

**MODULE HANDBOOK**  
**Master Program in Computer Science**  
**Department of Computer Science and Electronics**  
**Faculty of Mathematics and Natural Sciences**  
**Universitas Gadjah Mada**

**Electronics**

Module name	<b>Electronics</b>		
Module level	Master		
Code	MII 6292		
Courses (if applicable)	Electronics (Elektronika)		
Semester	Even (Genap)		
Contact person	Dr. Yohanes Suyanto, M.Kom Dr. Danang Lelono, S.Si., M.T.		
Lecturer	Dr. Yohanes Suyanto, M.Kom Dr. Danang Lelono, S.Si., M.T.		
Language	Indonesia		
Relation to curriculum	Master program, elective, 2 <sup>nd</sup> semester		
Type of teaching, contact hours	Master program : lectures, <17 student		
Workload	1. Lectures: 3×50 = 150 minutes (2.5 hours) per week 2. Exercises and Assignments: 3×60 = 180 minutes (3 hours) per week 3. Private study: 3×60 = 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		
Recommended prerequisites	-		
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:		
	<b>CO</b>	<b>Description</b>	<b>Supported PLO</b>
	CO-1	Students are able to analyze the basic concepts of Electronics	PLO3
	CO-2	Students are able to analyze and design electronics	PLO4
	CO-3	Students are able to apply the Electronic circuit	PLO5

	CO-4	Students are able to develop and think logically and analytically to solve problems faced professionally	PLO6			
	CO-5	Students are able to evaluate logically and analytically to solve electronic circuit problems	PLO8			
	CO-6	Students are able and capable to analyze the requirements of electronic components to be implemented in electronic circuit design	PLO9			
Content	<p>Electronics is the driving force of industrial tools, computer and communication instruments, medical instruments, household appliances and so on. The beginning of the last decade, there has been a massive revolution in the field of computer and communication technology and the explosion of a variety of user-friendly applications and ease of communication. The progress of computer and communication technology can be utilized in the world of education, especially in the framework of improving the teaching and learning process.</p> <p>For this reason, in electronics lecture, broadly discuss about analog electronics is needed to provide the ability to think in the field of analog electronics, so that by looking at the newly known electronic circuits, one can immediately think of the functions of each component in the circuit. Whereas digital electronics starting from the introduction of combinational AND, OR and NOT basic gates developed into a sequential flip-flop-based can ultimately be used as a provision for analyzing and designing digital circuits of enumerators, sliding registers, state diagrams, state reductions, and state determination.</p>					
Study and examination requirements and forms of examination	<p>Mid-term examination Final examination Assignments</p>					
Media employed	LCD, blackboard, websites, and books					
Assessments and Evaluation	<b>CO</b>	<b>Assessment Methods</b>	<b>Supported PLO</b>	<b>Type</b>	<b>Percentage</b>	<b>Total</b>
	CO-1	Problem 1 of midterm exam	PLO3	Summative	6%	12%
		Problem 1 of final exam	PLO3	Summative	6%	
	CO-2	Problem 2 of midterm exam	PLO4	Summative	6%	22%
		Assignment 1	PLO4	Formative	5%	
		Problem 2 of final exam	PLO4	Summative	6%	
	CO-3	Assignment 5	PLO4	Formative	5%	22%
Problem 3 of midterm exam		PLO5	Summative	6%		

		Assignment 2	PLO5	Formative		
		Problem 3 of final exam	PLO5	Summative	6%	
		Assignment 6	PLO5	Formative	5%	
	CO-4	Problem 4 of midterm exam	PLO6	Summative	6%	22%
		Assignment 3	PLO6	Formative	5%	
		Problem 4 of final exam	PLO6	Summative	6%	
		Assignment 7	PLO6	Formative	5%	
	CO-5	Assignment 4	PLO8	Formative	5%	10%
		Assignment 8	PLO8	Formative	5%	
	CO-6	Problem 5 of midterm exam	PLO9	Summative	6%	12%
		Problem 5 of final exam	PLO9	Summative	6%	
Reading List	<ul style="list-style-type: none"> <li>• Malvino, Albert &amp; Bates, David J. 2016: <i>Electronic Principles</i>, 8th Edition, McGraw-Hill, New York.</li> <li>• Shjiva, Sajjan G., 2010, <i>Introduction to Logic Design</i>, Third Edition, Alabama</li> <li>• Schultz, Mitchel E. 2007: <i>Grob's Basic Electronics</i>, 10th Edition, McGraw-Hill, Newyork</li> <li>• Bishop, Owen, 2006: <i>Electronics</i>, 2<sup>nd</sup> Edition, Elsevier, Tokyo</li> </ul>					