



DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Engineering Survey
	Code	RM184413
	Credits	3 (three)
	Semester	IV (four)

COURSE DESCRIPTION

In this lecture will be given the basics of mathematics that cover the geometry and trigonometry in the field of geomatics for applications in the field of civil engineering (buildings and infrastructure, road geometry, elevation planning and planimetric positions, cut and fill). The role of geomatics in engineering and methods to support applications in civil engineering. To further strengthen student skills, practical materials will be provided in the field in accordance with the subject matter and application in the field of civil engineering

EXPECTED LEARNING OUTCOME

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	Able to compile scientific reports and provide solutions based on leadership, creativity and communication skills as well as being responsible for the work done.
G	Able to plan, perform and evaluate the process of surveying and mapping activities using the latest technology in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.
H	Able to work in inter-disciplinary and inter-cultural teams so they can compete at national and international levels.

COURSE LEARNING OUTCOME

1	Understand the use of basic mathematical formulas, geometry and trigonometry.
2	Able to measure the height and slope of a building.
3	Able to do horizontal and vertical staking out for simple curves.
4	Capable of measuring and staking out (uit zet) for buildings.
5	Able to measure and calculate soil volume (cut and fill).

COURSE MATERIALS

1	Fundamentals of mathematics Geometry and trigonometry.
2	Building height measurement application.
3	Road geometry.
4	Horizontal and vertical alignment.
5	Horizontal and Vertical Staking Out Alignments.
6	Staking out of buildings and lots.
7	Measurement and calculation of the volume of cut and fill.

PREREQUISITE

Advanced terrestrial mapping

REFERENCES

A.	Main References
1	Hendriatiningsih. Geometris Jalan Raya & Staking Out ITB. Bandung 1979
2	Paul R. Wolf dan Charles D. Ghilani. Elementary Surveying. An Introduction to Geomatics
3	Hickerson. Route Location And Design. Mc Graw-Hill Book
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B.	Additional References
1	Tumewu Liem, Engineering Survey . ITB. Bandung . 1977
2	Modul ajar Ilmu Ukur Tanah II
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