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

Module name	**Electronics Circuit**	
Module level	Undergraduate	
Code	EC184303	
Courses (if applicable)	**Electronics Circuit**	
Semester	3 / Fall (Ganjil)	
Contact person	Dr. Muhammad Rivai (Electrical Engineering)	
Lecturer	Dr. Muhammad Rivai	
Language	Indonesia / English	
Relation to curriculum	Undergraduate degree program, mandatory, 3th semester.	
Type of teaching, contact hours	Lecture, < 60 students, 170 Minutes * SKS	
Workload	1. Lectures: 3 x 50 = 150 minutes (2.5 hours) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 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		
Learning outcomes and their corresponding PLOs	PLO-3 Knowledge in mathematics, natural sciences and engineering PLO-5 Graduates are able to select and apply methods of modelling, calculating, and testing through experiments and computer simulations, and to explain the results PLO-6 Able to develop (integrated) hardware and/or software design and to evaluate its maintainability, sustainability, and manufacturability.	CLO-1 Students are able to explain principles of semiconductor, transistor in electronic circuit. CLO-2 Student are able to explain basic EE abstractions on which analysis and design of electrical and electronic circuits and systems are based, including lumped circuit, digital and operational amplifier abstractions. CLO-3 Student able to use abstractions to analyze

		and design simple electronic circuits. CLO-4 Student are able to formulate and solve the differential equations describing time behavior of circuits containing energy storage elements CLO-5 Students are able to explain of how complex devices such as semiconductor diodes and field-effect transistors are modeled and how the models are used in the design and analysis of useful circuits. CLO-6 Students are able to design and construct circuits, take measurements of circuit behavior and performance, compare with predicted circuit models and explain discrepancies.
Content	In this course, students will learn analysis, simulation, design and application description of Semiconductor components (Diodes, Bipolar Junction Transistors, Field-Effect Transistors), frequency response of transistor circuits, power amplifiers, differential amplifier circuits, feedback and oscillator circuits, power supply circuits, silicon-controlled components Rectifier, Diode Alternating Current, Triode for Alternating Current, Unijunction Transistor, Programmable Unijunction Transistor.	
Study and examination requirements and forms of examination	• 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	CO-1: Question no 1 in midterm exam (10%) CO-2: Question no 2 in midterm exam (10%) CO-3: Question no 3 in midterm exam (10%), quiz 1 (5%) CO-4: Assignment 1 (5%), question no 4 in midterm exam (10%), Quiz 2 (5%) CO-5: Question no 1 in final exam (10%), question no 2 in final exam (10%) CO-6: Assignment 2 (5%), question no 3 in final exam (10%) CO-7: Assignment 3 (5%), question no 4 in final exam (5%)
Reading List	1. Muhammad Rivai, 2018. Diktat: Rangkaian Elektronika. 2. Robert L Boylestad and Louis Nashelsky, 2012. Electronic Devices and Circuit Theory, Prentice Hall, Inc.