	Module Description/Course Syllabi
	Study Programme : Magister of Soil Science
	Faculty of Agriculture
	Universitas Andalas

1. *Course number and name*

MIT 81208 Geographical Information System

3. *Credits and contact hours/Number of ECTS credits allocated*

3sks (2-1)

4. *Instructors and course coordinator*

1. Prof. Dr. Ir. Dian Fiantis, MSc; 2. Dr. Juniarti, SP, MP

4.*Text book, title, outhor, and year*

1. Longley, P. A., M. F. Goodchild, D. J. Maguire, D. W. Rhino. 2015. Geographical Information Science and Systems. Wiley, USA .522 hal.

2. Kohl, M., S. S. Magnussen, M. Marchetti. 2006. Sampling Methods, Remote Sensing ForestInventory. Springer. Berlin. 388 hal.

3. Burrough.1986. Principles of Geographical Information System for Land Resources Assessment. New York: Oxford University Press.

4. Demers,Michael N.1997.Fundamental of Geographic Information System. University of New Mexico,John Wiley and Sons,Inc.

5. Dulbahri.1995. SIG. Yogyakarta: Diktat Mata Kuliah SIG UGM

6. Laurini, Robert and Derek Thompson, 1992. Fundamentals of Spatial Information Systems. London: Academic Press Limited

5.*Specific course information*

A. *Brief description of the content of the course (catalog description)*
Geographical information systems (GIS) will study the concept of GIS in the context ofnatural and regional resource management; GIS definitions; main components; data forms andstructures (raster and vector), data entry, data organization and management; analysisfunctions (thematic classification/mapping, neighbors, linkages, and overlaps), as well asmodeling and simulation (gap analysis, multi-criteria analysis, multi-scale analysis, resourcebalance, etc.); product development; case studies of land use planning; natural disasters proneand regional development. (Practicum : data entry, data management, analysis and productcreation with ArcGIS and/or ArcView, IDRISI)

B. Course Content

Week Course Content

1 Introduction, definition and history of the development of the Land Information System

2 Basic principles of Land Information Systems, electromagnetic wave spectrum

3 Land Information System concept and application 4 Data collection and input of agricultural land geospatial data

5 Storage, data manipulation/processing, data entry and data presentation

6 Data Models, spatial data, vector data, raster data

7 Tables and Relational Databases

8 Spatial analysis and geoprocessing

9 Land database management

10 LIS application in the development of sustainable agricultural land

11 Web-based LIS application

12 LIS for Land Survey and Evaluation

13 LIS for watershed management

14 LIS for natural disaster management

C. Semester when the course unit is delivered

Even Semester

D. Mode of delivery (face-to-face, distance learning)

Face to face

6.Intended Learning Outcomes (CPL)

ILO 3 : An ability to use technology in identifying and solving problems of soil, landresource, environment problems independently, eligibly, and accurately **PI 1** : An ability to use technology to analyze soil

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7. Course Learning Outcomes (CPMK) ex. The student will be able to explain thesignificance of current research about a particular topic.

 A. Students will be able to use program in analyzing soil data for land management

8.Learning and teaching methods

Case Base Method

9.Language of instruction	
Indonesia and English (English Class)	
10.Assessment methods and criteria	

Summative Assessment :

1.Tasks : 5%

2.Quiz : 5 %

3. Mid Semester : 25%

4.Final Semester : 25%

5.Practikum :30%

6.Attendance : 5%

Formative Assessment:

1.Thumb up and thumb down

2.Minutes paper