



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

<b>COURSE</b>	Name	Introduction to Earth Science
	Code	RM184202
	Credits	2 (two)
	Semester	II (two)

**COURSE DESCRIPTION**

In this course students learn about general concepts: basic concepts of Earth Sciences: atmosphere, hydrosphere, lithosphere and biosphere, basic concepts: Geodesy and Geomatics Engineering, Geophysical and Meteorological Engineering, Geological and Mineralogical Engineering, Petroleum and Mining Engineering. And Social and Physical Geography Techniques and basic concepts of Geodesy: reference ellipsoids, geometric ellipsoids, coordinate systems, Geodetic problem solving, coordinate transformation

**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 engineering
---	---

**COURSE LEARNING OUTCOME**

1	Able to understand general concepts: basic concepts of Earth Sciences: atmosphere, hydrosphere, lithosphere and biosphere.
2	Able to understand basic concepts: Geodesy and Geomatics Engineering, Geophysical and Meteorological Engineering, Geological and Mineralogical Engineering, Petroleum and Mining Engineering and Social and Physical Geographic Engineering.
3	Able to understand the basic concepts of Geodesy: reference ellipsoide, geometric ellipsoida, coordinate system, Geodetic problem solving, coordinate transformation.
4	Having knowledge about Social and Physical Geography.
5	Having knowledge about natural resource problems, the environment and disasters.

**COURSE MATERIALS**

1	Basic concepts of Earth Sciences: atmosphere, hydrosphere, lithosphere and biosphere,
2	Basic concepts: Geodesy and Geomatics Engineering, Geophysical and Meteorological Engineering, Geological and Mineralogical Engineering, Petroleum and Mining Engineering.
3	Basic concepts of Geodesy: reference ellipsoids, geometric ellipsoids, coordinate systems, problem solving Geodesy, coordinate transformation.
4	Basic concepts of Social and Physical Geography.
5	Natural resource, environmental and disaster problems.

**PREREQUISITE**

<b>REFERENCES</b>	
-------------------	--

A.	Main References
1	Bomford. Geodesy. 1975. Oxford University Press.
2	Richardus, Adler. Map Projections for Geodetic, Cartographers, Geographers. 1972. NHPC. Amsterdam.
3	
4	
5	
B.	Additional References
1	Kervyn, M. Kervyn, F. Goossens, R. Rowland, S. K. and Ernst. G. G. J. 2007. Mapping volcanic terrain using high-resolution and 3D satellite remote sensing. Geological Society, London, Special Publications 283: 5-30
2	Lagios, E. Vassilopoulou, S. Sakkas, V. Dietrich, V. Damiata, B.N. Ganas, A. 2007. Testing satellite and ground thermal imaging of low-temperature fumarolic fields: The dormant Nisyros Volcano (Greece). < <a href="http://www.remsenslab.geol.uoa.gr">http://www.remsenslab.geol.uoa.gr</a> > . dikunjungi pada tanggal 21 Maret 2012, jam 13.30.
3	Turcotte, Donald, Schubert, Gerald. Geodynamics, 2001, Cambridge University Press
4	