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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Geographic Information System
Module level, if applicable	Bachelor
Code, if applicable	FIS424031
Subtitle, if applicable	-
Courses, if applicable	Geographic Information System
Semester(s) in which the module is taught	5th (fifth)
Person responsible for the module	Andi, M.Sc.
Lecturer(s)	Andi, M.Sc
Language	Indonesia
Relation to curriculum	Elective course in the third year (5th semester) Bachelor Degree
Type of teaching, contact hours	100 minutes lectures and 120 minutes structured activities per week.
Workload	Total workload is 90.6 hours per semester, which consists of 100 minutes lectures per week for 14 weeks, 120 minutes structured activities per week, 120 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	2
Requirements according to the examination regulation	Minimum attendance 75% All assignments submitted Attendance on time
Recommended prerequisites	No prerequisites stated on
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Formulate physical quantities in geophysical mapping to be able to present into interpretable model maps. CO 2. Analyze physical parameters in geophysical fields presented in maps to explain natural phenomena. CO 3. Formulate the most suitable geophysical parameters that can be presented in map form and interpreted to explain natural phenomena.
Content	1. Introduction to mapping (theory and application of mapping) 2. Coordinate system and Global Positioning System (GPS) 3. Survey design methodology and data acquisition 4. Properties and types of Geophysical Data 5. Data interpolation and extrapolation 6. Introduction to the Quantum Geographic Information System (QGIS) 7. Digital Elevation Model (DEM), 2D Model and 3D Model 8. QGIS application and geophysical model interpretation
Study and examination requirements and forms of examination	The final mark will be weighted as follows:

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NO	Assessment methods (components, activities)	Weight (percentage)
1	Final Examination	40%
2	Mid-Term Examination	30%
3	Class Activities : Quiz, Homework, etc.	30%

The final assessment is expressed in the form of a letter value converted from a number value with the following categories:

NO	Number Value	Letter Value	NO	Number Value	Letter Value
1	≥ 95	A	7	65-69.99	B/C
2	90-94.99	A-	8	60-64.99	C+
3	85-89.99	A/B	9	55-59.99	C
4	80-84.99	B+	10	50-54.99	C-
5	75-79.99	B	11	55-34.99	D
6	70-74.99	B-	12	<35	E

Media employed	White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)
Reading list	1. Otto Huisman and Rolf A, 2009, Principles of Geographic Information Systems, ITC, Enschede, The Netherlands 2. Ye Zhang, 2011, Introduction to geostatistics, Dept of Geology and Geophysics, University of Wyoming 3. Louise Croneborg, Keiko Saito, Michel Matera, Don McKeown, Jan van Aardt, 2015, Digital Elevation Models (A Guidance Note on how Digital Elevation Models are created and used), International Bank for Reconstruction and Development 1818 H street, NW, Washington, DC

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1			√					√	√
CO 2			√					√	√
CO 3			√					√	√