

OCN 330 / ORE 330
Mineral & Energy Resources of the Sea
Fall 2008
T-Th ♦ 10:30-11:45 am ♦ MSB 315

COURSE SYLLABUS[†]

Instructors: John C. Wiltshire (JW)	johnw@soest.hawaii.edu	Ph: 956-6042, MSB 319 (ofc hrs by appt)
Gary M. McMurtry (GM)	garym@soest.hawaii.edu	Ph: 956-6858, MSB 325 (ofc hrs by appt)

AUG 26	Introduction to course	JW/GM
28	Peak Everything I: Population & Fossil Fuels	GM
SEPT 2	Peak Everything II: Minerals	GM
4	Mid-ocean ridges, basins and trenches	GM
9	Overview of submarine hydrothermal systems	GM
11	Origins of high and low-temperature hydrothermal deposits	GM
16	Recycling of ocean crust and the Geostill Concept	GM
18	Chemistry of hydrothermal vents and polymetallic sulfides I	GM
23	Chemistry of hydrothermal vents and polymetallic sulfides II	GM
25	Introduction to Ocean Energy	JW
30	Oil and gas deposits; Future oil provinces	JW
OCT 2	Oil and Gas: Resources & politics of oil & gas, oil spills & oil spill recovery	JW
7	Methane hydrates	JW
9	OTEC (Ocean thermal energy conversion)	JW
14	Wind power	JW
16	Wave power	JW
21	Current and tidal power	JW
23	Energy futures, hydrogen, fuel cells	JW
28	*** MIDTERM EXAMINATION ***	GM
30	Placer deposits	GM

CONTINUED on REVERSE

[†] *Schedule subject to change without notice*

NOV 4	*** ELECTION DAY - NO CLASSES ***	
6	Fresh water and desalination	JW
11	*** VETERANS DAY HOLIDAY ***	
13	Geology of ferromanganese crusts and nodules	GM
18	Chemistry of crusts and chemical variability with age	GM
20	Platinum and phosphorite-rich layers: Seawater vs. extraterrestrial sources	GM
25	Mining technology for manganese nodules, crusts and sulfides	JW
27	*** THANKSGIVING HOLIDAY ***	
DEC 2	Phosphorites I	GM
4	Phosphorites II	GM
9	Marine minerals development - Legal and environmental issues	JW
11	Marine minerals as possible economic deposits, world metal markets *** LAST DAY OF CLASSES ***	JW

Tues DEC 16 9:45 am - 11:45 am, MSB 315 * FINAL EXAMINATION *****

Distribution of Grade Points:	Homework Assignments	20%
	Midterm Exam	40%
	Final Exam	40%

Student Learning Outcomes (SLOs)

Upon successful completion of OCN/ORE 330, the student should be able to:

- 1) Understand the various types of marine minerals, their mode of formation and their importance geologically and economically.
 - 2) Understand the various options for deriving energy from the ocean and the potential advantages and disadvantages of each.
 - 3) Understand the legal, environmental, economic and technical difficulties in extracting minerals and energy from the ocean.
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