HANDBOOK MODUL

LAND SURVEYING

Module / Course Title	Student Workload	Credits	Semester	Frequency	Duration
8720202076	2 CU x 16 x 170’	2 CU 3.18 ECTS	5TH	ONCE YEAR	1 SEMESTER

	Types of courses	Contact hours	Independent Study	Structured Study	Class size
1	LECTURES PRACTICUM	(2CU x 1,59 ECTS) x {(100:170’) x 28,51 Workhours= 53,27	(2CU x 1,59 ECTS) x {(70:170’) x 28,51 Workhours= 37,29	-	MAX 40 STUDENT

2	**Prerequisites for participation (if applicable)** -
3	**Program Learning outcomes**
	PLO-3 Able to process, analyze, present geosphere data and information using geospatial technology for geography learning and research
	PLO-5 Able to demonstrate independent and collaborative performance that produces quality and measurable results
	PLO-9 Able to apply regional theory for sustainable regional planning and development
	PLO-11 demonstrate a responsible attitude towards work in their field of expertise independently
	Course Learning Outcome (CLO)
	CLO-3 Able to process, analyze, present data and information on areas mapped using theodolites for geography learning and research.
	CLO-5 Able to show independent and collaborative performance that produces quality maps

	CLO-9 Able to apply mapping theory in sustainable regional planning and development
	CLO-11 Demonstrate a responsible attitude for planning, measuring, calculating and plotting measurement results
4	**Learning materials** 1. Introduction: introduction to geometry, types of surveys, and maps 2. Measuring and measuring instruments: theodolite, distance measuring device, unit system 3. Knowledge of distances and angles, point positions, understanding of north and azimuth directions, calculation of distance/slope/azimuth/angle with a coordinate system 4. Polygons: intent, closed polygons, open polygons, requirements, measurement methods, calculations 5. Tachimetric method: principles, formulas, approaches, and measurement of height difference with tachimetry 6. Topographic maps: mapping datums, map scales, contour lines, situation mapping 7. Area Calculation
5	**Teaching methods** *Project Base Learning*
6	**Assessment methods** *paper test*
7	**This module/course is used in the following study programme/s as well** -
8	**Responsibility for module/course** Compulsory/Elective*/
9	1. Abidin Hasanuddin Z., 2008. Penentuan posisi dengan GPS dan aplikasinya. Jakarta : Pradnya Paramita 2. Basuki, Slamet. 2006. *Ilmu Ukur* Tanah. Yogyakarta: Universitas Gadjah Mada Press 3. Heinz, Frick, 1989, *Ilmu dan alat ukur tanah*, Yogyakarta : Kanisius. 20th.2006 4. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita. 5. Abidin Hasanuddin Z., 2002. Survey dengan GPS. Jakarta : Pradnya Paramita 6. Petunjuk praktikum Ukur Tanah Pendidikan Geografi 2018