MODULE HANDBOOK DESCRIPTION

Module designation	Basic Electric Power	
Code	FBS2126	
Semester(s) in which the module is taught	3 / second year	
Person responsible for the module	Agung Budi Muljono, ST., MT.; Supriyatna, ST., MT.; Dr. I Made Ginarsa, ST., MT.; Sultan, ST., MT.	
Language	Indonesian	
Relation to curriculum	Compulsory	
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. • Self-learning: 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	Electrical Circuit I (FBS1213)	
Module objectives/intended learning outcomes	1. Students are able to understand of functions, definitions and types of components of power system. 2. Students are able to understand the thermal energy conversion and efficiency of power generation system.	PLO2

	3. Students are able to apply the theory of single-phase and three-phase AC circuit. 4. Students are able to analyze voltage drop and power losses in short electric power transmission networks. 5. Students are able to analyze voltage drop and power losses in electrical power distribution systems. 6. Students are able to analyze basic electromagnetic and electromechanical in electrical power system. 7. Students are able to analyze the performance of single-phase transformer.	PLO3
	8. Students are able to simulate the performance of AC Machines. 9. Students are able to simulate the performance of DC Machines.	PLO4
Content	1. Introduction of basic electrical power. 2. Hydroelectric power plant dan Thermal power plant. 3. AC Voltage and Three-phase of AC Voltage. 4. Electric power transmission systems. 5. Electric power distribution system and electric load. 6. Electromagnetic and electro-mechanical. 7. Transformer. 8. AC machines. 9. DC machines.	
Examination forms	- Written case study - Written and oral project study - Essay midterm and final test	
Study and examination requirements	The final grade in the module is composed of: a. Case I assessment : 15 % b. Case II assessment : 15 % c. Case III assessment : 20 % d. Written Midterm assessment : 20 % e. Written Final assessment : 30 % Students must have a final grade of 65% or higher to pass	
Reading list	1. Zuhal, 1995, Dasar Teknik Tenaga Listrik dan Elektronika Daya, Gramedia 2. Theraja, B.L, 1993, A Text Book of Electrical Technology, Publication Division of Nirja Construction & Development Co. Ltd., Ram Nagar, New Delhi. 3. Fitzgerald, A.E.c.s., 1992, Mesin-Mesin Listrik, Terjemahan, Penerbit Erlangga, Jakarta. 4. Wildi, Theodore, 2014; Electrical machines, drives, and Power System 6th edition.	