ? Capacity to employ appropriate geo-scientific tools to solve problems and to interpret the results
- ? Application of knowledge to solving problems and evaluating ideas and information
- ? Capacity to present ideas clearly with supporting evidence

Assessment tasks

- Case Study I: Mt Todd
- Hartley quiz and field notes
- Hartley

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- ? Understanding scientific methodology
- ? Competence in accessing, using and synthesising appropriate information
- ? Capacity to present ideas clearly with supporting evidence

Assessment tasks

- Case Study I: Mt Todd
- Volcanoes
- Hartley

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcome

- ? Competence in accessing, using and synthesising appropriate information