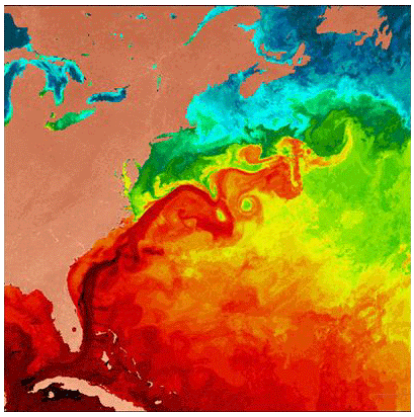
Syllabus
Physical Oceanography
OEAS 405/505
Fall 2016



Instructor: Tal Ezer

Office: CCPO, Innovation Research Park I, 4111 Monarch Way, Room 3217
Office Hours: Tuesday, 09:00am-11:00am (email to schedule any other time)
Telephone Number: 683-5631; Email address: tezer@odu.edu

Class time: Monday, Wednesday, 5:00pm-6:15pm
Place: Room 3200, CCPO, Research Bldg. I, 4111 Monarch Way
Web page for class notes: **http://www.ccpo.odu.edu/~tezer/405_505/**

Objectives: The course will provide a broad background of the concepts of Physical Oceanography, including topics such as observation instruments, seawater properties, basic theories of ocean dynamics, and major ocean currents. The class will provide a basic understanding of how the ocean works and how physical oceanographers conduct their studies.
Prerequisites: One semester of calculus and two semesters of physics, hydraulics or similar courses.

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, satellite remote sensing, etc.

Grading:
- Homework assignments: 40%
- Exam #1 (26-Sep-2016): 20%
- Exam #2 (07-Nov-2016): 20%
- Final Exam (12-Dec-2016): 20%

– Assignment must be returned on time for full grade (due in 1 week)
– Please type or write clearly; work independently
– Students are expected to follow ODU's "Honor Pledge" and "Classroom Conduct" (see attached pages: *University Policies*).

Fall 2016 OEAS 405/505 classes schedule and Knauss book chapters

Date	**Topic**	Book Chapter
M-29-AUG	First Class – Introduction to Physical Oceanography	1
W-31-AUG	What properties we observe in the ocean and how	1
M-05-SEP	Labor Day- no class	
W-07-SEP	Properties of seawater & distribution in oceans	2
M-12-SEP	Equation of state, stability and stratification	2
W-14-SEP	Air-sea interaction and heat transfer	3
M-19- SEP	Local heat balance and the seasonal thermocline	3
W-21- SEP	Water and salt balances	4
M-26-SEP	Exam #1	1-4
W-28-SEP	Continuity equation, mixing and turbulence	4
M-03-OCT	Equations of motions- pressure gradient & friction	5
W-05-OCT	Equations of motion- Coriolis effect and vorticity	5
M-10-OCT	Fall Break- no class	
W-12-OCT	Effects of rotation, Inertial & Geostrophic flows	6
M-17-OCT	Geostrophic current calculations	6
W-19-OCT	Baroclinic and barotropic flows	6
M-24-OCT	Ekman transport	6
W-26-OCT	General ocean circulation theory	6
M-31-OCT	Major ocean currents and circulation	7
W-02-NOV	Major ocean currents – Pacific and El Nino	7
M-07-NOV	Exam #2 (5:00-6:30pm)	4-7
W-09-NOV	Thermohaline circulation and water masses	8
M-14-NOV	Waves- wind driven	9
W-16-NOV	Waves- tsunami & others	9
M-21-NOV	Astronomical Tides- theory	10
W-23-NOV	Thanksgiving Holiday- no class	
M-28-NOV	Tides- observations and prediction	10
W-30-NOV	Coastal ocean	11
M-05-DEC	Estuaries and semi-enclosed seas	11
W-07-DEC	Review for final exam	
M-12-DEC	**Final Exam**	All