

# OCN 201 Fall 2009 Exam 2 Study Guide

Exam 2 will be on Wednesday, November 4<sup>th</sup>, during the normal time and place for class. Past exams are posted on the OCN 201 website,

[http://www.soest.hawaii.edu/oceanography/courses\\_html/OCN201/](http://www.soest.hawaii.edu/oceanography/courses_html/OCN201/)

It is highly recommended that you review the previous exams, *then* consult the TA's during office hours to answer any remaining questions. This review is not extensive, nor is it a guarantee of what will be on the test, it is a guideline only.

## Bring your UH ID and a #2 pencil to the Exam!

### Key Terms and Concepts:

Marcet's principle	Hadley cells	Diurnal, semidiurnal and mixed tides
Major Ions	Ferrell cells	
Residence time	Polar cells	
	Coriolis effect	Historic CO2 levels
Hydrothermal vents	Trade winds, easterlies, westerlies	Greenhouse gases
		Carbon reservoirs
Nutrients	Ekmal transport	Sea level
Micronutrients	Geostrophic balance	Global temperature change
Limiting nutrient	Gyres and their currents	
	Boundary currents	
Salinity/halocline	Upwelling	
Temperature/thermocline		
Density/picnocline	Southern Oscillation	
Thermohaline Circulation	El Nino	
Tritium		
	Capillary waves	
Heat Capacity	Wind waves	
Reflection and refraction	Wavelength, wave height, period	
Scattering	velocity	
Light absorption	Deep water waves	
SOFAR layer	Shallow water waves	
Heat budget on earth	Fetch wind duration and intensity	
	Wave trains	
Conduction	Refractions, dispersion and	
Convection	shoaling	
Radiation	Surf prediction	
Atmospheric composition	Internal waves	
High pressure		
Low pressure	Storm surges	
Redistribution of heat on Earth	Tsunami	

## Practice questions

(Please look at past exams for the most thorough review of the material)

1. What is the typical amount of salt in seawater? What is this composed of, for the most part (which comprise 99% of total salts)?
2. What is Marquet's Principle and how is this related to the residence time of an ion?
3. How are seawater chemicals altered by hydrothermal vent processing?
4. What nutrients are typically limiting?
5. What processes control the vertical nutrient distributions of nitrate, phosphate and silicate?
6. What controls water density? How does this relate to the thermohaline circulation?
7. How does thermohaline circulation relate to deep water concentrations of nutrients across the globe?
8. Why is the ocean blue?
9. What are the forces controlling the major pattern of surface water circulation, that is, the gyres?
10. Describe El Nino and "Normal" conditions in the equatorial Pacific Ocean.
11. What are differences between deep and shallow water waves? How is wave speed calculated for these different wave types?
12. What forces control tidal heights?