



**School of Arts & Science**  
**CHEMISTRY AND GEOSCIENCE DEPARTMENT**  
**GEOS 110-001**  
**Earth-Ocean-Atmosphere System**  
**2009 Winter**

## COURSE OUTLINE

This course introduces the interrelationships of the Earth-Ocean-Atmosphere system. Discussion of the origin of this system leads to consideration of physical and chemical properties and processes, and the distribution of chemical components and energy through the system. Short and long-term changes are investigated.

### 1. Instructor Information

(a)	Instructor:	Alan Gell		
(b)	Office Hours:	Mon, Wed:2:30-3:20, 6:00-6:20; Thurs: 2:30-3:20		
(c)	Location:	F344B		
(d)	Phone:	250-370-3446		
(e)	Email:	gella@camosun.bc.ca		
(f)	Website:			

### 2. Intended Learning Outcomes

Upon completion of this course the student will be able to:

1. Describe and interpret short-term and long-term Geologic, Oceanic and Atmospheric processes and their interactions.
2. Make hypothesis-based scientific observations, analyze and interpret quantitative data with reference to Geologic, Oceanic and Atmospheric processes.
3. Comment on orbital motion and wave motion and apply standard equations to compute wave velocity.
4. Use simple laboratory equipment to study and measure wave velocity.
5. Utilize standard tide and current tables and software.
6. Interpret relationships among temperature, salinity and density of seawater, and how these properties vary over time.
7. Describe ocean current transport and be able to assess the role of currents in global heat transfer.
8. Describe relationships among surface ocean currents and atmospheric circulation.
9. Analyze grain size of sediment samples and interpret current environment and sedimentary environment of deposition from sediment data.
10. Determine salinity of water samples and the relationship of salinity to temperature, density and dissolved gases.
11. Comment on the energy budget of the atmosphere, and its short-term and long-term variability.
12. Comment on the chemical evolution of the atmosphere.
13. Describe coastal processes at the land-sea interface.
14. Relate ocean-floor topography and ocean depth data to processes of sea-floor spreading and the age of ocean basins.

### 3. Required Materials

- (a) **Text: Oceanography and Atmospheric Science**, 4th custom edition, UVic, Published by Pearson
- (b) Other

### 4. Course Content and Schedule

**Lectures:** Mon, Wed F336: 3:30-4:50

**Lab:** Thurs: F300: 3:30-6:20

### 5. Basis of Student Assessment (Weighting)

- (a) **Labs:** 10 labs, each worth 2.5% of the course for a total of 25%
- (b) Quizzes
- (c) **Exams:** Tests 1, 2, each worth 15%; Final worth 25%
- (d) **Term Project:** paper or experiment or field observations and report (or other approved activity) worth 20%

### 6. Grading System

Standard Arts and Science Grading System

### 7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

#### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at [camosun.ca](http://camosun.ca).

#### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.