# GEOS 2111
# Natural Hazards: a GIS approach

**Unit Guide**
**Semester 1, 2015**


*"Civilisation exists by geological consent – subject to change without notice"*

Durant, W. (1946). "What is civilization?"
*Ladies Home Journal*. January issue

**Unit details**

***Faculty of Science***
School of Geosciences

***GEOS2111: Natural Hazards***
Semester 1, 2015, 6 Credit Points, Coordinator: Associate Professor Dale Dominey-Howes

**1. Introduction**
It is clear from an analysis of the contents of the broad-sheet press, radio and television news broadcasts, that the occurrence and impacts of natural hazards and their accompanying disasters, appear to be increasing in both frequency and severity. It is germane therefore, to enquire whether this is actually the case. GEOS2111 Natural Hazards examines the nature, causes, impacts and effects of some of the most significant natural hazards. The unit assumes no prior knowledge (although it does build on Junior units of study available from Geosciences). What you will gain from this unit will depend on your interests, experience, motivation and of-course, your effort. However, it is hoped that you will develop a new perspective on events that directly and indirectly affect so many of us – natural hazards. Everybody is at risk from natural hazards - physically, emotionally and economically. However, some individuals, communities and societies seem to be more at risk than others and sustain greater losses following natural hazard events. Why? Some natural hazards cause only minor damage and inconvenience in one area, but major disasters in others. Again, why? The answers to these and similar questions will be explored in GEOS2111 Natural Hazards. This unit explores some of the major hazard types: earthquakes, volcanoes, floods, tropical cyclones and epidemics as well as looking at 'megahazards' like asteroid impacts with the earth and solar space storms! A number of career paths are available for specialists in natural hazards including for example, the emergency services, as disaster managers, the insurance industry and university based hazards and disaster research.

The initial lecture will outline the course content and structure, emphasising all teaching, learning and assessment criteria and provides a contextual framework for the further study of natural hazards. The formal lecture series will cover some of the major natural hazard types and from this, it will be seen that these hazards mirror the major earth systems: the atmosphere (e.g., storms), the biosphere (e.g., diseases), the hyrdosphere (e.g., floods) and the lithosphere (e.g., earthquakes). Definitions of hazard, risk and vulnerability will be examined as a proper understanding of these terms is central to recognising when a potentially hazardous process becomes a disaster. The lectures will also explore risk models and assessment of hazard and risk – key to the process of disaster management, and the social dimensions of hazard and disaster. A variety of practicals, tutorials and self-guided study tasks will supplement lecture material allowing you to further develop your understanding of the major issues relating to natural hazards.

At the end of the unit, you will understand how and why natural hazards occur and how individuals and communities may respond to them through the process of vulnerability reduction and disaster management. In a stand alone unit such as GEOS2111 Natural Hazards, it will not be possible to provide a full holistic synthesis of those factors which govern societal vulnerability to natural hazards and the range of disaster management approaches that may be adopted to mitigate natural hazards and disasters. However, the content will reflect state-of-the-art knowledge in the area of natural hazards studies. The specific material covered will provide a basic knowledge base that could be applied to areas of natural hazards study and disaster management (such as in academic research, risk insurance and humanitarian aid agency work).

This is a stand-alone unit and is relevant to the majors in Geography and Geology/Geophysics. GEOS2111 is a useful unit for those interested in taking numerous senior level units in the School of Geosciences.

In Figure 1, we provide a summary of the core concepts that are examined throughout GEOS2111 Natural Hazards. Whilst this figure separates these concepts out in to discrete components, in reality, there are many connections between them. We separate them in order to give you a framework in which to structure your study of this unit, to assist you in understanding the common themes between different natural hazard types and to aid you in your exam revision. Every lecture and associated practical, reading and assignment will implicitly or explicitly cover some of these. Where appropriate, staff will signpost in their lectures which of these concepts are covered in the material.

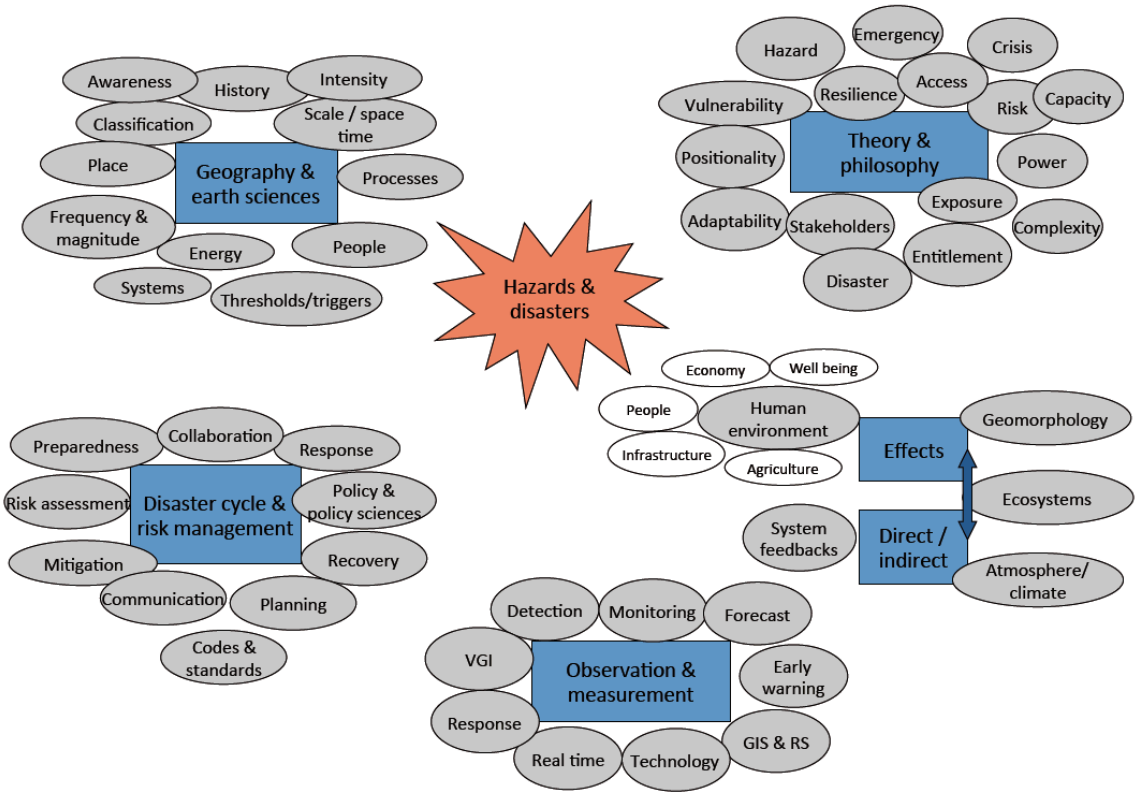


**Figure 1:** Summary of core concepts relevant to GEOS2111 that will be developed throughout the Unit

### 1.1 Assumed knowledge and prohibitions

Prerequisites: 24 credit points of Junior Science including 6 credit points of first year Geoscience units.

Prohibitions: GEOG2411, GEOS2911

## 2. Course Aims, Learning Objectives and Graduate Attributes

### 2.1 Course Aims

The aims of this Unit are to:

- define the earth system context in which natural hazards occur;
- introduce the definitions of the discipline field of natural hazards and disaster risk reduction;
- become aware of the theoretical and philosophical traditions of the discipline field of natural hazards and disaster risk reduction;
- explore the cause and effects of some specific examples of natural hazards;
- explore dominant trends in natural hazards and disaster losses;
- understand the basic tenants of risk assessment and explore the foundations of mitigation and disaster risk reduction;
- gain practical experience in using GIS and other ICTs to manipulate earth system hazards data; and to
- demonstrate knowledge of hazards and disasters through a variety of written outputs.

### 2.2 Learning Outcomes

After successfully completing this Unit, you should be able to demonstrate:

1. the classification of the earth systems together with associated relevant natural hazard types;
2. a critical understanding of the core concepts underpinning the discipline field of natural hazards and disaster risk reduction;
3. explain how concepts of vulnerability, resilience, risk and adaptive capacity interact to determine disaster losses (or not) in a particular situation or context:

4. review and comment upon the causes, processes and effects of selected natural hazard types;
5. describe and discuss the various approaches to disaster risk reduction and management;
6. provide a range of examples to illustrate your knowledge from developed and rapidly developing countries;
7. present a detailed piece of personal research in an appropriate written format (e.g., report, newspaper article etc) and;
8. apply spatial analysis as a mechanism for assessing hazard risk and vulnerability.

**2.3 Graduate Attributes**

Graduate Attributes are generic attributes that encompass not only technical knowledge but additional qualities that will equip students to be strong contributing members of professional and social communities in their future careers. The overarching graduate attributes identified by the University relate to a graduate's attitude or stance towards knowledge, towards the world, and towards themselves. These are understood as a combination of five overlapping skills or abilities, the foundations of which are developed as part of specific disciplinary study. For further details please refer to the Science faculty website at:
http://www.itl.usyd.edu.au/graduateAttributes/facultyGA.cfm?faculty=Science

| | Graduate Attributes | Learning Outcomes |
|---|---|---|
| **A Research and Inquiry** | | |
| A1 (1) | Apply scientific knowledge and critical thinking to identify, define and analyse problems, create solutions, evaluate opinions, innovate and improve current practices | 1, 2 |
| A2 (3) | Gather, evaluate and deploy information relevant to a scientific problem | 6, 7, 8 |
| A3 (2) | Design and conduct investigations, or the equivalent, and analyse and interpret the resulting data | 6, 7, 8 |
| A4 (0) | Critically examine the truth and validity in scientific argument and discourse, and evaluate the relative importance of ideas | |
| A5 (0) | Disseminate new knowledge and engage in debate around scientific issues | |
| A6 (0) | Value the importance of continual growth in knowledge and skills, and recognise the rapid, and sometimes major, changes in scientific knowledge and technology | |
| **B Information Literacy** | | |
| B1 (3) | Use a range of searching tools (such as catalogues and databases) effectively and efficiently to find information | 7, 8 |
| B2 (3) | Access a range of information sources in the science disciplines, for example books, reports, research articles, patents and company standards | 1, 2, 3, 4, 5, 6, 7 |
| B3 (2) | Critically evaluate the reliability and relevance of information in a scientific context | 7, 8 |
| B4 (1 | Consider the economic, legal, social, ethical and cultural issues in the gathering and use of information | 8 |
| B5 (3) | Use information technology to gather, process, and disseminate scientific information | 7, 8 |
| **C Communication** | | |
| C1 (1) | Explain and present ideas to different groups of people in plain English | 7 |
| C2 (2) | Write and speak effectively in a range of contexts and for a variety of different audiences and purposes | 7 |
| C3 (1) | Use symbolic and non-verbal communication, such as pictures, icons and symbols as well as body language and facial expressions, effectively | 7 |
| C4 (3) | Present and interpret data or other scientific information using graphs, tables, figures and symbols | 7, 8 |
| C5 (0) | Work as a member of a team, and take individual responsibility within the group for developing and achieving group goals | |
| C6 (0) | Take a leadership role in successfully influencing the activities of a group | |

| | | |
|---|---|---|
| | towards a common goal | |
| C7 (0) | Actively seek, identify, and collaborate with others in a professional and social context | |
| **D Ethical, Social and Professional Understanding** | | |
| D1 (0) | Demonstrate an understanding of the significance and scope of ethical principles, both as a professional scientist and in the broader social context, and a commitment to apply these principles when making decisions | |
| D2 (2) | Appreciate the importance of sustainability and the impact of science within the broader economic, environmental and socio-cultural context | 2, 3 |
| D3 (1) | Demonstrate empathy with, and sensitivity towards, another's situation, feelings and motivation | 2, 3, 4, 7 |
| **E Personal and Intellectual Autonomy** | | |
| E1 (1) | Evaluate personal performance and development, recognise gaps in knowledge and acquire new knowledge independently | 1, 2, 3, 4, 5, 6, 7 |
| E2 (2) | Demonstrate flexibility in adapting to new situations and dealing with uncertainty | 3, 5, 8 |
| E3 (0) | Reflect on personal experiences, and consider their effect on personal actions and professional practice | |
| E4 (2) | Set achievable and realistic goals and monitor and evaluate progress towards these goals | 7 |
| E5 (0) | Demonstrate openness and curiosity when applying scientific understanding in a wider context | |

**2.4 Threshold Learning Outcomes**

The Threshold Learning Outcomes (LTOs) are the set of knowledge, skills and competencies that a person has acquired and is able to demonstrate after the completion of a bachelor degree program. The TLOs are not equally weighted across the degree program and the numbering does not imply a hierarchical order of importance.

| | **Threshold Learning Outcomes** | **Learning Outcomes** |
|---|---|---|
| **1 Scientific Understanding** | | |
| 1.1 (1) | Articulating the methods of science and explaining why current scientific knowledge is both contestable and testable by further inquiry | 2, 3 |
| 1.2 (3) | Explaining the role and relevance of science in society | 2, 3, 4, 5 |
| **2 Scientific Knowledge** | | |
| 2.1 (3) | Demonstrating well-developed knowledge in at least one disciplinary area | 7 |
| 2.2 (1) | Demonstrating knowledge in at least one other disciplinary area | 7 |
| **3 Inquiry and Problem Solving** | | |
| 3.1 (3) | Gathering, synthesising and critically evaluating information from a range of sources | 4, 6, 7, 8 |
| 3.2 (0) | Designing and planning an investigation | |
| 3.3 (1) | Selecting and applying practical and/or theoretical techniques or tools in order to conduct an investigation | 7, 8 |
| 3.4 (2) | Collecting, accurately recording, interpreting and drawing conclusions from scientific data | 7, 8 |
| **4 Communication** | | |
| 4.1 (3) | Communicating scientific results, information or arguments, to a range of audiences, for a range of purposes, and using a variety of modes | 7, 8 |
| **5 Personal and Professional Responsibility** | | |
| 5.1 (3) | Being independent and self-directed learners | 1, 2, 3, 4, 5, 6, 7 |
| 5.2 (0) | Working effectively, responsibly and safely in an individual or team context | |
| 5.3 (0) | Demonstrating knowledge of the regulatory frameworks relevant to their disciplinary area and personally practicing ethical conduct | |

For further details on course learning outcomes related to specific topics see LMS site and Course Handbook.

**3. Study Commitment**

The current standard work load for a 6 credit point unit of study is 3-7 hours per week of face-to-face teaching contact hours and an additional 6 hours per week of student work of independent study. Below is a breakdown of our expectations for this unit. It should be noted that 'Independent Study' is based on what we believe to be the amount of time a typical student should spend to achieve to pass an item of assessment. Times are a guide only.

| In class activities | Hours | Independent study | Hours |
|---|---|---|---|
| Lectures | 26 | Reading for lectures | 13 (1 hr / wk) |
| Tutorials | 10 | Prep for tutorials & general background reading | 26 (2 hr / wk) |
| Practicals | 10 | Prep for practicals & assignment work | Variable depending on your comfort levels and knowledge – at least 2 hr / wk (26) |
| **TOTAL** | **46** | | |
| | | Revision for exam | Variable depending on your comfort levels and knowledge |
| | | **TOTAL** | **111** (plus) |

**3.1 Study Tips**

During your studies at University, you will be required to undertake various types of assessment, including essays, reports, posters, presentations, quizzes, dissertations and exams. These tasks help you to develop your writing and communication skills, which are an important outcome of your studies at University, because:

1. Writing aids the learning process, through engaging you in thinking about what it is you are trying to understand, solve, explain, investigate or prove.

2. Your learning can be assessed through your writing, which provides evidence of your level of understanding of the problem, concept or topic and your skill at being able to convey this.

3. Communication skills are essential in the workplace and employers consider your ability to communicate ideas clearly, precisely and persuasively very valuable.

For these reasons, you should approach every writing task as an opportunity to learn more deeply, to demonstrate your understanding and problem-solving skills to your lecturers and to develop effective writing skills to carry with you throughout your career.

Always remember that good writing and a clear, well-thought out argument, often go hand-in-hand and because good writing depends on clarity of thought and argument, it is **difficult**. Lecturers and tutors grade assignments on the basis of the clarity of your ability to express ideas, findings and arguments. In many university disciplines it is often the case that there is a not a single 'correct' answer to a question. Lecturers will grade you on the basis of how well you construct an argument. This involves setting up (or responding to) a specific question; citing appropriate evidence (that either you have collected or you are citing through other sources); and drawing relevant conclusions.

You are now in control of your own study strategy, and as an adult learner it is up to you to devise a study plan that best suits you. Many resources are available to assist your learning.

The Learning Centre (http://www.usyd.edu.au/stuserv/learning_centre/index.shtml)
Resources developed by The Learning Centre that are available to students include:

- Analysing an essay question
- Analytical writing
- Developing and supporting an argument
- Planning and structuring an essay
- Guidelines for referencing

The WriteSite (http://writesite.elearn.usyd.edu.au/)
The WriteSite provides online support on writing skills, including:

- Grammar
- Evaluating, citing and referencing sources
- Planning, structuring and writing an essay

Day, R.A. and Gastel, B. (2006). How to write and publish a scientific paper. 6th Edition. Cambridge University Press, Cambridge.

Durrenberger, R.W. (1971). Geographical Research and Writing. Crowell, New York.

Freeman, T.W. (1971). The Writing of Geography. Manchester University Press, Manchester.

Haring, L.L. and Lounsbury, J.F. (1971). Introduction to Scientific Geographic Research. Brown, Dubuque.

Knight, P.G. and Parsons, T. (2003). How to do your essays, exams & coursework in geography and related disciplines. Nelson Thornes, Cheltenham, England.

## 4. Learning and Teaching Activities

### 4.1 Lectures

Attendance at lectures is required to pass this unit. While recordings and handouts from the lectures may be made available through the eLearning site, these are not to be considered a replacement for attending the lecture.

GEOS2111 comprises two one-hour lectures per week for 13 weeks of semester. The formal lecture content is supplemented by two-hour discussion tutorials in Weeks 8, 9, 10, 11 & 12, by a two-hour practical class in Weeks 2, 3, 4, 5 & 6 and by directed self-study in Weeks 1, 7 & 13. You only need to enroll in one tutorial/prac class. Times and locations of lectures and tutorial/prac classes appears below.

Lectures and Tutorials/Practicals will be held at the following times and locations:

**Lectures:**
Tuesday, 12 noon – 1pm in Carslaw Lecture Theatre 175
Thursday, 12 noon – 1pm in Eastern Avenue Lecture Theatre

**Tutorial/Practical classes:**
Tuesday, 1 – 3pm in Madsen Temporary GIS PC Lab 301
Tuesday, 2 – 4pm in Madsen Access Lab 300
Thursday, 9 – 11am in Madsen Access Lab 300
Thursday, 2 – 4pm in Madsen Access Lab 300
Thursday, 2 – 4pm in Madsen Temporary GIS PC Lab 301

*NOTE – for the GIS practicals in Weeks 2 to 6, you must bring a flash drive to save and back up data*

## Teaching Schedule

| Week | Lecture topic and responsible staff | Prac Lab session | Notes |
|---|---|---|---|
| **1** (2 - 6 March) | **1.** Unit introduction, teaching philosophy, expectations & assessment tasks;<br>**2.** Natural hazards & disaster risk reduction – an introduction to foundational core concepts (Dale) | There are no tutorial/prac classes in Week 1 | Students are expected to complete a self-directed, online ArcGIS course in preparation the GIS activities for the following weeks |
| **2** (9 - 13 March) | **3.** Introduction to GIScience in the context of natural hazards (Eleanor)<br>**4.** Analysis of spatial trends and the emergence of VGI in hazard management (Eleanor) | Abstracting reality: Representing and modelling landscape processes in a GIS environment<br><br>Mapping fire hazard | Practical preparation questions |
| **3** (16 - 20 March) | **5.** Geophysical hazards I: Earthquakes (Maria)<br>**6.** Geophysical hazards II: Earthquakes and tsunamis (Maria) | Developing a conceptual model of bushfire risk | Practical preparation questions |
| **4** (23 - 27 March) | **7.** Geophysical hazards III: Volcanoes (Maria)<br>**8.** Geophysical hazards IV: Super volcanoes and mud volcanoes (Maria) | Vegetation characteristics, fuel load and risk and assessing potential bushfire risk: Ku-ring-gai case study | Volunteered Geographic Information (VGI) exercise |
| **5** (30 March – 2 April) | **9.** Tropical cyclones (Filippo)<br>**10.** Tornadoes (Filippo) | Earthquake GIS-based practical | **Assignment 1 due 12 noon Thursday 2nd April** |
| **Mid Semester break – no classes – Monday 6th to Friday 10th April 2015** | | | |
| **6** (13 - 17 April) | **11.** Mitigation & Management I: Tropical cyclones & bushfires (Filippo)<br>**12.** Mitigation & Management II: Earthquakes & tsunami (Filippo) | Earthquake GIS-based practical | |
| **7** (20 - 24 April) | **13.** Heatwaves (Sarah Perkins)<br>**14.** Bushfires (Dale) | No lab/prac this week | Individual work time for assignment 2 |
| **8** (27 April – 1 May) | **15.** Climate & weather extremes & climate change (online video & directed questioning) (Dale)<br>**16.** Conceptual & philosophical frameworks of global sustainability, resilience, vulnerability & the socio-ecological system (Dale) | Tutorial readings, discussion and work exercise. To be introduced in the lab class | Dale to organise/lead (content to be organised)<br><br>**Assignment 2 due 12 noon Friday 1st May** |
| **9** (4 - 8 May) | **17.** Socio-cultural dimensions of resilience & vulnerability (e.g., indigeniety, gender, sexuality, race, disability, marginalization etc) (Dale)<br>**18.** The risk assessment process & disaster risk reduction (with a focus on the Australian risk management standard) (Dale) | Tutorial readings, discussion and work exercise. To be introduced in the lab class | Dale to organise/lead (content to be organised) |
| **10** (11 - 15 May) | **19.** "The Great Plagues" - diseases, epidemics & pandemics (Maurizio Labbate, UTS)<br>**20.** Biohazards – locusts, sharks, snakes & spiders (Dale) | Tutorial readings, discussion and work exercise. To be introduced in the tutorial class | Dale to organise/lead (content to be organised) |
| **11** (18 - 22 May) | **21.** Natural v. unnatural hazards – benchmarking natural disaster statistics against other drivers of loss (e.g., smoking, car accidents etc) & Australian disaster trends (Dale)<br>**22.** Case study I: A geography of | Tutorial readings, discussion and work exercise. To be introduced in the tutorial class | Dale to organise/lead (content to be organised)<br><br>**Assignment 3 due 12 noon Friday 22nd May** |

| | | | |
|---|---|---|---|
| | natural hazard & disaster of the Asia-Pacific (Dale) | | |
| **12** (25 - 29 May) | **23.** Case study II: An Australian geography of natural hazard & disaster (Dale)<br>**24.** Case study III: Geophysical megahazards: Impacts and space weather (Maria) | Tutorial readings, discussion and work exercise. To be introduced in the lab class | Dale to organise/lead (content to be organised) |
| **13** (1 - 5 June) | **25.** Where to from here? Is the world becoming a more dangerous place & what can we do about it? (Dale)<br>**26.** Unit wrap up, exam prep & revision (Dale) | No lab/prac this week | This week's tutorial/prac classes will involve Dale answering questions on the exam and supporting you to prep for the exam |

## 5. Teaching Staff and Contact Details

| Unit Coordinator | Email | Room | Phone | Note |
|---|---|---|---|---|
| Associate Professor Dale Dominey-Howes | See NOTE below Table | Room 448, Madsen Building (F09) | NA – please always email Dale | Dale is responsible for all elements of the Unit |
| **Teaching Staff** | **Email** | **Room** | **Phone** | **Note** |
| Associate Professor Dale Dominey-Howes | See NOTE below Table | Room 448, Madsen Building (F09) | NA – please always email Dale | All enquiries and questions about the unit should be directed to Dale in the first instance |
| Dr Eleanor Bruce | See NOTE below Table | Room 458, Madsen Building (F09) | NA – please always email Dale | Enquires relating to week 2 lectures and weeks 2 – 4 practical sessions should be directed to Eleanor |
| Dr Maria Seaton | See NOTE below Table | Room 400, Madsen Building (F09) | NA – please always email Dale | Enquiries relating to various lectures and the practicals in weeks 5 & 6 should be directed to Maria |
| Dr Filippo Dall'Osso | See NOTE below Table | Room 444, Madsen Building (F09) | NA – please always email Dale | Enquiries relating to various lectures |
| **Tutorial/Practical Staff** | **Email** | **Room** | **Phone** | **Note** |
| Billy Haworth | See NOTE below Table | Room 419, Madsen Building (F09) | NA – please always email Dale | Contact Dale for any issues |
| Nicky Wright | See NOTE below Table | Room 412, Madsen Building (F09) | NA – please always email Dale | Contact Dale for any issues |
| Dr Filippo Dall'Osso | See NOTE below Table | Room 444, Madsen Building | NA – please always email | Contact Dale for any issues |

| | | | | |
|---|---|---|---|---|
| | | (F09) | Dale | |
| Matthew Ellis | See NOTE below Table | Room 444, Madsen Building (F09) | NA – please always email Dale | Contact Dale for any issues |
| **Guest Lecturers** | | | | **Note** |
| Dr Maurizio Labbate (UTS) | NA | NA | NA | Contact Dale for any issues |
| Dr Sarah Perkins (UNSW) | NA | NA | NA | Contact Dale for any issues |

**NOTE -** "For all enquiries please use the Blackboard email account which can be accessed by selecting **Email Contact** on the right hand side of the Blackboard page. Teaching staff will check and respond to emails sent via Blackboard regularly but we are unable to guarantee we will respond to unit related enquiries sent to our staff email accounts. If your enquiry is relevant to other students please send this via the **Discussions** link on Blackboard as this will allow other students to read and engage in the discussion responses."

## 6. Learning Resources

### PRESCRIBED TEXTBOOK

There is NO prescribed textbook for GEOS2111. However, the University Library holds a number of hard copy and electronic books that support this unit. You are strongly encouraged to utilise the full range of texts available. Additionally, students are expected to read and critically assess a number of set readings during the course of the semester. All required reading, along with other basic information relevant to the course will be made available through the eLearning site.

### Journals

The University holds a variety of full-text journals on-line. You are **REQUIRED** to consult journals as much as possible. You may find the following journals particularly helpful:

*Science; Nature; Disasters; Natural Hazards; The Australian Journal of Emergency Management; Bulleting of Volcanology; Journal of Volcanology and Geothermal Research; Bulleting of the Seismological Society of America; Disaster Prevention and Management; Environmental Hazards; Natural Hazards and Earth System Sciences*

### Internet Sources

You may find some of the following web sites of use. You are encouraged to be adventurous and use the internet to search for information to support your study of GEOS2111. The internet can provide a wonderful resource. However, be warned that the net also contains a great deal of information that is unsourced, unreferenced, unscientific, biased and even untrue! Be cautious and be selective!

http://www.unisdr.org/
http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm
http://ochaonline.un.org/
www.who.int
www.ipcc.ch
www.wmo.ch/index-en.html
www.ema.gov.au
www.fema.gov
www.usgs.gov
www.colorado.edu/hazardss
http://www.ngdc.noaa.gov/hazard/hazards.shtml
www.nerc-bas.ac.uk/tsunami/projects.html

**eLEARNING (Blackboard)**

An eLearning site ('Blackboard') will be used to support this course. Most handouts and Powerpoint lectures provided in class will be accessible through the eLearning site. Students are advised to monitor the Discussion Board to keep abreast of announcements and to participate in class discussions. Any announcements made in class will be posted to the Discussion Board and, therefore, **it is your responsibility** to check it regularly.

To access the eLearning site follow the instructions below:

1. Open a browser window
2. Go to the University of Sydney home page (http://sydney.edu.au/)
3. Select the 'Current Students' button
4. Choose 'Learning Management System (LMS)' from the **'STUDENT LOGINS'** menu on the right
5. Enter your UniKey login name and password
6. Select the link of the Subject you wish to look at (in this case, GEOS2111: Natural Hazards)

Please note that your UniKey login name and password will be printed on your initial confirmation of enrolment. If you have lost your password, either contact the ICT helpdesk at support@sydney.edu.au or take a photo ID to one of the Computer Access Labs.

**USEFUL CONTACTS AND RESOURCES**

*COUNSELLING, ILLNESS AND MISADVENTURE*

For many, being an undergraduate student is a period of transition – leaving home, mixing with new groups of people, and coping with the very different routines and regimentations of University life. It is often a very difficult period.

The University of Sydney Counselling Service (phone 8627 8433) (www.usyd.edu.au/stuserv/counselling/index.shtml) provides free and confidential support to students. Male and female registered psychologists are available who can provide counselling on a range of issues relating to life and study, including time management, motivation, stress, communicating with lecturers, depression, selfesteem, family issues, relationship difficulties, grief and bereavement, anxiety, traumatic experiences, social fears, sexuality concerns, eating disorders and problems with drugs and alcohol.
The counseling service also holds regular Workshops on topics such as 'Getting Organised', 'Managing Mood', 'Relaxation and Meditation' and 'Assertive Communication Skills'. See:
http://www.usyd.edu.au/stuserv/counselling/work.shtml

*SPECIAL CONSIDERATION*

Students are entitled to claim 'Special Consideration' if genuine illness or misadventure impacts upon their academic performance (such as sit an inability to sit any of the in-class tests, hand in material on time, or if you miss two or more practical classes). All applications for Special Consideration in GEOS 1001 must be processed officially through both the Faculty of Science (regardless of the student's particular faculty) and the School of Geosciences. The Faculty of Science official guidelines can be found at the Faculty website:
http://www.science.usyd.edu.au/cstudent/ug/forms/special_cons.shtml

Process to follow:
1. Students obtain a Special Consideration Pack from the Faculty of Science website. This pack includes all instructions needed to fill out the documentation correctly.
2. The completed application must then be stamped by the Faculty of Science prior to its submission to the School of Geosciences. Students then bring the completed forms to Geosciences office for processing.
3. The GEOS 1001 staff will then make a determination.
4. The decision will be recorded on the student file in the Faculty of Science, who will then notify the student by email of the decision. Copies of all completed forms will be kept in-confidence by the School of Geosciences for future reference.

*LEARNING CENTRES*

The Learning Centre (http://sydney.edu.au/stuserv/learning_centre/index.shtml) offers a wide range of courses intended to develop the generic skills required for success at University, and was established to assist students achieve their academic potential. They also offer workshops for undergraduate students from non-English speaking backgrounds.

*GEOSOC*

GEOSOC is the student society open to all undergraduate and postgraduate students, and provides support and information to students in the School.

**7. Assessment Tasks**

You are responsible for understanding the University policy regarding assessment and examination, which can be found at http://www.usyd.edu.au/ab/policies/Assess_Exam_Coursework.pdf

**Formative and Summative Assessment**

Assessment in this unit will be both formative (for feedback) and summative (for marks). Quizzes and assignments incorporate both formative and summative assessment. 'Formative assessment' provides feedback on performance, and 'summative assessment' comprises marks for performance in assignments, quizzes and examinations, which will count towards a final unit mark.

**7.1 Summative Assessments**

A visual calendar form of the summative assessment dates is available. A iCal format calendar for Google, Apple and other calendar application is also available.

| Assessment Task | Percentage Mark | Due Date | Learning Outcomes |
|---|---|---|---|
| Bushfire hazard GIS report | 20 | 12 noon, Thursday 2nd April (Week 5) | 2, 3, 4, 5, 7, 8 |
| Earthquake Report | 20 | 12 noon, Friday 1st May (Week 8) | To be confirmed |
| Newspaper article | 20 | 12 noon, Friday 22nd May (Week 11) | 1, 2, 3, 4, 5, 6, 7 |
| Final Examination | 40 | During the exam period | 1, 2, 3, 4, 5, 6 |

**Description of Summative Assessments**

Assignment 1 – Bushfire hazard GIS report – see assignment brief in separate document.

Assignment 2 - Earthquake Report – see assignment brief in separate document.

Assignment 3 - Newspaper Article – see assignment brief in separate document.

Final Examination – the final (summative) examination will comprise one two hour long exam. Details about the style and format of the exam will be provided to you by Dale Dominey-Howes during your tutorial/prac classes in Week 13.

**Standardised approach for referencing at the end of your assignments**

All our students are requested to use the 'Havard style of referencing'. Details on this style are available via the Library's style guide for referencing available here:
http://sydney.edu.au/library/subjects/downloads/citation/Harvard_Complete.pdf

**Penalties for lateness**

The University requires staff to apply penalties for late submission of assignment. As Unit Convener, Dale understands that despite the best planning and intensions situations can go wrong and making submission on time can be problematic. If you think you are going to be late with an assignment, please contact Dale IN ADVANCE so we can discuss the situation. In most cases, a reasonable set of circumstances exist, and we can negotiate an alternative date for submission. However, please do not leave this to the last minute ☺ Where no good reason exists for late submission, I am so sorry but penalties will apply.

The penalty for late submission for assignments in this Unit are 5% per 24 hours after the due date.

**7.2 Assessment Grading**

Final grades in this unit are awarded at levels of HD (High Distinction), D (Distinction), CR (Credit), P (Pass) and F (Fail) as defined by Academic Board Resolutions: Assessment and Examination of Coursework. Details of Academic Board Resolutions are available on the University`s Policy website at http://www.usyd.edu.au/ab/policies/Assess_Exam_Coursework.pdf

Standards for grades in individual assessment tasks and the summative method for obtaining a final mark in the unit will be set out in a marking guide supplied by the unit coordinator. Distributions of merit grades in units of studies offered by Schools in the Faculty of Science are governed by a policy based on norm-referencing.

In practice, this means that the number of merit grades (High Distinctions, Distinctions and Credits) is limited by the number of students enrolled in the unit of study, unless a special case can be made. When grades returned by unit executive officers fall outside these guidelines, marks within the unit of study may be scaled to fit the guidelines.

For the School of Geosciences grading is as follows:

| **GRADE** | **% RANGE** |
|---|---|
| High Distinction (HD) | 85-100 |
| Distinction (D) | 75-84 |
| Credit (C) | 65-74 |
| Pass (P) | 50-64 |
| Fail (F) | 0-49 |
| Absent Fail (AF) | - |

Unless mitigated by an approved Special Consideration (see Teaching and Learning Policies), the following conditions constitute an automatic failure for the course:

- failure to maintain a satisfactory attendance record in practicals;
- failure to submit the GIS essay or final exam, without accepted explanation.

A student is given an 'Absent Fail' mark due to non-submission of compulsory work (or non attendance at compulsory labs, etc) as well as failure to attend an examination.

The full Academic Board Resolutions can be found at:
http://www.usyd.edu.au/ab/policies/Assess_Exam_Coursework.pdf

Assessed exercises may not be revised and resubmitted for re-marking. If you wish to appeal an academic decision, you should refer to the University Policy at:
http://www.usyd.edu.au/ab/policies/HESA_Grievance_Procedures.pdf and
http://sydney.edu.au/senate/policies/Ac_Appeals_Rule.pdf

You are responsible for handing in reports on time and attending exams when they are scheduled. Being unaware of due dates and exam dates is NOT a valid excuse for late submission or non-attendance.

**8. Learning and Teaching Policies**
For full details of applicable university policies and procedures, see the Policies Online site at http://sydney.edu.au/policy

**Academic Policies relevant to student assessment, progression and coursework:**

- **Academic Dishonesty in Coursework**. All students must submit a cover sheet for all assessment work that declares that the work is original and not plagiarised from the work of others. The University regards plagiarism as a form of academic misconduct, and has very strict rules that all students must adhere to. For information see the document defining academic honesty and plagiarism at:

  http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0

- **Coursework assessment policy**. For information, see the documents outlining the University assessment policy and procedures at:

  http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/266&RendNum=0 and http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/267&RendNum=0.

  The Faculty process is to use standards based assessment for units where grades are returned and criteria based assessment for Pass / Fail only units. Norm referenced assessment will only be used in exceptional circumstances and its use will need to be justified to the Undergraduate Studies Committee. Special consideration for illness or misadventure may be considered when an assessment component is severely affected. Details of the information that is required to be submitted along with the appropriate procedures and forms is available at:

  http://sydney.edu.au/science/cstudent/ug/forms.shtml#special_consideration

  Start by going to the Faculty of Science Webpage, and downloading the 'Special Consideration' pack at the link above.

- **Special Arrangements for Examination and Assessment**. In exceptional circumstances alternate arrangements for exams or assessment can be made. However concessions for outside work arrangements, holidays and travel, sporting and entertainment events will not normally be given. The policy, guidelines and application form including examples of circumstances under which you might be awarded a special arrangement for an examination or assessment task can be found at:

  http://sydney.edu.au/science/cstudent/ug/forms.shtml#special_arrangements

- **Student Appeals against Academic Decisions**. Students have the right to appeal any academic decision made by a school or the faculty. The appeal must follow the appropriate procedure so that a fair hearing is obtained. The formal application form can be obtained at:

  http://sydney.edu.au/science/cstudent/ug/forms.shtml#appeals

Relevant forms are available on the Faculty policies website at http://sydney.edu.au/science/cstudent/ug/forms.shtml

**PLAGIARISM**

Plagiarism means the dishonest use of another's material. It is serious misconduct to plagiarise. The University's rules on plagiarism are outlined at:

http://fmweb01.ucc.usyd.edu.au/senate/pol

The rules make a distinction between:

- **Negligent plagiarism** (defined as: innocently, recklessly or carelessly presenting another person's Work as one's own Work without Acknowledgement of the Source).
- **Dishonest plagiarism** (defined as: knowingly presenting another person's Work as one's own Work without Acknowledgement of the Source

In cases of negligent plagiarism, it is usually the case that students will be required to resubmit their work. In cases of dishonest plagiarism, the School of Geosciences reserves the right to impose the full degree of sanctions on students, which includes automatic failure for the unit of study.

To avoid plagiarizing, you should directly quote the source of material, or paraphrase it in your own words.

When submitting documents for GEOS2111 (e.g., Assignments) you will be required to submit a cover sheet that includes a signed declaration of the originality of your work. Relevant documents will be available through the eLearning site and MUST accompany all submitted materials. These documents aim to focus your attention on the issue of plagiarism. If you have any questions about what constitutes plagiarism ask your tutor, the lead tutor or one of the UoS lecturers. You should also complete the plagiarism and academic honesty tutorial and obtain a 'certificate of completion' for plagiarism
iResearch object from the Library at http://www.library.usyd.edu.au/elearning/learn/plagiarism/.

Additionally, prior to being able to submit the first assignment, you will be required to complete an online mini-quiz that means you understand and are agreeing not to plagiarise. Completion prior to submission of Assignment One implies the same knowledge in relation to Assignments Two and Three.