MODULE HANDBOOK DESCRIPTION

Module designation	*Electromagnetics*	
Code	*FBS2232*	
Semester(s) in which the module is taught	*3rd /second year*	
Person responsible for the module	Ni Made Seniari, S.T., M.T.	
Language	*Indonesian*	
Relation to curriculum	*Compulsory for all majors*	
Teaching methods	*Lectures, small group discussion, case base method.*	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: • Lectures: 3 x 50 minutes • Exercises and Assignments: 3 x 60 minutes • Private study: 3 x 60 minutes. total study hours = 8 hours 30 minutes/week	
Credit points	*3 SKS (~ 4.8 ECTS)*	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes.	1. *Students are able to explain and to give examples of scalar- and vector-quantities which are implemented in three coordinate systems* 2. *Students are able to demonstrate vector operations and conversion from one coordinate system to another coordinate systems.* 3. *Students are able to interpret the concept of Coulomb Force and Electric Field Intensity, the occurrence of electric flux, electric flux density, and the occurrence of energy and electric potential* 4. *Students are able to classify conductor properties, semi-conductor properties*	*PLO2*

	5. *Students are able to analyse the amount of Electric Field Intensity caused by one and several point charges, by line charge density, area charge density, volume charge density, and conductor boundary conditions.* 6. *Students are able to calculate the intensity of the electric field using a Potential Gradient, current, and current density.*	*PLO3*
	7. *Students are able to summarize the concept of Magnetic & Earth's Magnetic Fields, and to validate Biot-Savart Law*	*PLO9*
Content	1. *Vector Analysis and Coordinate Systems* *2. Coulomb Force and Electric Field Intensity* *3. Electric Flux Density and Gauss's Law* *4. Energy and Electric Potential* *5. Potential Gradient* *6. Current and Conductor* *7. Magnetic & Earth's Magnetic Fields* *8. Biot-Savart Law*	
Examination forms	- *Collecting a portofolio after finishing each topic, in the form of voice recordings and working on practice assignments* - *Midterm and final test*	
Study and examination requirements	*The final grade in the module is composed of:* *a. The portfolio of 6 topics is 11,67% each, for a total of 70%* *b. Mid-term assessment: 15%* *c. Final assessment: 15%* *Students must have a final grade of 70% or higher to pass*	
Reading list	1. *Hayt, William H., 2018, Elektromagnetika Teknologi, 8th edition, Erlangga, Jakarta,* 2. *Hayt, William H, . "Elektromagnetika", Erlangga, Jakarta: 2006.* 3. *Rustam Effendi, dkk., 2002, Medan Elektromagnetika Terapan, Erlangga, Jakarta* 4. *Edminister, Joseph, 1993 reprinted 2018, Schaum's Outline of Theory and Problems of Electromagnetics, Mc Graw-Hill, USA* 5. *Ulaby F. T., 2008, Electromagnetics for Engineers, Dorling Kindersley, New Delhi*	