

Physical Oceanography
OEAS 405/505 Fall 2009

Instructor: Tal Ezer

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Office Hours: Tuesday, 1pm-3pm (email to schedule any other time)

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Class time: Monday, Wednesday, 5:00pm-6:15pm

Place: Room 3202, CCPO, Research Bldg. I, 4111 Monarch Way

Web page for class: http://www.ccpo.odu.edu/~tezer/405_505/

Official Textbook –

Knauss, 1997: Introduction to Physical Oceanography, Second Edition, Waveland Press.

Other useful books-

Stewart, 2006 (web): Introduction to Physical Oceanography
(http://oceanworld.tamu.edu/home/course_book.htm)

Pickard & Emery, 1982: Descriptive Physical Oceanography

More advanced-

Pond & Pickard, 1983: Introductory Dynamic Oceanography

Mellor, 1996: Introduction to Physical Oceanography

Other supporting resources will be used such as web resources for online data, journal articles, results from computer models, etc.

Grading:

- Homework assignments: 30%
 - Examination #1 (28-Sep-2009): 20%
 - Examination #2 (9-Nov-2009): 20%
 - Final Examination (14-Dec-2009): 30%
- Assignment must be returned on time for full grade
 - Please type or write clearly

Follow ODU “Honor Code” and “Code of Student Conduct”

**Fall 2009 OEAS 405/505 classes schedule, topics and related book chapters
(Knaus, Stuart, Pond-Emery, Pond-Pikard)**

Date	Topic	K	S ; P-E ; P-P
M-31-AUG	Introduction-what is physical oceanography, history	1	1 1 -
W-02-SEP	What properties we observe in the ocean and how	1	2-3 1 2
M-07-SEP	Labor Day- no class		
W-09-SEP	Properties of seawater & distribution in oceans	2	6 3
M-14-SEP	Equation of state, stability and stratification	2	6 3
W-16-SEP	Air-sea heat transfer	3	5 5
M-21- SEP	Local heat balance & seasonal thermocline	3	5 4
W-23- SEP	Water and salt balances	4	5 5
M-28-SEP	Exam 1		
W-30-SEP	Continuity equation, mixing and turbulence	4	7 - 4
M-05-OCT	Equations of motions- pressure gradient and friction	5	7 - 6,8
W-07-OCT	Equations of motion- Coriolis and vorticity	5	7, 8 - 9
M-12-OCT	Fall Break- no class		
W-14-OCT	Effects of rotation, geostrophic flow	6	10 - 8
M-19-OCT	Baroclinic and barotropic flows	6	10 - -

Date	Topic	K	S ; P-E ; P-P
W-21-OCT	Ekman transport	6	9 - 9
M-26-OCT	General ocean circulation theory	6	11 7 -
W-28-OCT	Major ocean currents and circulation	7	11, 13 7 -
M-02-NOV	Major ocean currents – Equatorial Pacific and El Nino	7	11,13 7 -
W-04-NOV	Review of first half of course		
M-09-NOV	Exam 2		
W-11-NOV	Thermohaline circulation and water masses	8	11,13 7 -
M-16-NOV	Waves- wind driven	9	16 - 12
W-18-NOV	Waves- tsunami & others	9	16 - 12
M-23-NOV	Astronomical Tides- theory	10	17 - 13
W-25-NOV	Thanksgiving Holiday- no class		
M-30-NOV	Tides- observations and prediction	10	17 - 13
W-02-DEC	Coastal Ocean: Estuaries	11	17 8 -
M-07-DEC	Coastal Ocean: Semienclosed Seas	11	17 8 -
W-09-DEC	Review for final exam	All	
M-14-DEC	Final Exam		