

EAOS111 Earth and Ocean Science Timetable 2016

WEEK	MONDAY 12 noon - 12.50 pm	TUESDAY 12 noon - 12.50 pm	WED LABS	THURSDAY 12 noon - 12.50 pm	FRIDAY 12 noon - 12.50 pm	LAB: T/W: 9-11:50 M/T/W/TH: 2.00- 4.50PM	SAT/SUN FIELD TRIP
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Module 1 – Humanity on Earth, Earth in the Universe

Week 1 29 Feb - 6 Mar	EAOS 111: Your place on planet Earth CRR	The Earth system Ch 1 CRR		James Hutton and modern geology Ch 7 CRR Watch “Men of Rock: Deep Time” on YouTube	Deep Time Ch 4, pp 101-105 CRR	Undersea New Zealand RM & CT	
Week 2 7 Mar - 13 Mar	Origin of the Universe and our solar system Ch 4, pp 81-90, 94-100 JMP	Earth and Moon: A unique pair Ch 4, pp 93-94 JMP		Mars: Past water, past life? Ch 4, pp 90 – 91 JMP	Venus: Our evil twin Ch 4, pp 90 – 91; Ch 13, pp 408 – 410; Ch 19, pp 592 – 601 JMP	Geology of North Otago JMP & RM	N Otago 12 or 13 March

Module 2 – The geosphere

Week 3 14 Mar - 20 Mar	Internal structure & composition of the Earth Ch 3, pp 61-63 MS N/Ot F/trip assmt due noon	Plate Tectonics: evidence/drivers/measures Ch 5, pp 113-125 MS		Plate tectonics: types of plate boundaries Ch 6, pp 143-183 MS	Plate tectonics: hazards MS Library quiz deadline	Plate Tectonics and Oceanic Crust MS & RM	
Week 4 21 Mar - 27 Mar	New Zealand plate boundary www.otago.ac.nz/geology/research/structural-geology/alpine-fault/nz-tectonics.html MS Watch "Pushing New Zealand's Boundaries" on YouTube	Earthquakes: measurement and effects Ch 6, 146-150 MS		Earthquake hazard assessment http://sra.ceng.metu.edu.tr/docs/SRA_SHA.pdf (first 1.5 pages) MS	GOOD FRIDAY	LAB TEST	

Mid Semester Break 25 March - 3 April • Easter Monday 28th March • OU Anniversary Day Tuesday 29th March

Module 3 – Earth’s surface

Week 5 4 Apr - 10 Apr	Weathering & soils I Ch 3, pp 74-75; Ch 7, pp 186-187; Ch 15, pp 467-472 CEM	Weathering & soils II CEM Class Reps meeting 1.00 pm, Common Room		Global biogeochemical cycles Ch 15 CEM	CLASS EXAM 12 – 12.50pm	Seismology ARG & RM	
Week 6 11 Apr - 17 Apr	The hydrologic cycle Ch 8, pp 228-234 CO	Fluvial systems Ch 8, pp 238-241 CO		Terrestrial landforms I Ch 7, pp 212-215; Ch 8, pp 234 - 238 CO	Terrestrial landforms II CO	Seafloor Sediments CRR & RM	Taieri 16 or 17 Apr

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Week 7 18 Apr - 24 Apr	Glaciers and ice sheets Ch 9, pp 258-276 CRR	Ice in the Earth system Ch 9, pp 275-284 CRR		Marine sedimentation I Ch 10, pp 293-294 & 302-314 CRR	Marine sedimentation II CRR	Taieri River and Plains CO & RM	

Module 4 – The marine setting

Week 8 25 Apr- 1 May	ANZAC DAY	Field methods in marine geology and geophysics ARG		Primary production Ch 15, pp 452-459 ML	Secondary production ML	<i>Polaris</i> labs Tues-Sat 9-12; 2-5 ARG & CRR	
Week 9 2 May - 8 May	Global circulation- marine and atmospheric I Ch 12, pp 355-359 RS Polaris quiz deadline	Global circulation- marine and atmospheric II Ch 12, pp 295-301 RS		Global circulation and climate; El Niño Ch 12, pp 361-364 & Ch 10, pp 305-306 RS	The origin of tides and global tidal patterns; Tsunami 2004 Ch 10, pp 306-307 RS	Physical Oceanography RS	
Week 10 9 May - 15 May	Marine biodiversity Ch 15, pp 479-483 ML	Marine biomes ML		Water on Earth Ch 1, pp 10-16; Ch8 AS	Seawater Ch 10, pp 287-293 AS	Diversity of Life (Portobello Marine Lab, 4 hrs) ML	
Week 11 16 May - 22 May	Seawater and the atmosphere Review Ch 10 AS Portobello assmt due noon	Seawater and sunlight Ch 10, pp 306-307 AS Class Reps meeting 1.00 pm, Common Room		Paleontology: Evolution of whales and penguins REF	Paleontology: Fossils & the origin of life REF	Paleontology I REF	

Module 5 – Life through time

Week 12 23 May - 29 May	Paleontology: Cambrian radiation REF	Paleontology: Evolution of reefs REF		Paleontology: Diversity of invertebrates REF	Paleontology: Dinosaurs REF	Paleontology I REF	
Week 13 30 May - 5 June	Paleontology: Dinosaurs & mass extinctions REF	Paleontology: Foraminifera & basin history REF		Humans shaping the earth; Earth shaping humanity Ch 17 & 18 CRR	The Anthropocene debate Ch 19 CRR	FINAL PRAC TEST	

Queen's Birthday Monday 6 June
EXAMINATIONS Saturday 4 June – 22 June
INTER-SEMESTER BREAK 23 June – 10 July

GEOLOGY TEACHING STAFF

REF	Professor R Ewan Fordyce
ARG	A/Prof Andrew Gorman (Course advisor) andrew.gorman@otago.ac.nz (2s3)
CEM	Dr Candace Martin
RM	Mr. Ray Marx (Teaching Fellow) ray.marx@otago.ac.nz (Gn4)
CO	Dr Christian Ohneiser
JMP	Dr Michael Palin
CRR	Dr Christina Riesselman (EAOS 111 coordinator) christina.riesselman@otago.ac.nz (Gn2)
MS	Professor Mark Stirling
CT	Dr Claudio Tapia (Gn7)

MARINE SCIENCE TEACHING STAFF

ML	A/Prof Miles Lamare
CRR	Dr Christina Riesselman (Coordinator)
AS	A/Prof Abby Smith (HoD Marine Science)
RS	Mr. Rob Smith

TEXTBOOK: *The Blue Planet: An Introduction to Earth System Science 3rd Edition* by Brian J Skinner & Barbara W Murck (2011), J Wiley & Sons Inc. Available from the University Bookshop in hardbound and binder-ready loose-leaf editions.

ADDITIONAL READING: (Online or in the Science Library)
Earthquake Hazard Assessment, http://sra.ceng.metu.edu.tr/docs/SRA_SHA.pdf
A Continent on the Move: New Zealand Geoscience into the 21st Century. I. Graham, 2008. (Chief Editor). Geological Society of New Zealand and GNS Science, Wellington. (Science Library)
Oceanography: An invitation to Marine Science. T. Garrison, 2014. Brooks & Cole (Science Library)
Photographic guide to Rocks and Minerals of New Zealand. N. Mortimer et al., 2011, GNS Science Publications (Science Library)
Earth: Portrait of a Planet. S. Marshak, 2015. W.W. Norton & Company (Science Library)
Zealandia: Our Continent Revealed. H. Campbell and N. Mortimer, 2015. GNS Science Publications (Science Library)

READINGS: All readings should be completed **before** the lecture for which they are assigned. Some readings will be discussed in class.

STUDY HELP: The Student Learning Centre (SLC) at Otago has lots of great resources to help you with your studies. If they can't answer your question, they'll know who can! Visit them in the ISB (Central Library) Building or browse their offerings online at <http://hedc.otago.ac.nz/hedc/learning/>. SLC resources are free to all enrolled Otago students. In addition:

- If you live in a hall of residence, inquire with your RA or Master to see if your hall offers a tutorial for EAOS 111.
- If you do not live in a hall of residence, you may be eligible to participate in the SLC's EAOS 111 Peer Assisted Study Sessions (PASS). Learn more about PASS at <http://hedc.otago.ac.nz/hedc/learning/pass-sessions/>.

New to Otago? If so, the University has heaps of resources just for you. Check them out at <http://www.otago.ac.nz/mofy>.

LAB BOOK: Your EAOS 111 lab book is yours to keep. You can bring it with you to lab tests, so write your name on it and keep it up-to-date.

FIELD TRIPS:

EAOS 111 gives you lots of opportunities to get into the field. The paper includes:

- Two day-long weekend field trips to learn about the geology of North Otago and the Taieri River (sign-up the week before each trip)
- A short cruise on the university's research vessel *Polaris II* (most during lab time, with additional sections to be announced) to learn about marine geology and geophysics in Otago Harbour and around Taiaroa Head (sign-up the week before the cruise)
- A trip to Portobello Marine Lab on the Otago Peninsula to learn about marine biodiversity. This trip takes place during lab time, but requires 4 hours. **For Portobello week only, morning lab streams will run from 8-11:50 a.m. and afternoon lab streams will run from 2-5:50 p.m.** If you live in a hall of residence and are enrolled in an afternoon lab, consider requesting late dinner.

The two weekend field trips have an associated worksheet, which is handed in and marked "Satisfactory" (100%) or "Unsatisfactory" (0%). These trips provide you with an opportunity to apply the concepts you learn in lecture and lab to a field setting, a key skill in Earth science. Attendance on both weekend trips and satisfactory completion of both worksheets will earn you 11% toward your final paper mark. *Polaris* and Portobello assessments are worth 2% each. Examinations include compulsory questions related to the field trips.

ASSESSMENT:

Your final grade for EAOS111 is made up of the following:

6% North Otago field trip: Saturday 12 **OR** Sunday 13 March – **worksheet due Monday 14 March, noon, Dept office 1n14**

5% Lab test: **21 March – 25 March**, in your lab time

10% Class exam: **Friday 8 April**, 12:00 – 12:50 pm

5% Taieri field trip: Saturday 16 **OR** Sunday 17 April – **worksheet to be handed in to demonstrators at end of trip**

2% *Polaris* field trip quiz **on Blackboard – due Monday 2 May, 5 p.m.**

2% Portobello lab assessment – **worksheet due Monday 16 May, noon, Dept office 1n14**

15% Final practical exam: **30 May – 3 June**, in your lab time

55% Final theory exam (date and time to be advised by University)

2%* Essential library skills quiz **on Blackboard** for *extra credit* – **due Friday 18 March, 5 p.m.**

BLACKBOARD:

Blackboard (blackboard.otago.ac.nz) will be used extensively in this paper. For example:

- Announcements will be posted on Blackboard and/or **sent to your student e-mail address** via the Blackboard e-mail facility. If you use an alternate email address, make sure your student email is set up to forward.
- You can easily contact individual instructors via e-mail through Blackboard or through department web pages.
- Some internal assessments (quizzes) will be conducted on Blackboard.
- Internal assessment marks will be uploaded as they are completed during the semester.
- Handouts (see below) and Otago Capture recordings for most lectures can be downloaded from Blackboard.

HANDOUTS:

You will not receive paper handouts for EAOS 111. Lecturers who provide handouts will endeavour to upload PDFs to Blackboard before lecture so you can bring in your preferred format (paper, digital, etc.). These will remain available on Blackboard for the entire semester, allowing you to access handouts at higher resolution and in colour. **Some of your lecturers will not provide handouts and many draw diagrams on the whiteboard: always bring a pen and paper to class so you can include sketches in your notes.**