



MODULE HANDBOOK

Geographic Information System

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Undergraduate Study Program for Geography
Faculty of Mathematics and Natural Sciences
Universitas Indonesia

Module designation	Geographic Information System
Semester(s) in which the module is taught	Fourth (4th) Semester
Person responsible for the module	Dr. Supriatna, M.T.
Lecturer	<ol style="list-style-type: none"> 1. Dr. Supriatna, M.T. 2. Adi Wibowo, Ph.D. 3. Riza Putera Syamsuddin, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Compulsory
Teaching methods	Student-centered Learning and combination with Cooperative Learning
Workload (incl. contact hours, self-study hours)	<ol style="list-style-type: none"> 1. Lectures: 100 minutes per week per semester 2. Assignment: 120 minutes per week per semester 3. Independent study: 120 minutes per week per semester 4. Minutes x weeks x semester: $340 \times 14 \times 1 = 4760$ minutes per semester 5. Midterm Examination: 100 minutes per semester 6. Final Examination: 100 minutes per semester 7. Total workload per semester: 4950 minutes / 82 hours 40 minutes
Credit points	2 (two)
Required and recommended pre-requisites for joining the module	<ol style="list-style-type: none"> 1. Cartography 2. Cartography Lab 3. Remote Sensing 4. Remote Sensing Lab 5. Surveying and Mapping 6. Surveying and Mapping Lab
Module objectives/intended learning outcomes	Able to study and analyze the basic principles and analysis in geographical information systems (sig), validate, identify and assess the needs, benefits and uses of geographic information systems for the purpose of making digital maps, as a spatial analysis tool and the basis of the modeling and the basis of the sig application
Content	<ol style="list-style-type: none"> 1. Introduction to Geography Information Systems 2. The Concept of a Spatial Database 3. Spatial Data Management 4. The Concept of Topology 5. The Concept of Geoprocessing 6. Point analysis 7. Line analysis (Network Analysis) 8. Polygon Analysis (Map Overlay) 9. Three-dimensional analysis (3D) 10. Modeling in Geography Information Systems 11. Application in Geography Information Systems
Examination forms	-

Study and examination requirements	<ol style="list-style-type: none">1. Quiz (10%)2. Individual Score (35%)3. Group Score (20%)4. Mid Examination (15%)5. Final Examination (20%)
Reading list	<p>Jan Kraak, Menno and Ferjan Ormeling, 2010, Cartography, Visualitation of Spatial Data,Prentice Hall Pub, Amsterdam</p> <p>Muehrcke, Philips and Buckley Aileen..2011. Map Use. Essri Publication</p> <p>RW Anson, FJ Ormeling, 2013. Basic Cartogrphy, Elsevier Publishers Dent, Bordent D. 1996. Cartography : Thematic and Map Design. W.C. Brown Publishers London</p> <p>Gretchen N Peterson,, 2009, GIS Cartography, Taylor and Francis Group NY. USA</p> <p>Raisz Erwin.1948. General Cartography. John Wiley and Sons Canada</p> <p>M.J Kraak & F. Ormeling. Cartography: Visualization of Geospatial Data, Fourth Edition. 2020. CRC Press</p> <p>B. Cynthia. Designing Better Maps: A Guide for GIS Users. 2015. ESRI Press</p> <p>I.M. Sandy. Esensi Kartografi. 1988. Jurusan Geografi FMIPA UI Depok</p>