

UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER ENGINEERING
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY

Module name	Electric Circuits	
Module level	Undergraduate	
Code	EW184003	
Courses (if applicable)	Electric Circuits	
Semester	Elective	
Contact person	Dr. Rahmat Setiawan	
Lecturer	Dr. Rahmat Setiawan	
Language	Indonesia	
Relation to curriculum	Undergraduate degree program, elective semester.	
Type of teaching, contact hours	Lecture, < 60 students, 170 minutes * SKS	
Workload	<ol style="list-style-type: none"> 1. Lectures: 2 x 50 = 100 minutes (1.8 hours) per week. 2. Exercises and Assignments: 2x 60 = 120 minutes (2 hours) per week. 3. Private study: 2 x 60 = 120 minutes (2 hours) per week. 	
Credit points	3 credit points (sks).	
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.	
Mandatory prerequisites	KM184101 Mathematics I	
Learning outcomes and their corresponding PLOs	<p>CLO-1 Students are able to explain two basic laws of the circuit (Ohm's Law and Kirchhoff's Law)</p> <p>CLO-2 Students are able to explain explain two methods of analysis (nodes and mesh) and some useful circuit methods</p> <p>CLO-3 Students are able to design circuit using capacitor, resistor and inductor</p> <p>CLO-4 Students are able to practice design and tuning electric circuit</p>	<p>PLO-3 PLO-4</p> <p>PLO-3 PLO-4</p> <p>PLO-5</p> <p>PLO-9</p>
Content	Electric Circuit course discusses the basic concepts of the electric circuit and its analysis. The course including two basic laws of the circuit (Ohm's Law and Kirchhoff's Law), two methods of analysis (nodes and mesh), some useful circuit methods (superposition theorem, thevenin equivalent circuit, Norton equivalent circuits, and maximum power transfer). The next topic of discussion is the principle of capacitors and inductors, responses of circuits with capacitor or inductor (first order circuit), and responses of circuit with resistor, capacitor and inductor (second order circuit) in both	

	series and parallel circuits
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> • In-class exercises • Quiz 1 and 2 • Assignment 1, 2, 3 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom).
Assessments and Evaluation	<p>CLO-1: Question no 1 in midterm exam (15%)</p> <p>CLO-2: Question no 2 in midterm exam (15%)</p> <p>CLO-3: Assignment 1 (5%), question no 4 in midterm exam (20%), Quiz 2 (5%)</p> <p>CLO-4: Question no 1 in final exam (20%), question no 2 in final exam (20%)</p>
Reading List	<p>[1] Electric Circuits, Lecture Notes.</p> <p>[2] Pujiono, Rangkaian Listrik, Graha Ilmu, 2010.</p> <p>[3] WH Hayt, JE Kemmerly, and SM Durbin, Engineering Circuit Analysis, McGraw Hill, 8 th Edition, 2007.</p> <p>[4] CK Aexander and MNO Sadiku, Fundamental of Electric Circuit, McGraw Hill, 8th Edition, 2013.</p>