



DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM IN GEOMATICS ENGINEERING
COURSE SYLLABUS

COURSE	Name	Advanced Geographic Information System
	Code	RM184947
	Credits	3 (three)
	Semester	Elective Course

COURSE DESCRIPTION

In this course, students will study one of the main objectives in Applied GIS, namely the use of GIS in geographic data and analysis methods for vector and raster formats and attribute data. Basic theory The application of geographic information systems and their analysis systems, data formats and methods of raster data processing and formats, in various fields of applied planning, industry, environment, disaster will be provided so that students will have knowledge about how to arrange, process, analyze, and apply spatial data and attributes in geographic information systems. To understand and gain experience in compiling spatial data, students will be given the task of analyzing the spatial data that is used for its application in these 4 fields and can be in the form of WEB GIS.

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, hydrography, 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	Students are able to explain the concept of analysis in Geographic Information Systems
2	Students are able to identify the Geographic Information System data needed for application in the fields of planning, industry, environment and disaster.
3	Students are able to compile spatial and non-spatial databases for these applied fields
4	Students are able to represent the results of GIS analysis in the applied field, and can be in the form of WEBGIS.

COURSE MATERIALS

1	Spatial data concepts and definitions in GIS, Data Processing and Spatial Analysis Models with GIS
2	Identification of parameter data in the fields of planning, industry, environment and disaster, Database compilation
3	Database analysis model for planning, industry, environment and disaster parameters
4	Results presentation of data analysis for the fields of planning, industry, environment and disaster
5	The concept, definition and application of WEB GIS

PREREQUISITE

1. GIS,
2. Introduction to Remote Sensing,
3. Digital photogrammetry.

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	Kang-Tsung Chang, Introduction to Geogpahic Information Systems, Fourth Edition. Singapore. Mc Graw Hill.2008
B.	Additional References