

Module designation	EEM311 Electrical Circuits		
Semester(s) in which the module is taught	3		
Person responsible for the module	Megantara Pura, Prianggada Indra Tanaya		
Language	Indonesian		
Relation to curriculum	Compulsory		
Didactic methods	<ul style="list-style-type: none"> <li>- Lecture</li> <li>- Demonstration</li> <li>- Hands-On</li> </ul>		
Workload (incl. contact hours, self-study hours)	<p>Total workload: 136.08 hours</p> <p>Theory</p> <ul style="list-style-type: none"> <li>- 23.34 hours of synchronous lecture.</li> <li>- 56.04 hours of Self-study and assignments</li> <li>- 11.34 hours related to exam and self study</li> </ul> <p>Lab</p> <ul style="list-style-type: none"> <li>- 23.35 hours of lab module (and in-class assistance)</li> <li>- 16.34 hours of self-lab and assignments</li> <li>- 5.67 hours related to exam and self study</li> </ul>		
Credit points	3 SKS (5.04 ECTS)		
Required and recommended prerequisites for joining the module	<p>Required:</p> <ul style="list-style-type: none"> <li>- CE131 Physics</li> </ul>		
Module objectives/intended learning outcomes	Course Learning Outcome	Related ELOs	
		ELO	Performance Indicator
	Students will be able to assemble a real circuit according to the field of interest.	G	Understand the concept of electronics, analog systems, and digital systems in designing embedded systems.
Content	This course covers the basic concepts of circuits / circuit, circuit modeling and methods for circuit analysis, including: basic circuit theory, resistor circuit, kirchhoff's current law, kirchhoff's voltage law, nodal analysis, mesh analysis, superposition, Thevenin theory, Norton theory, inductor, capacitor, sinusoid concept and phasor used to analyze AC circuit, AC circuit analysis method, AC		

	<p>power analysis, impedance and admittance average power, effective value and complex power.</p> <p>Specifically, this course contains these topics:</p> <ol style="list-style-type: none"> <li>1. Basic Concepts of Electronics</li> <li>2. Fundamental Electricity Laws</li> <li>3. Resistive Circuits</li> <li>4. Resistive Net Analysis</li> <li>5. Capacitor</li> <li>6. Inductor</li> <li>7. Basic AC Quantities</li> <li>8. RLC</li> <li>9. AC Power</li> </ol>
Examination forms	<ul style="list-style-type: none"> <li>- Written test</li> <li>- Portfolio</li> </ul>
Study and examination requirements	<p>The total average score for the assignments (30%), midterm (30%), and final (40%) exams must be more than or equal to 55 (C).</p>
Reading list	<ol style="list-style-type: none"> <li>1. G. Rizzonic(2003), Principles and Applications of Electrical Engineering, Edisi ke-4, McGraw-Hill</li> </ol>