DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Advanced Terrestrial Mapping
	Code	RM184307
	Credits	4 (four)
	Semester	III (three)

COURSE DESCRIPTION

This course explains about topographic mapping. Besides that, it is necessary to explain related to the calculation of area and volume with various methods. Next explained the measurement by the tachimetry method, including the ability to measure using oll meters, measuring signs, theodolite and spirit level, total station. This tachimetry method was applied to determine horizontal and vertical positions: the back point binding method, and the Polygon method.

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.
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,
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.
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	Able to understand about Topographic Mapping.
2	Able to understand about the use of Mapping reference frame and apply it in real measurement.
3	Able to calculate and measure the position using resection method.
4	Able to measure and differentiate the height system being used.
5	Able to operate the Total Station, Theodolit and Waterpass equipment.
6	Able to understand and do measurement using the tachymeri method for mapping and getting to know the points in the field.
7	Able to draw terrain contours.
8	Able to calculate the area of land and also cut and fill

COURSE MATERIALS

1	Topographic Mapping
2	Mapping reference frame and applying it in measurements
3	Resection
4	Height system used
5	Procedure and application of using total station
6	Tachymetry method
7	Procedure for plotting detail points
8	Contour
9	Area and volume calculation

PREREQUISITE

Basic terrestrial mapping

REFERENCES

A.	Main References
1	Edward M. Mikhail dan Gordon Gracie. Analysis and Adjustment of Survey Measurement. Van Nostrand Reinhold Co
2	James M. Anderson dan Edward M. Mikhail. Surveying. Theory and Practice. Mc Graw Hill. New York
3	Kissam Philip. 1981. Surveying for Cvil Engieering. USA
4	Modul ajar Ilmu Ukur Tanah II
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B.	Additional References
1	Paul R. Wolf dan Charles D. Ghilani. Elementary Surveying. An Introduction to Geomatics. Pearson Education Interna
2	Paul R. Wolf dan Charles D. Ghilani. Elementary Surveying. An Introduction to Geomatics
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