

Note that this is from a previous year so should be used only as a general indication of course content and dates. Check with Course Coordinator Chris Moy (chris.moy@otago.ac.nz) for the latest information about this year.

GEOL 273/373 – Sedimentary Processes and Materials

Purpose

Sediments are the key recorder of earth surface processes and environments through time. GEOL 273/373 will be an integrated lecture, laboratory, and field course designed to link sediments to their respective processes and environments. One of the key focuses will be an investigation of fundamental techniques available for describing and deciphering the depositional processes and history of sediments including the analysis of facies, textures, sedimentary petrography, and physical properties of modern and ancient sediments. The course will also investigate a series of depositional environments and indirect controls on their deposition, particularly the role climate, sea level and tectonics play. Course material will cover both terrestrial and marine sedimentary environments, processes, and materials.

Content

The course has four elements: **Fundamental processes in sedimentology** (fluid theory, settling, sediment transport, wave theory); **Depositional environments** (alluvial fans, lakes, glaciated continental shelves, clastic shorelines and shelves, deltas); **Tools for sedimentary investigations** (observation and description, facies analysis, textural analysis, sedimentary petrography, physical properties, sediment coring); and **Controls on Sedimentation** (direct – currents, waves, wind, density flows and settling, and indirect – climate, sea level, tectonics). Practical work will be based around laboratory modules and a field trip that covers sedimentary succession logging, grain size analysis, sedimentary petrography in grain mounts and thin section, and measurement of physical properties.

Teaching Staff

Assoc. Prof. Chris Moy (CMM; coordinator); 2s04; chris.moy@otago.ac.nz

Dr. Christina Riesselman (CRR); christina.riesselman@otago.ac.nz

Class Location

Lectures – Quad IV; Tuesday 8-9 AM and 12-1 PM

Practicals – Stage 2 Lab (1N06) Tuesday 2-5 PM

Fieldwork

A day trip to the south Otago coastline to be held on September 7th or 8th.

Assessment

50% final examination and 50% internal assessment (see below):

Internal assessment:	Due Date:	Weight:
Exam 1	8:00 AM Tuesday Aug 13	10% of final grade
Exam 2	Noon Tuesday Sep 17	10% of final grade
Blackboard quiz (x5)	End of day on Jul 21, Jul 28, Aug 04, Sep 08, and Sep 29	10% of final grade
Screencast project	noon August 23	5% of final grade
Group project on the Wangaloa Fm	noon Friday Oct 4	15% of final grade

Textbook

Nichols, Gary, 2009, *Sedimentology and Stratigraphy*. 2nd Edition, Wiley-Blackwell. Available at the bookstore and online from the Otago library catalogue. Readings are a required part of the class and it is expected that you come to class prepared having read the assigned chapter(s). Exam questions will be drawn from material covered in class and the textbook readings.

Handouts

We will post relevant slides/lecture material to Blackboard and will not provide paper copies. We expect that all students come prepared to class by reading the assignments in advance and taking notes during the lecture.

Disabilities

The Geology Department encourages students to seek support if they find they are having difficulty with their studies due to disability, temporary or permanent impairments, injury or chronic illness. Contact Disability Information and Support:

The Disability Information & Support office is located in the west lane of the Information Services Building which is on the corner of Cumberland and Albany streets in Dunedin.

Phone: 479-8235

Email: disabilities@otago.ac.nz

Plagiarism

Plagiarism is using someone else's words, thoughts or ideas as if they were your own. The University of Otago considers plagiarism to be dishonest practice. It defines plagiarism as:

Copying or paraphrasing another person's work and presenting it as one's own - whether intentionally, or through failure to take proper care. Being party to someone else's plagiarism (by allowing them to copy your work or by otherwise helping them plagiarise work for an assessment) is also dishonest practice (University of Otago Plagiarism and Examination Conduct Regulations).

The definition of plagiarism also applies under the following circumstances:

- You help someone else to copy work without acknowledgement
- You let someone else copy your own work
- You use your own work in another situation e.g., a different paper or program without indicating the source.

All of these situations are considered a dishonest practice. Any student found responsible for plagiarism in any piece of work submitted for assessment shall be subject to the University's dishonest practices regulations, which may result in various penalties, including forfeiture of marks for the piece of work submitted, a zero grade for the paper, or in extreme cases, exclusion from the University.

(<https://www.otago.ac.nz/study/academicintegrity/otago006307.html>)