



**DEPARTMENT OF GEOMATICS ENGINEERING**  
**UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING**  
**COURSE SYLLABUS**

<b>COURSE</b>	Name	Physical Oceanography
	Code	RM184410
	Credits	3 (three)
	Semester	IV (four)

**COURSE DESCRIPTION**

This lecture is designed to introduce students to the important physical processes that occur in the oceans in such a way that they will understand conceptual physical principles and on a larger scale how this system includes into part of the earth as a unitary system. The initial focus was to develop the basic equations that illustrate the principles underlying physical oceanography. These principles are then used to help understand density, salinity, temperature, ocean depth, waves, tides, currents, and deep ocean circulation. Throughout the lecture, case examples will be given to show how physical oceanography affects and is influenced by the ocean.

**EXPECTED LEARNING OUTCOME**

A	Able to apply mathematics, science, and engineering in the fields of geodesy, surveying, hydrography, remote sensing, photogrammetry, geographic information systems, and cadastral to gain a thorough understanding of the principles of
F	Able to compile scientific reports and provide solutions based on leadership, creativity and communication skills as well as being responsible for the work done.

**COURSE LEARNING OUTCOME**

1	Students are able to understand definitions, concepts, theories, history and applications of oceanography, especially
2	Students are able to know the relationship between temperature, density, salinity, conductivity, pressure and depth of
3	Students are able to understand the relationship between the influence of the atmosphere with the ocean
4	Students are able to understand the heat balance that occurs in the ocean
5	Students are able to understand the concepts and relationships between wind, currents, waves and circulation in the
6	Students are able to understand the concept of high tide and its impact on the beach process

**COURSE MATERIALS**

1	Definitions, concepts, theories, history and application of oceanography especially physical oceanography
2	Temperature, salinity, density, conductivity, pressure and depth of the sea
3	Atmospheric effects on the ocean
4	Winds, waves, currents, circulation in the deep sea
5	Tides and seawater processes
6	Ocean heat balance and impact

**PREREQUISITE**

Physics 1 and Physics 2

**REFERENCES**

A.	Main References
1	Stewart, R.H., 2000. Introduction to Physical Oceanography. Department of Oceanography
2	Thurman, Harold V. 1994. Introductory Oceanography. Columbus: Charles
3	
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B.	Additional References
1	Open University. 1989. Waves, Tides and Shallow-Water Processes. Oxford: Pergamon Press.
2	Open University. 1989. Ocean Circulation. Oxford: Pergamon Press
3	Open University. 1989. Seawater: Its Composition, Properties and Behaviour. Oxford: Pergamon Press.
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