



DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Introduction to Geographic Information System
	Code	RM184521
	Credits	3 (three)
	Semester	V (five)

COURSE DESCRIPTION

In this course, students will learn one of the main objectives in geographic information systems, namely the use of computer-based systems to manage geographic data. Basic theories about geographic information systems, components, data formats and methods of spatial data processing will be provided so that students will have knowledge about how to arrange, process, analyze, and interpret spatial data in geographic information systems. To understand and gain experience in compiling spatial data, students will be given the task of doing simple spatial data compilation as data attribute in spatial data. The process of converting spatial data used in geographic information systems will also be provided in this course.

EXPECTED LEARNING OUTCOME

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, hydrography, remote sensing,
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	Students are able to explain the concepts and definitions of Geographic Information Systems (GIS)
2	Students are able to identify data on Geographic Information Systems in the processing of spatial data
3	Students are able to compile spatial databases in GIS format
4	Students are able to represent spatial data in GIS format

COURSE MATERIALS

1	Definition of GIS, GIS Component
2	Data format, Spatial referencing
3	Converting data, spatial and non-spatial data structures
4	Spatial database, attribute database in GIS format

PREREQUISITE

1. Database System,
2. Digital Cartography,
3. Introduction to Remote sensing

REFERENCES

A.	Main References
1	Burrough P.A, Principle of GIS for Land Resources Assessment, Oxford, 1998
2	Christopher Jones, GIS and Computer Cartography, Longman England, 1999
3	Green D. and T. Bossomaier, Online GIS and spatial metadata. Taylor & Francis, 2002
4	Aronoff S., Geographic information systems: a management perspective. WDL Publications, 1989.
5	Teguh Hariyanto, Pendahuluan SIG, bahan ajar SIG, ITS Surabaya, 2009.
B.	Additional References
1	Kang-Tsung Chang, Introduction to Geopahic Information Systems, Fourth Edition. Singapore. Mc Graw Hill.2008