	SEMESTER LEARNING PLAN **DEPARTMENT OF GEOMATICS ENGINEERING** **FACULTY OF CIVIL, PLANNING, and GEO ENGINEERING**			
PROGRAM	**UNDERGRADUATE**			
COURSE NAME	**Introduction to Earth Science**		**CODE**	**RM184202**
SEMESTER	**II (two)**		**CREDITS**	**2 (two)**
LECTURERS	**Prof Dr Ir Bangun Muljo Sukojo,DEA,DESS**			
COURSE MATERIALS	1	Basic concepts of Earth Sciences: atmosphere, hydrosphere, lithosphere and biosphere,		
	2	Basic concepts: Geodesy and Geomatics Engineering, Geophysical and Meteorological Engineering, Geological and Mineralogical Engineering, Petroleum and Mining Engineering.		
	3	Basic concepts of Geodesy: reference ellipsoides, geometric ellipsoids, coordinate systems, problem solving Geodesy, coordinate transformation.		
	4	Basic concepts of Social and Physical Geography.		
	5	Natural resource, environmental and disaster problems.		
EXPECTED LEARNING OUTCOMES THAT IMPOSED IN THE COURSE	A	Able to apply mathematics, science, and engineering in the fields of geodesy, surveying, hydrography, remote sensing, photogrammetry, geographic information systems, and cadastral to gain a thorough. understanding of the principles of engineering		
COURSE LEARNING OUTCOMES	1	Able to understand general concepts: basic concepts of Earth Sciences: atmosphere, hydrosphere, lithosphere and biosphere.		
	2	Able to understand basic concepts: Geodesy and Geomatics Engineering, Geophysical and Meteorological Engineering, Geological and Mineralogical Engineering, Petroleum and Mining Engineering and Social and Physical Geographic Engineering.		
	3	Able to understand the basic concepts of Geodesy: reference ellipsoide, geometric ellipsoida, coordinate system, Geodetic problem solving, coordinate transformation.		
	4	Having knowledge about Social and Physical Geography.		
	5	Having knowledge about natural resource problems, the environment and disasters.		
ABILITY CATEGORIES	*Cognitive Prosecess*	*Analyse*		
	Knowledge Domain	*Procedural*		
	Psychomotor	*Conscious control*		
	Affective	*Change of attitude*		

Class	Lesson learning outcome	Criteria dan Assessment Indicator	Weight	Learning Materials	Learning Experience	Learning Methods	Estimated Time
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Able to explain the basic concepts of Earth Sciences:	Material completeness, depth of explanation, effectiveness of	5	Explain the basic concepts of Earth Sciences	Lecturer	Teacher-centered learning	1 x 50'

	atmosphere, hydrosphere, lithosphere and biosphere,	communication, accuracy of attitude		Explain the concept of atmosphere,	Lecturer	Teacher-centered	1 x 50'
				Explain the concepts of lithosphere and	Lecturer	Teacher-centered	1 x 50'
2	Able to explain basic concepts: Geodesy and Geomatics Engineering.	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	5	Explain the Concept of Geodesy	Lecturer	Teacher-centered	1 x 50'
				Explain about Geomatics Engineering	Lecturer	Teacher-centered learning	1 x 50'
				Geomatics Engineering	Lecturer	Teacher-centered learning	1 x 50'
				Examples of actual case studies	Discussion	Student-centered learning	1 x 50'
3	Able to explain basic concepts: Geodesy and Geomatics Engineering.	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	10	Explain the basic concepts of Social Geography Engineering	Lecturer	Teacher-centered learning	1 x 50'
				Explain the basic concepts of Social	Lecturer	Teacher-centered	1 x 50'
				Able to explain the basic concepts of the relationship of Social and Physical Geography Techniques	Lecturer	Teacher-centered learning	1 x 50'
				Explain problems in the field of Geography	Lecturer	Teacher-centered learning	1 x 50'
					Exercise and assignment	Student-centered learning	1 x 50'
4 -5	Able to explain the basic concepts of Social Geography Engineering	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	10	Explain the basic concepts of Social Geography Engineering	Lecturer	Teacher-centered learning	2 x 50'
				Explain the application of Social Geography Techniques	Lecturer	Teacher-centered learning	2 x 50'
				Explain problems in the field of social geography	Lecturer	Problem-based learning	2 x 50'
					Exercise and assignment	Student-centered learning	1 x 50'
6	Able to explain the basic concepts of the basic concepts of Physical Geography Engineering	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	10	Explain the basic concepts of Physical Geography Engineering	Lecturer	Teacher-centered learning	1 x 50'
				Explain the application of Physical Geography Techniques	Lecturer	Teacher-centered learning	1 x 50'
				Explain problems in the field of Physical Geography	Lecturer	Teacher-centered learning	1 x 50'
					Assignment	Student-centered learning	1 x 50'
7	Able to explain the definition of the basic concept of	Material completeness, depth of explanation, effectiveness of	10	Explain the basic concepts of Geodesy	Lecturer	Teacher-centered learning	1 x 50'

	Geodesy: reference ellipsoide	communication, accuracy of attitude		Explain the basic concepts of Geodesy: Ellipsoida	Lecturer	Teacher-centered learning	1 x 50'
				Explain the basic concepts of Geodesy: Ellipsoida References	Lecturer	Teacher-centered learning	1 x 50'
					Project assignment	Student-centered learning	
8				Mid semester exam			
9 -10	Able to explain the understanding of the basic concept of Geodesy: geometric ellipsoids	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Explain the basic concepts of Geodesy: Geometric	Lecturer	Teacher-centered learning	2 x 50'
				Explains the basic concepts of Geodesy: geometric ellipsoids	Lecturer	Teacher-centered learning	2 x 50'
				Explain the basic concepts of Geodesy: Ellipsoid Geometry References	Discussion	Problem-based learning	2 x 50'
					Assignment	Student-centered learning	2 x 50'
11	Able to explain the understanding of the basic concepts of Geodesy: coordinate system	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	10	Explain the basic concepts of Geodesy: General Coordinate System	Lecturer	Teacher-centered learning	2 x 50'
				Explain the basic concepts of Geodesy: Specific Coordinate Systems	Lecturer	Teacher-centered learning	2 x 50'
				Explain the basic concepts of Geodesy: the Coordinate Reference System	Discussion	Problem-based learning	2 x 60'
					Assignment	Student-centered learning	
12 - 13	Able to explain the understanding of the basic concepts of Geodesy: Geodetic problem solving, coordinate transformation.	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Explain the basic concept of Geodesy: the solution to the problem of Geodetic	Lecturer	Teacher-centered learning	1 x 50'
				Geodetic problem solving, coordinate transformation.	Discussion	Student-centered learning	1 x 50'
				Explain the basic concepts of Geodesy: the Coordinate Reference System	Assignment	Problem-based learning	1 x 60'
14	Able to explain the understanding of natural resource problems, the environment	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	5	Able to explain the understanding of natural resource problems	Lecturer	Teacher-centered learning	1 x 50'
				Able to explain the understanding of environmental problems	Lecturer	Teacher-centered learning	1 x 50'
				Explain and study problems	Discussion	Student-centered learning	1 x 50'
					Assignment	Student-centered learning	1 x 50'

15	Able to explain the understanding of natural resource problems, natural disasters	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	5	Able to explain the understanding of natural resource problems	Lecturer	Teacher-centered learning	1 x 50'
				Able to explain the understanding of the problem of disaster	Lecturer	Teacher-centered learning	1 x 50'
				Explain and study problems	Latihan	Student-centered learning	1 x 50'
					Tugas	Student-centered learning	1 x 50'
16				Final semester examination			
TOTAL			100				