DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Hidrographic Survey
	Code	RM184516
	Credits	3 (three)
	Semester	V (five)

COURSE DESCRIPTION

This lecture focuses on hydrographic, navigation, and hydrographic surveys. This lecture gives students an understanding of the concepts of coordinates, measurement, underwater acoustics, positioning, sound waves, and various sources of hydrographic data and information. Students study a variety of survey technology, development, and various hydrographic applications. This course is designed to bridge geography, coastal and marine studies, oceanography, digital mapping, hydrographic surveys, marine spatial planning, remote sensing, and Geographic Information Systems (GIS). Practical experience with hydrographic charts and tidal tables for navigation provides an opportunity to introduce students to a skilled field that can form the basis for a future career.

EXPECTED LEARNING OUTCOME

B	Able to design survey and mapping activities using the latest technology in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.
C	Able to identify, formulate, analyze and solve problems in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.
D	Able to perform spatial data acquisition using modern measurement methods, geospatial data processing, using industry standard software, and making standard designs and analyzes in the fields of geodesy, surveying,
F	Being 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 know the concepts, theories and applications of hydrographic surveys
2	Students are able to plan hydrographic surveys
3	Students are able to process tidal data to determine datum charts
4	Students are able to perform horizontal position measurements at sea
5	Students are able to measure survey depth with a variety of methods (mechanical, acoustic, non-acoustic)
6	Students are able to draw hydrographic maps

COURSE MATERIALS

1	Definition, theory and application of hydrographic surveys
2	Hydrographic Survey Planning
3	Vertical datum and datum chart
4	Determination of horizontal position at sea
5	Ocean depth measurement methods (acoustic and non acoustic)
6	Hydrographic maps and bathymetry maps

PREREQUISITE

Advanced Terrestrial Mapping

REFERENCES

A.	Main References
1	IHO., 2008. IHO Standards for Hydrographic Survey. 5th Edition. Special Publication 44. Monaco
2	Poerbandono., Djunarsjah, E. 2005. Survei Hidrografi. Bandung: Refika Aditama
3	IHO., 2005. Manual On hydrography. Monaco. International Hydrographic Beareau
B.	Additional References
1	Umbach, M.J. 1976. Hydrographic Manual Fourth Edition. U.S. Department of Commerce
2	Ingham, A., Abbott, V., 1992. Hydrographic Surveying, 3rd ed., Blackwell Scientific, Cambridge, MA 02142.