



ENVS2237

Natural Hazards, Disasters and their Management

Session 2, In person-scheduled-weekday, North Ryde 2024

School of Natural Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	5
<u>Delivery and Resources</u>	7
<u>Unit Schedule</u>	9
<u>Policies and Procedures</u>	9

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General Information

Unit convenor and teaching staff

Convenor, Lecturer, Tutor

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Credit points

10

Prerequisites

60cp at 1000 level or above

Corequisites

Co-badged status

Unit description

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

Requirements to Pass this Unit: To pass this unit you should attempt and submit all assessments, and must achieve an aggregate mark equal to or greater than 50%.

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

Referencing: Students often ask about preferred referencing style. The University approves five styles (<https://libguides.mq.edu.au/referencing>). I prefer the APA 7th style

(https://libguides.mq.edu.au/APA7_referencing), but any of the five are acceptable. However, ensure you include the Digital Object Identifier (doi) in your reference list.

Use of generative artificial intelligence tools: Many students have experimented with AI tools to write or re-write their text. Read this advice: <https://students.mq.edu.au/study/assessment-exams/academic-integrity/ai-tools> and feel free to refer to the relevant Macquarie University Academic Integrity policy. Please do not use these tools in this unit.

Submission of Assessments: Links to the assessments are provided in iLearn ("Assessments" tab). Do not submit written assessments via email or in hard copy unless requested. Due dates for all assessments are in the unit schedule (iLearn, "Unit information" tab).

1. The quizzes will be administered through iLearn. The quizzes will open on Monday of the given week, at 0000 h, and will close on Friday at 2355 h. You can attempt the quizzes only once during that week. You will have 30 mins to complete the quiz and it will close automatically after that time.
2. The written assessment is due on Friday of Week 6, at 2355 h. The assessment must be submitted through Turnitin, using a link on iLearn under the "Assessments" tab.
3. The final examination will be administered by the University during the formal examination period.

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: Quizzes are machine marked, and answers to the quizzes will not be provided. Written assessments will be marked through Turnitin and feedback will be noted on the assignments. Assessment marks (for each quiz and the written assessment) will be available via the Grades Report on iLearn. We aim to return your written assessment with feedback within three weeks of the date of submission (although our other teaching duties, and late submission by some students) may affect the marked assessment release date. We appreciate your patience and will advise you through iLearn when your marked assessments are available for viewing.

Late Assessment Submission Penalty: Unless a Special Consideration request has been submitted and approved, a 5 % penalty (of the total possible mark of the task) will be applied for each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a mark of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 2355 h. A 1 h grace period will be provided to students who experience technical concerns. In the case of late submission of assessments with justifiable reason, please apply for Special Consideration.

Assessments where Late Submissions will be accepted: In this unit, late submissions will accepted as follows;

- **Quizzes, Final examination** - NO, unless Special Consideration is Granted.

- **Minor written assessment** - YES; Standard Late Penalty applies.

Special Consideration: The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete unit assessments on time, please inform the Unit Convenor and submit a Special Consideration request through ask.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Practical quizzes	40%	No	Weeks 3, 5, 7, 9, 11
Natural hazards and disasters	20%	No	Week 6 (35), Friday 2355 h
Final examination	40%	No	Examination 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: **Week 6 (35), Friday 2355 h**

Weighting: **20%**

A written piece linking topical natural hazards with disasters.

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: **Examination 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.

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: There is no textbook set for this unit. Instead, compulsory readings will be set and released under the weekly tabs on iLearn.

Technology Used and Required: This unit uses iLearn and associated technology.

Computer-Based Learning: Essential computer-based components of this unit include recorded lectures, weekly practical exercises (not all weeks - refer to the unit schedule on iLearn), and online discussion fora for learning and communicating with staff and other students in this unit. You must read these - the content there is assessable. 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 students.mq.edu.au/support/.

Announcements and General Discussion Forum: The "Announcements" and "General Discussion Forum" links on the unit's homepage (under the "Communications" tab) are used to make unit-wide announcements and discuss important issues related to the unit. You are expected to read every posting to the General Discussion Forum because important administrative and academic information will be posted there. Also, material there is assessable. It is your responsibility to stay up to date.

Methods of Communication: We will communicate with you through announcements on iLearn, and possibly also your university email. General queries to the convenor can be placed on the iLearn discussion board; if your query is more specific to you, or you want more privacy, email the unit convenor or other teaching staff directly via their email (see the Unit Guide, or iLearn for these communication details).

What is Required to Complete This Unit Satisfactorily? You must receive an aggregate mark of at least 50% to pass this unit. In order to receive a Pass grade, you should spend around 12 h per week on this unit, which includes lectures, practicals, reading and assessment preparation and completion. However, keep in mind, marks 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 from current journals. All lecture material is assessable in the quizzes, written assignment or final examination. The iLearn site contains compulsory readings related to the unit content, 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 ten 2 h workshops, held at times stipulated by the timetable.

Workshops are live in the classroom, and are not recorded. Workshops consist of tasks that you have to work through individually, but teaching staff will be available to introduce the activity and help you work through it, if you need help. Each student should complete all workshop sessions. These workshops 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 workshop material is assessable in the quizzes or final examination, and you will need the completed workshops with you to complete the quizzes. Workshops provide greater depth to related lecture materials and will assist learning by encouraging your active participation. Important material for the workshops 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. Grades for the written assessment task and the unit as a whole will be awarded according to a general rubric, in the table below.

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.
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.

Week 1 classes: Lectures start in week 1. Workshops start in week 2.

Unit Schedule

Unit schedule: The unit schedule is under the "Unit Information" tab on iLearn.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

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.

Unit information based on version 2024.01R of the [Handbook](#)