MODULE HANDBOOK DESCRIPTION

Module designation	Design of Electrical Machines	
Code	FBA0006	
Semester(s) in which the module is taught	6 / third year	
Person responsible for the module	Agung Budi Muljono, ST., MT.	
Language	Indonesian	
Relation to curriculum	Free elective for Electrical Power System Engineering	
Teaching methods	Lectures, case base method, project base method	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 Weeks / semester: • Lectures: 2 × 50 minutes. • Exercises and Assignments: 3 × 60 minutes. • Self-learning: 2 × 60 minutes. total study hours = 5 hours 40 minutes/week	
Credit points	2 SKS (~ 3,6 ECTS)	
Required and recommended prerequisites for joining the module	- Electric Machines (FBA3104)	
Module objectives/intended learning outcomes	1. Students be able to differentiate electric machine technologies considering operation, characteristics, mechanical and cooling concepts.	PLO3
	2. Students are able to apply theoretical knowledge to solve problems in existing and emerging machine technologies.	PLO3
	3. Students are able to evaluate and simulate electromagnetic, mechanical and thermal designs of electric machines.	PLO4

	4. Students are able to simulate and design transformer and electric machines using commercial software such as MotorCAD, Ansys Maxwell, Infolytica, etc	PLO4
	5. Students are able to Interpret and analyse test results design electrical machines	PLO4
	6. Students are able to interpret the practicality, and manufacturability of electrical machine designs considering manufacturing process and cost.	PLO9
Content	1. Review of Magnetic Circuit 2. Practical Material 3. Transformer design 4. Wingdings of Electrical Machines 5. Design of three phase Induction motors 6. Energy efficient induction motors	
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. A.K. Sawhney, 1999, Electrical Machine Design, Dhanpat Rai & Co. 2. M.V. Deshpande, 2002, Design and Testing Electrical Machines, Weeler & Co. 3. A. Hughes, B. Drury, 2013 "Electric motors and drives: fundamentals, types and applications", 4th edition, Newnes, Oxford. 4. Howard E Jordan, 2010, Energy Efficient Electric Motors and their Applications, Plennum Press, New York.	