



MODULE HANDBOOK DESCRIPTION

Module designation	<i>Electrical Materials</i>	
Code	<i>FBS1105</i>	
Semester(s) in which the module is taught	<i>1 / first year</i>	
Person responsible for the module	<i>Abdul Natsir, S.T., M.T</i>	
Language	<i>Indonesian</i>	
Relation to curriculum	<i>Compulsory</i>	
Teaching methods	<i>lectures, small group discussion, case base method</i>	
Workload (incl. contact hours, self-study hours)	<p><i>Contact minutes every week, each week of the 16 weeks/semester :</i></p> <ul style="list-style-type: none"> • <i>Lectures</i> : 2 x 50 minutes • <i>Exercises and Assignments</i> : 2 x 60 minutes • <i>Private study</i> : 2 x 60 minutes. <p><i>total study hours = 5 hours 40 minutes/week</i></p>	
Credit points	<i>2 (~ 3,2 ECTS)</i>	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	<i>1. Student are able to understand the material properties, interatomic bonding, the structure of crystalline solids, dielectric, and classification of materials</i>	<i>PLO2</i>
	<i>2. Student are able to analyse the conductor, semiconductor, isolator, superconductor, magnetic material and specific material.</i>	<i>PLO2, PLO3</i>
	<i>3. Student are able to design the conductor, isolator, magnetic material, and specific material</i>	<i>PLO2, PLO8</i>

Content	<ol style="list-style-type: none"> 1. <i>Introduction of material properties</i> 2. <i>Atomic structure and interatomic bonding</i> 3. <i>Structure of Crystalline Solids</i> 4. <i>Dielectrics</i> 5. <i>Classification of Electrical Materials</i> 6. <i>Conductor</i> 7. <i>Semiconductor</i> 8. <i>Superconductor</i> 9. <i>Isolator</i> 10. <i>Magnetic Material</i> 11. <i>Specific material</i>
Examination forms	<ul style="list-style-type: none"> - <i>Written case study</i> - <i>Written and oral project study</i> - <i>Essay midterm and final test</i>
Study and examination requirements	<p><i>The final grade in the module is composed of ;</i></p> <ol style="list-style-type: none"> a. <i>Case assessment : 35 %</i> b. <i>Team-Project assessment : 25 %</i> c. <i>Written Midterm assessment : 20%</i> d. <i>Written Final assessment : 20%</i> <p><i>Students must have a final grade of 65% or higher to pass</i></p>
Reading list	<ol style="list-style-type: none"> 1. <i>William D. Callister, Jr., David G. Rethwisch, 2010. Materials Science and Engineering an Introduction, John Wiley & Sons Inc., USA.</i> 2. <i>Rudy Setiabudy, 2007. Material Teknik Listrik, Penerbit Universitas Indonesia, Jakarta.</i> 3. <i>Tata Sardia, dan Shinraku Saito, 2000, Pengetahuan Bahan Listrik, Pradnya Paramita, Jakarta.</i>