



MODULE HANDBOOK

Spatial Simulation and Modeling

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

Spatial Simulation and Modeling

Module designation	Spatial Simulation and Modeling
Semester(s) in which the module is taught	seventh (7th) 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.
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. Geographic Information System 2. Geographic Information System Lab
Module objectives/intended learning outcomes	The learning achievement of this course is that students will be able to assess and formulate spatial models for spatial decision making based on geographical data and information using geographical information system software. The learning method used and trained is by interactive lectures and active learning through small group discussions and case-based learning
Content	<ol style="list-style-type: none"> 1. Simulation and models concepts 2. Simulation and models concepts in geographic information systems 3. The concept of geographical factors in spatial decision making 4. Spatial decision making concepts 5. Flow of geographic information in spatial decision making 6. Alternative method in spatial decision making 7. Formulation and manufacture of simulations and spatial models for spatial decision making
Examination forms	-
Study and examination requirements	<ol style="list-style-type: none"> 1. Individual Works (20%) 2. Group Works and Presentation (20%) 3. Mid-Term Exam (15%) 4. Final Paper (15%) 5. Presentation (15%) 6. Final Exam (15%)

Reading list	<p>Supriatna, (2001), Dasar-Dasar Sistem Informasi Geografis. Departemen Geografi FMIPA UI, Depok, Indonesia</p> <p>Supriatna (2009): Sistem Informasi Geografis, Analisis & Aplikasi. Departemen Geografi FMIPA UI, Depok, Indonesia</p> <p>David L. Verbyla, (2002): Practical GIS Analysis, Taylor & Francis, London, UK</p> <p>Edy Irwansyah (2013),Sistem Informasi Geografis : Prinsip Dasar dan Pengembangan Aplikasi (2013), DIGIBOOKS, Yogyakarta, Indonesia</p> <p>Rustiadi, E., 2018. Perencanaan dan pengembangan wilayah. Yayasan Pustaka Obor Indonesia.</p> <p>Howe,D.R, 1992. Data Analysis for Database Design. International Institute for Aerospace & Earth Sciences ITC, Netherland</p> <p>De Mers, 2000. Fundamentals of Geographical Information Systems, John Wiley & Sons, Inc. New York.</p> <p>Laurini & Thomson, 1996. Fundamentals of Spatial Information Systems. Academic Press, London.</p> <p>Michael, B. (1996). GIS & Environmental Modelling: Progress & Research Issue. New York: GIS World Books, Fort Collins.</p> <p>Supriatna. Sistem Informasi Geografis: Analisis dan Aplikasi. 2018. Departemen Geografi FMIPA UI</p> <p>D. O’Sullivan & G.L.W. Perry. Spatial Simulation: Exploring Pattern and Process. 2013. John Wiley & Sons, Ltd, NY</p> <p>K.A.Vedra. GIS in Environmental Modeling. 1999. International Institute fci' Applied Systems Analysis Laxenburg, Austria</p>
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