



GEOS226

Introduction to Field Geology

Session 3 Internal 2012

Earth and Planetary Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	5
<u>Unit Schedule</u>	7
<u>Policies and Procedures</u>	7
<u>Graduate Capabilities</u>	8

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General Information

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Credit points

3

Prerequisites

12cp

Corequisites

GEOS112 or GEOS125 or GEOS115 or GEOS126 or GEOS116 or ENVE117 or GEOS117

Co-badged status

Unit description

This is a field based unit with strong emphasis on observation and the development of mapping and generic field skills. Working in small groups students produce local and regional geological maps to reveal past environments and show how these environments change through time. This involves the study of both natural outcrops and coloured air photographs of the region, complemented by computers using state of the art software.

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:

Developed skills in geological mapping, producing maps at a range of scales.

Developed or enhanced skills in rock and fossil identification.

Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).

Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.

Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.

Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

Assessment Tasks

Name	Weighting	Due
<u>Maps and exercises</u>	30%	13/12/12
<u>On-line quizzes</u>	5%	8/12/12
<u>Participation mark</u>	15%	13/12/12
<u>Class test</u>	50%	13/12/12

Maps and exercises

Due: **13/12/12**

Weighting: **30%**

Maps and exercises handed in

On successful completion you will be able to:

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

On-line quizzes

Due: **8/12/12**

Weighting: **5%**

Two on-line quizzes prior to fieldwork

On successful completion you will be able to:

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

Participation mark

Due: **13/12/12**

Weighting: **15%**

Participation mark: Each student will be awarded a mark for their performance.

On successful completion you will be able to:

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

Class test

Due: **13/12/12**

Weighting: **50%**

Class test (theory and practical)

On successful completion you will be able to:

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

Delivery and Resources

Location of the camp

Lake Keepit Sport and Recreation Centre is situated on the eastern shores of Lake Keepit, approximately 20 km north of the Oxley Highway about midway between Tamworth and Gunnedah. The turn off to the camp is adequately sign-posted on the highway between the small townships of Somerton and Carroll.

Payment of Camp Fee

Students are required to complete the cashier form and pay the camp fee of \$415 to the Student Centre cashier by **Friday 16th November**. This fee covers the cost of accommodation, meals and consumables for the duration of the camp. Once you have paid the camp fee, complete the participant form (making a note of your receipt number for the camp fee on the form) and return to the Administration Office, Department of Earth and Planetary Sciences, E7A 507, by **Friday 16th November**.

If you are not currently enrolled for the unit you must also enrol on-line via e-student. If you have enrolled for the course but intend to withdraw you must do so by Friday 16th November 2012, so that your accommodation booking can be cancelled. The university census date for session 3 is 21st December 2012.

Period of Excursion: Saturday 8th to Friday 14th December 2012

Students should arrive in camp on the afternoon of 8th December by 5.00 pm, but preferably earlier to allow time for organisation of accommodation and settling in. The last meal will be

breakfast on 14th December and the camp will terminate by 9.00 am on that day.

Transport

Travel to and from Lake Keepit will be in minibuses organised by the University. No fee is charged to the students for use of these minibuses. The minibuses will depart from the University (Eastern Road, outside E5A) at **9.00 am on Saturday, 8th December**. The minibuses will return to the same location at about 16:00 on Friday 14th December.

Students may use their own vehicles. If you do so, please make sure you take appropriate rests and/or share the driving with others.

What to bring to Camp

Lake Keepit provides bunk-style accommodation, a mess hall, and a large work room for discussion and plotting of data. Cutlery, eating utensils and pillows are provided. Students should bring **sheets, pillowcase, blankets or sleeping bag, towel, toilet gear, including sunscreen lotion, suitable clothing, including long trousers/slacks, broad-brimmed hat, raincoat, sneakers or boots, small backpack, lunch box and water bottle (at least 3 litres) or large camelbak, geological hammer** (buy one only if you plan to continue with geology as we will supply some), **hand lens, pocket knife, field notebook, and plotting instruments** (ruler, protractor, eraser, ordinary and coloured pencils, black fine tip pens, felt marking pens). **A lunch box** will stop your sandwiches from being squashed in your backpack. Swim suits will make life at the camp more enjoyable as the camp has a very nice swimming pool. The weather at Keepit in December can be hot and insects can be a problem outside at night. Gaiters or sock savers are useful as grass seeds may be a problem.

Parking arrangements at the Camp

On arrival at the camp, students will be directed to their respective lodgings by the camp superintendent. A parking lot for visitors' vehicles is located outside the administration office.

Address and phone number

Most students will probably wish to leave the postal address of the camp with parents or friends. It is:

Lake Keepit Sport and Recreation Centre

Fitness Camp Road

Via Gunnedah

NSW 2380

The telephone number for the camp (urgent calls only) is (02) 67697603.

Unit Schedule

Sat. 8th – Fri. 14th December, 2012

Day	Daylight	Evening
Saturday	Drive to Keepit. Buses will stop at Singleton for lunch and Tamworth for supplies.	Introduction and hand out materials; field survival: water, hats, suncream; air photo exercise.
Sunday	Tape and compass	Short lecture on sediments; draw up traverse (scale 1:2000); Mapinfo exercise; talks.
Monday	Tape and compass; trace between creeks	Short lecture on igneous rock classification; complete traverse; determine formations; Mapinfo exercise; talks.
Tuesday	Complete fieldwork for small map	Short lecture on fossils; finish small map; transfer traverse geology to large map; hand-in traverse and small map; talks.
Wednesday	Examine a section at some distance from small map	Short lecture on cross sections and geological histories; work on large map using air photos; complete and hand-in Mapinfo exercise; talks.
Thursday	Finish fieldwork by 12 noon; complete map; hand in equipment; exam; evaluation	Check all equipment is in; relax.
Friday	Clean up camp; drive home. Buses will stop at Singleton for lunch	

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://www.mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://www.mq.edu.au/policy/docs/assessment/policy.html>

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

Special Consideration Policy http://www.mq.edu.au/policy/docs/special_consideration/policy.html

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

Student Support

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at: <http://students.mq.edu.au/support/>.

UniWISE provides:

- Online learning resources and academic skills workshops http://www.mq.edu.au/learning_skills/
- Personal assistance with your learning & study related questions.
- The Learning Help Desk is located in the Library foyer (level 2).
- Online and on-campus orientation events run by Mentors@Macquarie.

Student Services and Support

Students with a disability are encouraged to contact the [Disability Support Unit](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

Details of these services can be accessed at <http://www.student.mq.edu.au/ses/>.

IT Help

If you wish to receive IT help, we would be glad to assist you at <http://informatics.mq.edu.au/help/>.

When using the university's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students and it outlines what can be done.

Graduate Capabilities

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcome

- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

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 outcomes

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

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

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.

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

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.

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

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.

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

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed or enhanced skills in rock and fossil identification.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.

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

- Developed skills in geological mapping, producing maps at a range of scales.
- Developed skills in using a number of computer packages commonly used in industry (Microsoft Excel and Mapinfo).
- Developed skills in using a number of field instruments including a compass and clinometer, GPS, tape, hand lens.
- Developed skills in using and interpreting air photos for location, geomorphic and geological purposes.
- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

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

- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcome

- Enhanced generic skills such as team work, organisational, problem solving and public speaking skills.