



ENVS2237

Natural Hazards, Disasters and their Management

Session 2, Online-scheduled-weekday 2022

School of Natural Sciences

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General Information

Unit convenor and teaching staff

Convenor, Lecturer, Tutor

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12WW, 4.25

By appointment

Tutor

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Credit points

10

Prerequisites

60cp at 1000 level or above

Corequisites

Co-badged status

Unit description

*This unit has an online offering for S2 which is **synchronous**, meaning there will be set times to attend online lectures and tutorials.*

The importance of natural hazards and their impacts is growing as population increases and the world is increasingly overshadowed by a changing climate. Natural hazards include those from the solid earth, such as earthquakes and volcanoes; weather-related impacts from floods, tropical cyclones, drought and bushfires; biohazards; and rarer 'megahazards' such as asteroid impacts. The impacts from natural hazards can cause humanitarian disasters and cost billions of dollars. But what are the most important hazards, and where do the disasters occur? How can we manage and reduce disaster impacts? This unit approaches natural hazards via an understanding of how they occur, what they do and how we can mitigate their impacts. This approach allows future societies to be more resilient to the impacts of natural hazards.

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:

ULO1: Explain concepts of hazard, vulnerability and risk to inform professional, managerial and lay audiences of risk and risk management.

ULO2: Assess the key spatial and temporal patterns and processes by which natural hazards and disasters occur to help understand and quantify risk at any particular location.

ULO3: Describe the physical, economic and social consequences of natural hazards to help understand and quantify vulnerability and risk.

ULO4: Explain critical pathways between natural hazards and their impacts to help understand the complexity of disasters and their management.

ULO5: Demonstrate written communication skills to present relevant material for diverse audiences, including government and community.

General Assessment Information

Assessment Criteria: Assessment at Macquarie University is standards-based, as outlined in the Assessment Policy. This means that your work will be assessed against clear criteria, and these criteria will be made available when the assessment tasks are released to you on iLearn.

Submission of Assessments: (1) The quizzes will be administered through iLearn. (2) Your written essay must be submitted online through Turnitin, using a link on iLearn. (3) Your final examination will be administered by the University during the examination period.

Due dates for all assessment tasks are elsewhere in this unit schedule. If you have commitments that will significantly impact your study during the session then you must plan for this in advance as part of an effective individual study plan.

Marking of Assessments: The quizzes are machine marked. Your written assignments will be marked through Turnitin and feedback will be noted on the assignments. Your assignment grade will be returned using the Grades Report on iLearn. We aim to return your assignments with feedback within 2-3 weeks of the date that you submit your assignment. We appreciate your patience and will advise you through iLearn when your marked assignments and feedback are available for viewing.

Late Assessment Submission Penalty: From 1 July 2022, Students enrolled in Session based units with written assessments will have the following university standard late penalty applied. Please see <https://students.mq.edu.au/study/assessment-exams/assessments> for more information. Unless a Special Consideration request has been submitted and approved, a 5 %

penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is 2355 h. A 1-hour grace period is provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

Assessments where Late Submissions will be accepted: In this unit, late submissions will be accepted as follows: Quizzes – NO, unless Special Consideration is Granted. Written essay – YES, Standard Late Penalty applies.

Assessment Tasks

Name	Weighting	Hurdle	Due
Practical quizzes	40%	No	Weeks 3, 5, 7, 9, 11
Natural hazards and disasters	20%	No	16 Aug
Final examination	40%	No	Exam period

Practical quizzes

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 30 hours

Due: **Weeks 3, 5, 7, 9, 11**

Weighting: **40%**

Quizzes based on the outcomes from the practicals.

On successful completion you will be able to:

- Explain concepts of hazard, vulnerability and risk to inform professional, managerial and lay audiences of risk and risk management.
- Assess the key spatial and temporal patterns and processes by which natural hazards and disasters occur to help understand and quantify risk at any particular location.
- Describe the physical, economic and social consequences of natural hazards to help understand and quantify vulnerability and risk.
- Explain critical pathways between natural hazards and their impacts to help understand the complexity of disasters and their management.

Natural hazards and disasters

Assessment Type ¹: Essay

Indicative Time on Task ²: 20 hours

Due: **16 Aug**

Weighting: **20%**

A written piece linking topical natural hazards with disasters. A range of sub-topics will be offered based on recent world events.

On successful completion you will be able to:

- Explain concepts of hazard, vulnerability and risk to inform professional, managerial and lay audiences of risk and risk management.
- Assess the key spatial and temporal patterns and processes by which natural hazards and disasters occur to help understand and quantify risk at any particular location.
- Describe the physical, economic and social consequences of natural hazards to help understand and quantify vulnerability and risk.
- Explain critical pathways between natural hazards and their impacts to help understand the complexity of disasters and their management.
- Demonstrate written communication skills to present relevant material for diverse audiences, including government and community.

Final examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 30 hours

Due: **Exam period**

Weighting: **40%**

Final examination at a time set by the University timetable

On successful completion you will be able to:

- Explain concepts of hazard, vulnerability and risk to inform professional, managerial and lay audiences of risk and risk management.
- Assess the key spatial and temporal patterns and processes by which natural hazards and disasters occur to help understand and quantify risk at any particular location.

- Describe the physical, economic and social consequences of natural hazards to help understand and quantify vulnerability and risk.
 - Explain critical pathways between natural hazards and their impacts to help understand the complexity of disasters and their management.
 - Demonstrate written communication skills to present relevant material for diverse audiences, including government and community.
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¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Required and Recommended Texts and/or Materials: The textbook set for this unit is archived on the iLearn site because it is now difficult to find. It is; Middelmann, M.H. (Editor) (2007) Natural Hazards in Australia. Identifying Risk Analysis Requirements. Geoscience Australia, Canberra. Any other recommended readings for each week will be noted on the iLearn site.

Technology Used and Required: This unit uses iLearn and associated technology. See the Instructions on how to log in to iLearn and the iLearn quick guides for students which will help you;

- Getting started - Find out how to navigate and familiarise yourself with the iLearn environment,
- Activities - Learn how to effectively complete the activities required of you in iLearn,
- Assessments and Gradebook - Find out how to submit assessments and view your grades using iLearn,
- Online study tips,
- Discussion fora - Explore the different types, and features of discussion fora in iLearn.

Computer-Based Learning: Essential computer-based components of this unit include lectures recorded through Zoom, weekly practical exercises (not all weeks - refer to the unit schedule on iLearn), and online discussion fora for communicating with staff and other students in this unit. You can undertake this work on- or off-campus. If you're unsure of how to connect to the internet or use the computer system, help can be obtained at; <http://students.mq.edu.au/support/>.

Announcements and General Discussion Forum: The "Announcements" and "General Discussion Forum" links on the unit's homepage are used to make unit-wide announcements and discuss important issues related to the unit. You are expected to read every posting to the

discussion forum because important administrative and academic information will be posted there - it is your responsibility to stay up to date.

What is Required to Complete This Unit Satisfactorily? You must receive an aggregate unit mark of at least 50 % to pass this unit. In order to receive a Pass grade, you should spend around 11 h per week on this unit, which includes lectures, practicals, reading and assessment preparation and completion. However, keep in mind, grades are awarded on a demonstration of your understanding and ability, not on time or effort! Lectures provide the framework with which to focus your study of the subject and they are essential for you to engage with. You should supplement them by reading, especially from the text, but also from current journals, which contain the most up-to-date information. All lecture material is assessable in the quizzes or final examination. The iLearn site contains suggested readings, but please don't limit yourself to those. Lectures will be available by the start of the week in which they are scheduled. You should participate in one 2 h practical held in Weeks 2-10 and Week 13, at times stipulated by the timetable. Practical are live online, and are not recorded. Practical consist of tasks that you have to work through individually, but a tutor will be available online throughout the practical to introduce the activity, and to help you work through it. Each student should complete all practical sessions.

Practical contain material to supplement the lectures, or comprise exercises which give you skills to help with your understanding of the unit topics and the workplace. All practical material is assessable in the quizzes or final examination. Practical provide greater depth to related lecture materials and will assist learning by encouraging your active participation. Important material for the practical classes is included on iLearn. Workload will be spread over the session, but may be concentrated around the time assessment tasks are due. It would help if you manage your time effectively throughout the session and work around your other units and commitments. In this unit we expect quality in your assignments and a level of knowledge and comprehension of unit content in the assessment tasks. Grades for each written assessment task and the unit as a whole will be awarded according to a general rubric (table below). The unit content during weeks 1-13 (lectures, practicals, quizzes, written assignment) can be undertaken without you being on campus. We offer this because many of you have demonstrated a need for unit content to be delivered in this way, to help you schedule your studies around other commitments, and we hope that ENV52237 delivered in this way is convenient for you.

Aspect	Developing	Functional	Proficient	Advanced
Grades	Has not yet reached the desired standard. A Fail grade would be given.	Has reached basic academic standards. A Pass grade would be awarded.	Has completely reached the standards expected. A Credit would be awarded.	Has gone beyond the expected standard. A grade of Distinction or High Distinction would be awarded.
Concepts	Limited understanding of required concepts and knowledge.	Can accurately reproduce required facts, but has limited depth of understanding of basic concepts.	Exhibits breadth and depth of understanding. Uses terminology accurately in new contexts and transfers ideas to new situations.	Exhibits breadth and depth of understanding of concepts. Can engage in productive critical reflection.

Aspect	Developing	Functional	Proficient	Advanced
Analysis & Synthesis	Data analysis skills are limited.	Data analysis skills are largely descriptive with limited capacity to combine multiple factors.	Can synthesise data and critique the value and importance of scientific arguments.	Data analysis is sophisticated and is capable of placing examples in context of big ideas, problems and solutions.
Independence	Uses immediately available information without discretion.	Can select useful information. Does not always discriminate between types of sources of information.	Independently selects useful information and can discriminate between types of sources of information.	Independently selects useful information and can critically discriminate between types of sources of information.
Communications	Poor written communication skills (e.g. spelling and grammar). Does not demonstrate an understanding of what is expected in assignment writing and presentation.	Communicates ideas adequately in writing. Adheres to most basic requirements for written work and assignment presentation.	Communicates effectively and clearly in writing. Adheres to all expectations of assignment writing and presentation.	Communicates adeptly in writing. Adheres to all expectations of assignment writing.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.s.mq.edu.au\)](https://policies.s.mq.edu.au). 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/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

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

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

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

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.