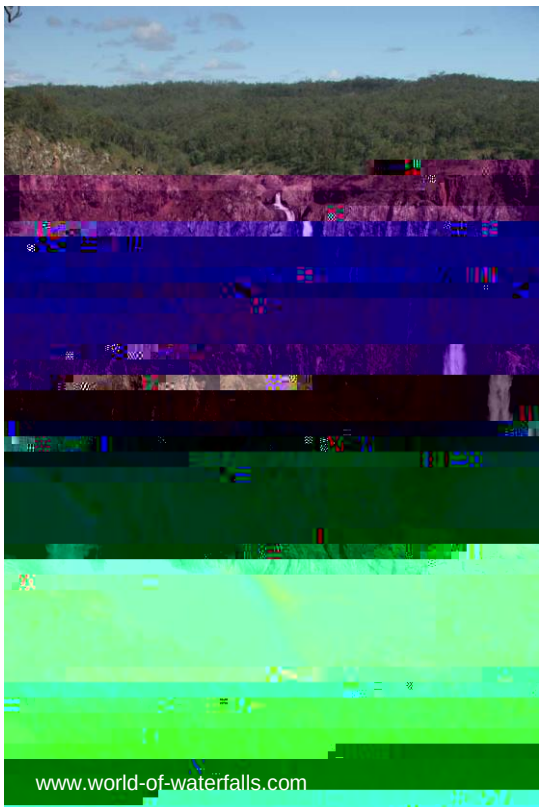

GEOS 2721

AUSTRALIAN PHYSICAL ENVIRONMENTS

TERM THREE

2022

FACULTY OF SCIENCE

SCHOOL OF BIOLOGICAL EARTH AND ENVIRONMENTAL SCIENCES

1. Information about the Course

2. Staff Involved in the Course

Name	Role	Contact Details and Consultation Times

Major Topics (Syllabus Outline)	*The course covers the major syllabus topics of geomorphic, sedimentary and pedological processes in a variety of physical environmental settings.* *The main syllabus units include*

4. Course Learning and Teaching Design

<table>
<tr><td>Teaching Rationale and Strategies</td><td colspan="2">The course design follows the RASE (Resources, Activity, Support and Evaluation) learning model. The Resources include: content in lectures and from textbooks, journal articles and digital media; as well as statistical analysis and modelling software; and a variety of analytical instruments. Activities include a variety of lab and field-based tasks that require students to actively engage with the resources to complete tasks that demonstrate their achievement of the course learning outcomes. Support will be provided by peers (working in groups and online forums), online resources and the use of early formative and summative feedback on studentsô work and progress. Key aspects of studentsô work will be Evaluated to enable them to improve their learning and become more independent and effective learners. Students will also be involved in the planning processes for many of the activities and their reflection and evaluation of tasks will be used to improve them in future.

The course involves a mix of theoretical and conceptual material delivered in lectures and online materials that are reinforced and complemented through laboratory tasks and skills. The field trip provides a critical synthesis of these two components and is a major focal point of the course whereby students can interpret the landscape using their knowledge base and also through the collection and interpretation of data. The labs and field trip promote an environment of enquiry where students can develop perspectives on the subject matter based upon their own personal experiences and also through interaction with peers.

The timing of the field trip allows students to acquire the necessary theoretical background and data collection and interpretation skills beforehand. The theme of the field trip will be to investigate the changes in the surface processes, landforms and sedimentary environments in a variety of settings including glacial landscapes, fluvial systems and estuarine environments. During the field tutorials, students will partake in a variety of data collection tasks such as measuring and describing landform elements, and describing sediments.

The various assignments will test the knowledge and understanding of geomorphology, sedimentology and pedology in the surficial environment, with a focus on landforms and the processes that shape them. Practical skills in conducting field surveys, laboratory tests and data analysis will also be developed and tested in the course, as well as writing skills that explain and communicate the results. Students will work with a variety of software packages to analyse, manipulate and model data. The course will emulate the type of professional activities that students might be expected to undertake on graduation.</td></tr>
<tr><td>Science Program Learning Outcomes (SPOs) addressed by this course
(for Science degrees)</td><td>Science Program Objectives and Graduate Attributes
(from Science handbook)

1. Develop and sustain an interest in and knowledge of Science.

2. Develop a working knowledge of scientific methods of investigation.</td><td>Examples of application to course

1. Emphasis of the complexity of geophysical systems ï what is known and what is not known

2. Laboratory and field exercises explore real world problems and are based on typical projects that young professionals would undertake.</td></tr>
</table>

	3. Encourage curiosity and creative imagination and an appreciation of the role of speculation in the selection and solution of problems, the construction of hypotheses, and the design of experiments.	*3. Field and laboratory work involves students in planning and hands on experiences. Students required to manage collection and interpretation of field data.*
	4. Develop an appreciation of scientific criteria and a concern for objectivity and precision.	*4. Students are required to think critically about errors and bias in the methods they are using to solve problems.*
	5. Develop confidence and skill in formulating problems and in treating both qualitative and quantitative data.	*5. Assessment tasks adopt problem solving approaches and students must incorporate a variety of data sources in the work they produce.*
	6. Develop the ability and disposition to think logically, to communicate clearly by written and oral means, and to read critically and with understanding.	*6. The main field report requires students to undertake a comprehensive literature review and organise findings into a coherent argument.*
	7. Develop the habit of seeking and recognising relationships between phenomena, principles, theories, conceptual frameworks and problems.	*7. The key learning outcome for the course is for students to explain how a variety of factors and processes control the formation of different features of surface environments and physical landscapes. Both theoretical and practical approaches are used to achieve this outcome.*
	8. Promote understanding of the significance of science, technology, economics and social factors in modern society, and of the contributions they can make in improving material conditions.	*8. Key course elements directly relate to issues of land management and resource exploitation. The relevance of each topic and the purpose and outcomes of the laboratory are integrated within student activities.*
	9. Provide opportunities for the development of students' motivations and social maturity, and an awareness of their capabilities in relation to a choice of career which will be fruitful to themselves and to society.	*9. Key graduate attributes developed throughout the course include: writing and communication skills, approaches to problem solving, working as part of a team, project planning. Feedback on lab tasks as well as major written reports will be used to assess student learning and build learning outcomes.*
	10. Provide opportunity to study science in combination with other disciplines.	*10. Topics covered include perspectives from engineering, commerce and the humanities.*
Section 8 outlines the relationships between CLOS, PLOs, course elements and assessment tasks.		

5. Lecture and Lab Schedule (Note this may be subject to change)

Week Commence Monday	Lect 1 Mon 10.00 am	Lab 1 Monday 3 – 5 pm	Lect 2 Tues 2.00 pm	Lab 2 Tuesday 3 – 5 pm	Lect 3 Thursday 1.00 pm Online/pre-recorded	Assess
Week 1 Sept 12	1. Overview of physical environments	Introduction to course. Introduction to Google Earth and Nearmap.	2. Australian environments and landform evolution	Introduction to landforms using Google Earth and Nearmap	3. Past Environments and Present Landforms	Formative Quiz
Week 2 Sept 19	4. Glacial environments and landforms	Glacial Environments and landforms	5. Introduction to fluvial systems	Stream channel morphology	6. Fluvial processes: hydrology & discharge	Google Earth Lab Due end of Wk 2
Week 3 Sept 26	7. Fluvial processes: floods	Catchment hydrology and stream discharge	8. Fluvial Processes: Flow Hydraulics	Flood frequency	9. Flow hydraulics and sediment transport	Formative Quiz
Week 4 Oct 3	10. Properties of sediments	Public Holiday: No Classes	11. Sediment Transfers	Sediment description and PSA	12. Stream Channel Morphology Part 1	Hydrology and Stream Discharge Lab Due end of Wk 4
Week 5 Oct 10	13. Stream channel P ⊀ Stream cStream c St					

5. Lecture and Lab Schedule (continued)

Week Commence Monday	Lect 1 Mon 10 am	Lab 1 Monday 3 – 5 pm	Lect 2 Tues 2.00 pm	Lab 2 Tuesday 3 – 5 pm	Lect 3 Thursday 2 – 4	Assess
Week 7 Oct 24	16. Estuaries: properties and processes	Survey Lab 1	17. Estuary sediments	Survey Lab 2	No lecture in lieu of Field Trip from Fri-Sun	Field Trip runs Fri ς Sun (includes group quiz)
Week 8 Oct 31	No Classes (Field Trip Recovery)		18. Deltas	Field Trip data analysis and report workshop	19. Aeolian processes and landforms	
Week 9 Nov 7	20. Australian arid landscapes	Field Trip data analysis and report workshop	21. Soil properties and formation	Soil properties and profile description	22. Soil erosion	
Week 10 Nov 14	23. Arid zone soils	Soil and water relationships	24. Soil ecology	Course review and exam preparation		

8. Details of assessment tasks and alignment with CLOs and SPOs

Most assessments due at Friday 6.00 pm in the week shown but students should check specific submission deadlines

Week	Topic or Task	Assessment and Feedback Details	Due Date	% Weight for Summative Tasks	CLO	SPO
1	Introduction to Labs, Online mapping skills	Formative feedback on map quiz			1, 2, 3	1, 2, 7
2	Glacial and fluvial landforms					

Students work co-operatively to complete tasks, but individually

9. Expectations of Students, Training and Enabling Skills

Attendance in lab classes and on the field trip are compulsory. It is also recommended that students attend the live lecture sessions. The University expects that all students (domestic and international) be present and available for the entire duration of the UNSW scheduled semester period and associated exam period (TBC but most likely 28th November - 9th December). Please bear this in mind when making work or travel plans.

Students that miss classes or assessment tasks due to ill health or other issues are advised to contact David Edwards (Course Convenor) as soon as possible and provide certified documentation. You can apply for Special Consideration when illness or circumstances that are beyond your control or unexpected interfere severely with your academic performance. More information on Special Consideration can be found at: https://student.unsw.edu.au/special-consideration

Most of the course material is delivered or available online and it is expected that students will have regular access to the internet either via home computer or through personal electronic devices (e.g. mobile phone, iPad, laptop). If you have problems accessing this material please talk to David Edwards about alternative methods of access.

General information on BEES School Polices and links to UNSW policies can be found on the BEES School web site: www.BEES.unsw.edu.au

Review Type	Last Review Date	Comments or Changes Resulting from Reviews
Major Course Review	*2011*	*Following on from student feedback in 2011 the course was restructured in 2012 and 2013. Key changes include: changing session offered from S1 to S2, fewer lecturing staff to provide continuity to students, fewer assessment tasks and changes to location and timing of field trips. Longer (3 hour) labs have provided more time to complete tasks in labs with staff present to assist.*
CATEI	*2015*	*Timing and work required for field and lab tasks have been modified to allow students to complete assessments. More material has been placed on line (eg Moodle) to facilitate students working at home or outside class contact hours.*
myExperience	*2016 - 2021*	*Timing and work required for field and lab tasks have been modified to allow students to complete assessments. The lab tasks have been more fully integrated with the major field report and broken into two classes per week @ two hours per class.* *Feedback on Virtual Field Trip from 2020 has been used to imprrom 2*

Scheffers, A.M., May, S.M.and Kelletat, D.(2015) Landforms of the world with Google Earth : understanding our environment, Springer . ISBN9401797137; ISBN9401797137 . ebook.

Summerfield, M.A. (1999). Global Geomorphology. Longman, New York. ebook.

Twidale C.R. and Campbell E.M. (2005). Australian Landforms: Understanding a low, flat, arid and old landscape. Rosenberg Publishing, Dural Sydney.

Goudie A.S. and Viles H.A. (2010) Landscapes and Geomorphology: A Very Short Introduction, OUP, ISBN13 9780199565573 . ebook

Suggested

Gallagher, H.H. and Peterson, J.A. (1987). Landforms: an Introduction to Australian Geomorphology. Oxford University Press, Melbourne.

Jeans, D.N. (Ed.) (1986). The Natural Environment; Australia ï A Geography Volume One. Sydney University Press, Sydney.

Twidale, C.R. and Campbell E.M. (1993). Australian Landforms: Structure, Process and Time. Gleneagles Publishing Adelaide.

ii) Course Manual

Course notes will be provided to students and available to download from the course Moodle site.

14. UNSW Academic Honesty and Plagiarism

What is Plagiarism?

*Examples include:

direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet,

paraphrasing another
progression of ideas of the original;
piecing together sections of the work of others into a new whole;
presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
claiming credit for a proportion a work contributed to a group assessment item that is greater than

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

BEES Academic Honesty and Plagiarism

In addition to the UNSW Policy on Academic Honesty and Plagiarism, the School of Biological, Earth and Environmental Sciences (BEES), also considers any work submitted that has been produced outside of a given course in a given year to be plagiarism i.e.:

Work produced for a third party e.g. your place of employment, is considered intellectual property of the third party, and as such if such work is submitted in place of a required course work, it is deemed plagiarism.

All work submitted for assessment must be created specifically for the given assessment task in the given year. Work produced in previous years or for other assessments is not acceptable.