

UNIVERSITY of TORONTO at SCARBOROUGH  
Department of Physical & Environmental Sciences

January 2018  
Oceanography EES C19

The world's oceans constitute more than 70 % of the earth's surface environments. This course will introduce students to the dynamics of ocean environments, ranging from deep ocean basins, to marginal seas, to the coastal ocean. The physical nature of ocean

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Thursday 9:00-11:00 Room: HW214

Thursday 11:00-12:00 Room: either in HW215, in computer labs BV471 or demos in



**6 F 15**

In class midterm scheduled – 1:30 duration.

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**7 1 OCEAN CURRENT SYSTEMS I:**

Pacific Ocean

El Nino Southern Oscillation (ENSO)

Indian Ocean

Tropical Monsoon

The Equatorial Current Systems

The Subtropical Gyres

The Equatorial Undercurrent

**8 8 OCEAN WATER MASSES**

Heat Budget & Conservation of Salt

Upper & Intermediate Water Masses

Deep and Bottom Water Masses

Ocean Mixing

**ASSIGNMENT 4 issued: Temperature-salt diagrams – due week 10**

**9 15 MARINE-FRESHWATER INTERFACE: ESTUARIES**

Morphology & Estuary Types

Estuarine Processes

Environmental Problems

## TEXTBOOK

Two texts from the UK Open University that will be used in this course as the textbook. You can buy them from Amazon but these two books are available online through the U of Toronto library website

Ocean circulation –

<http://simplelink.library.utoronto.ca/url.cfm/51807>

Waves, tides, and shallow-water processes -

<http://simplelink.library.utoronto.ca/url.cfm/51808>

Other useful texts are "Regional Oceanography: an Introduction" by Matthias Tomczak and Stuart Godfrey. A PDF version of this book is available at

<http://gyre.umeoce.maine.edu/physicalocean/Tomczak/regoc/pdfversion.html>

A more technical book is "Introduction to Physical Oceanography" by Robert Stewart.

A PDF version of this book is available at

[http://oceanworld.tamu.edu/resources/ocng\\_textbook/PDF\\_files/book\\_pdf\\_files.html](http://oceanworld.tamu.edu/resources/ocng_textbook/PDF_files/book_pdf_files.html)

and the online version is available at

[http://oceanworld.tamu.edu/resources/ocng\\_textbook/contents.html](http://oceanworld.tamu.edu/resources/ocng_textbook/contents.html)

We are also able to access the online "Encyclopedia of Ocean Sciences". The encyclopedia was published in 2001 and is the most up-to-date resource on oceanography available. Here is a link to the encyclopedia

<http://simplelink.library.utoronto.ca/url.cfm/282540>