



GEOS388

Advanced Geoscience III

S2 Day 2019

Dept of Earth and Environmental Sciences

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General Information

Unit convenor and teaching staff

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Credit points

3

Prerequisites

39cp including GEOS188 and (6cp(D) of GEOS units at 200 level) and (admission to BAdvSc) and permission by special approval

Corequisites

Co-badged status

Unit description

This unit caters for students who are strong in geoscience and who are interested in pursuing a scientific career in geoscience. It aims to encourage outstanding students to reach their full potential by helping them prepare for professional contexts through a research-based internship. This activity will be conducted either in collaboration with a research facility at MQ or an external partner organisation. Students will produce a scientific report, reflect on their overall learning in the program as well as experience through this unit, and give a presentation on their findings. Students will also be encouraged to mentor first year advanced geoscience students, and engage in activities within the broader department as part of their learning through participation in this unit.

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:

1. Plan research, understand the basics behind data collection (having visited a professional facility), and manage a research project in the field of Geoscience.
2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.

3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.
4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.
5. Apply geoscience theory to practical experience as part of undertaking successful research.
6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

General Assessment Information

If you receive [special consideration](#) for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the [policy](#) prior to submitting an application. You can check the supplementary exam information page on FSE101 in iLearn (bit.ly/FSESup) for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Assessment Tasks

Name	Weighting	Hurdle	Due
Intro to professional practice	5%	Yes	Week 3
Annotated Bibliography	10%	Yes	Week 6
Reflective Journal	10%	Yes	Weeks 4, 8, 12
Mentoring	10%	Yes	Week 12
Geoscience research report	50%	Yes	Week 12
Oral Presentation	15%	Yes	Week 13

Intro to professional practice

Due: **Week 3**

Weighting: **5%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

Students will complete an introduction to professional practice and a risk assessment of their placement.

On successful completion you will be able to:

- 1. Plan research, understand the basics behind data collection (having visited a professional facility), and manage a research project in the field of Geoscience.
- 5. Apply geoscience theory to practical experience as part of undertaking successful research.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Annotated Bibliography

Due: **Week 6**

Weighting: **10%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

An annotated bibliography of a research topic or question.

On successful completion you will be able to:

- 2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.

Reflective Journal

Due: **Weeks 4, 8, 12**

Weighting: **10%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

Students will keep of reflective journal of their research and mentoring activity.

On successful completion you will be able to:

- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Mentoring

Due: **Week 12**

Weighting: **10%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

Each student will mentor a GEOS188 student.

On successful completion you will be able to:

- 4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.

Geoscience research report

Due: **Week 12**

Weighting: **50%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

A geoscience research report based on research undertaken with an EPS academic staff member, or a government scientist.

On successful completion you will be able to:

- 1. Plan research, understand the basics behind data collection (having visited a professional facility), and manage a research project in the field of Geoscience.
- 2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.
- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.
- 5. Apply geoscience theory to practical experience as part of undertaking successful research.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Oral Presentation

Due: **Week 13**

Weighting: **15%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

Each student will give a ~15-20 minute long oral presentation of their research work to the academic staff on the unit, and other invited EPS researchers and of course your fellow students.

On successful completion you will be able to:

- 2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Delivery and Resources

There is no textbook for the unit.

The unit also has a WEB site which can be found through the iLearn WEBSITE at <https://ilearn.mq.edu.au/login/MQ/> .

Information for students about access to online units is available at

<https://ilearn.mq.edu.au/login/MQ/>

Referencing

It is important that you understand how to correctly reference the information you do use, as often you will want to legitimately quote material or ideas from other sources. Information obtained from any source, including the internet, is covered by copyright law. You must acknowledge any source that you refer to in your assignment, both within the text of your assignment, and at the end of it (by including a list of references). Referencing your sources also enables the reader to view your sources and follow your essay. Academic conventions and copyright law require that you acknowledge when you use the ideas of others. In most cases, this means stating which book or journal article is the source of an idea or quotation.

There are two aspects to learn: in-text references and a list of references cited. Please note that for the assignments, we insist that you reference using in-text references, with a reference list at the end (ie, not with footnotes). This is a common way to do it in many areas of science (but not all!), and it reminds you and indicates to the reader what the source is and how old it is. Please use the Harvard Style of referencing.

There is much information on in-text references and referencing of print and non-print sources available at:

<http://libguides.mq.edu.au/content.php?pid=459099&sid=3778407>

<http://libguides.mq.edu.au/content.php?pid=459099&sid=3759396>

How to cite references within the text of an assignment:

These are also called in-text references. When you use another's ideas you should immediately acknowledge your sources, including in figure or table captions. Always give the surname of the author and the date of publication. Use the author-date method of citation for quotations and paraphrasing. Note spelling of et al. (used when 3 or more authors; please remember the fullstop). Note that the in text refs don't have author initials.

Direct quote: Brown et al. (1990, p. 12) conclude that 'the depth to the Moho under the oceans is less than under the continents'. Note that for a direct quote the page must be cited.

General acknowledgement of the source of information: "As explained by Schmidt and Lackie (2014), the Q-Meter is....."

More specific reference but not a direct quote: "The distribution of Martian volcanism in the highlands (Johnson, 2011) can be used to infer... etc."

More general reference to sources: "Most older textbooks in geology (e.g. Peters et al., 1941; Stamp 1938) either ignored the deep ocean basin deposition or....."

Website in text: "Details about PhD scholarships are available from the Macquarie University web site <<http://www.hdr.mq.edu.au/>>."

How to create a list of references:

At the end of your assignment, create a list of the references you have cited in the text. Arrange this in alphabetical order of author's surnames. The author's surname is placed first, followed by initials or first name, then other authors the same way, and then the year of publication is given. Where an item doesn't have an author, arrange it by its title.

Then the reference needs the paper or book title, journal (if it's a journal article), publisher (if it's a book) or url and date accessed (if it's a web page). The format should follow the Harvard style as described in these links: it is a good guide, and your references should contain the same information.

Please be very careful (a) to put in the reference list every citation from the text (including web sites) and any figure/table captions, and (b) to not put in the list references that you have not cited in the text or figure/table captions.

Reference examples: journal

Cameron, R.L., Goldich, S.S & Hottman, J.H. 1960. Radioactive age of rocks from the Windmill Islands. Budd Coast, Antarctica. *Stockholm Contributions to Geology* **6**, 1-6.

Goodwin, I.D. 1993. Holocene deglaciation, sea level change and the emergence of the Windmill Islands, Budd Coast, Antarctica. *Quaternary Research* **40**, 70-80.

Sandwell, D.T. & Smith, W.H.F. 1997. Marine gravity anomaly from Geosat and ERS 1 satellite altimetry. *Journal of Geophysical Research*, **102**, No B5. 10,039-10,054.

Reference example: book

Peters, K. E., Walters, C. C. and Moldowan, J. M. (2005) *The Biomarker Guide*, 2nd Edition. Cambridge University Press, Cambridge, 1155 pp.

Reference example: chapters in edited books

Einstein, A.C., Voldemort, T. M., Vader, D., 2012. How to apply evil. In: Devil, M.A. (Ed.), *Handbook of Evil*, Wiley, pp. 47-73.

George, S. C., Volk, H., Ahmed, M., Middleton, H., Allan, T. and Holland, D. (2004) Novel petroleum systems in Papua New Guinea indicated by terpane and methylhopane distributions. In: Boulton, P. J., Johns, D. R. and Lang, S. C. (Eds), *Eastern Australasian Basins Symposium II*, Adelaide, 19–22 September, Petroleum Exploration Society of Australia, Special Publication, pp. 575-588.

Reference example (web site, author and date known):

Wright, S. 2004, Open area test site (OATS) development, undergraduate project, University of Southern Queensland, Toowoomba, viewed 27 March 2011, <<http://eprints.usq.edu.au/archive/>

00000047>.

Reference example (web site, author and date not known):

Macquarie University, NSW, viewed 12 January 2012, <<http://www.hdr.mq.edu.au/>>

Places to Start the Big Search

http://libguides.mq.edu.au/earth_planetary_sciences

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) 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](#) or if you are a Global MBA student contact globalmba.support@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](#)

If you are a Global MBA student contact globalmba.support@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 outcome

- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.

Assessment task

- Geoscience research report

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 outcomes

- 4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Assessment tasks

- Intro to professional practice
- Annotated Bibliography
- Reflective Journal
- Mentoring
- Oral Presentation

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

- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.

Assessment tasks

- Geoscience research report
- Oral Presentation

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

- 1. Plan research, understand the basics behind data collection (having visited a professional facility), and manage a research project in the field of Geoscience.
- 2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.
- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.
- 5. Apply geoscience theory to practical experience as part of undertaking successful research.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Assessment tasks

- Intro to professional practice
- Annotated Bibliography
- Reflective Journal
- Geoscience research report
- Oral Presentation

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 outcome

- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.

Assessment tasks

- Annotated Bibliography
- Reflective Journal
- Geoscience research report

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

- 1. Plan research, understand the basics behind data collection (having visited a professional facility), and manage a research project in the field of Geoscience.
- 2. Communicate matters relevant to Geoscience effectively to colleagues and the public as well as grasp and synthesise information from oral presentations and the literature.
- 3. Write up research results to the level of a scholarly journal article as is expected of a scientific career in geoscience.
- 4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.
- 5. Apply geoscience theory to practical experience as part of undertaking successful research.
- 6. Work effectively within a Geoscience environment and appreciate the role that Geoscience has within the community.

Assessment tasks

- Intro to professional practice
- Annotated Bibliography
- Reflective Journal
- Mentoring
- Geoscience research report

- Oral Presentation

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

- 4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.

Assessment tasks

- Intro to professional practice
- Mentoring

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

- 4. Identify learning achieved through participation, such as the mentoring of other geoscience students in laboratory and literature-based projects.

Assessment tasks

- Intro to professional practice
- Mentoring