DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Seabed Features
	Code	RM184941
	Credits	3 (three)
	Semester	VIII (eight)

COURSE DESCRIPTION

The Seabed Feature is an elected course hydrography field which aims to identify seafloor panoramas or morphology with an imaging. In this course students will learn about the definition and identification of features that exist on the seabed. The referred seabed features consists of two kinds, namely natural seabed features and artificial seabed features. This course will also discuss about the instruments utilized for data acquisition in detecting the seabed features and also the data generated from each of these instruments.

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
C	Able to identify, formulate, analyze and solve problems in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.
E	Able to apply information & communication technology and the latest technological developments in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, geographic information systems, and cadastral.

COURSE LEARNING OUTCOME

1	Able to explain about the definition and various basic water features.
2	Able to analyze backscatter data, watercolumn and bathymetry data from the results of hydrographic survey.
3	Able to identify objects at the bottom of the sea.
4	Able to explain the instruments used in data collection of seabed features and data processing software.
5	Able to explain method used in data collection on seabed features.
6	Able to explain sub-buttom profiler data validation procedures.

COURSE MATERIALS

1	Definitions and various basic water features.
2	Backscatter, watercolumn and bathymetry data.
3	Identification of objects at the bottom of the sea
4	Instruments and software for identification of seabed features
5	The method used in data collection on seabed features.
6	Validating the sub-bottom profiler data.

PREREQUISITE

Seabed Imaging and Mapping

REFERENCES

A.	Main References
1	Hampton, L. Physics of Sound Marine Sediments. New York. Plenum Press, 1974.
2	Lurton, Xavier. An Introduction to Underwater Acoustic: Principles and Applications. Perancis. Praxis Publ. 2002.
3	Cervenka, P. and de Mouster, C. Side Scan Sonar imaging processing techniques, IEEE journal of ocean engineering.1993.
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B.	Additional References

1	Jackson, D.R. and Briggs, K.B. High Frequency bottom backscattering, Journal of the acoustical society of america.1986.
2	LeBlanc, L.R., Mayer, L. Rufino, M. Schock, S.G. and King, J. Marine sedimet classification using chirp sonar. Journal of the acoustical society of america. 1992a.
3	Chan, Y.T. Underwater acoustic data processing (NATO ASI Series). Dordrecht, The Netherlands: Kluwer Academic. 1988.
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