

UNDERGRADUATE PROGRAM IN ELECTRONICS AND INSTRUMENTATION
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA

Module name	Digital Electronic	
Module level	Undergraduate	
Code	MII-1804	
Courses (if applicable)	Introduction to Electronics and Instrumentation	
Semester	event (Genap)	
Contact person	Nia Gella Augoestien, S.Si., M.Cs.,	
Lecturer	Nia Gella Augoestien, S.Si., M.Cs., Ika Candradewi, S.Si., M.Cs.,	
Language	Bahasa Indonesia	
Relation to curriculum	Undergraduate degree program, mandatory, 2 nd semester	
Type of teaching, contact hours	Lectures, < 50 students, 3 hours	
Workload	<ol style="list-style-type: none"> 1. Lectures: 3 x 50 = 150 minutes (2 hour and 30 minutes) per week. 2. Exercises and Assignments: 3 x 50 = 150 minutes (2 hour and 30 minutes) 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 final exams.	
Mandatory prerequisites	-	
Learning outcomes and their corresponding PLOs	<p>After completing this module, a student is expected to:</p> <p>CO-1 Understand about numbering system and its relationship with digital electronics.</p> <p>CO-2 Able to use boolean algebra, truth table and Karnaugh map as a tools of analysis and synthesis digital circuit.</p> <p>CO-3 Able to analyze and synthesis kombinatorial logic circuit.</p> <p>CO-4 Able to use universal logic gates (NAND and NOR) to design logic circuits.</p> <p>CO-5 Understand about MSI and PLDs type that often used in digital networks and implement it on combinational logic circuit.</p>	<p>PLO2</p> <p>PLO3</p> <p>PLO4</p> <p>PLO2</p> <p>PLO2</p>
Content	Basic concept of digital electronics, boolean algebra, truth table, basic logic operator, simplifying boolean equation, Karnaugh Map, Quine and Mc Cluseky Method, Analisis and Design combination logic circuit, MSI (Medium Scale Integrated) and PLD (Programmable Logic Device).	
Study and	<ul style="list-style-type: none"> • Assignments 	

examination requirements and forms of examination	<ul style="list-style-type: none"> • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (eLisa).
Assessments and Evaluation	CO-1 Midterm exam, assignment (total: 12,5%) CO-2 Midterm exam, assignment (total: 22,5%) CO-3 Final exam, assignment (total: 30%) CO-4 Midterm exam, assignment (total: 12,5%) CO-5 Final exam, assignment (total: 22,5%)
Reading List	<ol style="list-style-type: none"> 1. Mano, M. M. dan Ciletti, M. D., 2008, Digital Design, Prentice Hall , New Jersey. 2. Tocci, R. J., dkk, 2007, Digital Systems – Principles and Applications, 10th Edition, Pearson Education.