

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

Module name	Digital Signal Processing 1 Lab Module																										
Module level	Undergraduate																										
Code	MII-3605																										
Courses (if applicable)	Digital Signal Processing 1 Lab																										
Semester	Odd (Gasal)																										
Contact person	Roghib Muhammad Hujja, M.Cs																										
Lecturer	Roghib Muhammad Hujja, M.Cs																										
Language	Bahasa Indonesia																										
Relation to curriculum	Undergraduate degree program, mandatory, 5 th semester.																										
Type of teaching, contact hours	Undergraduate degree program: lectures, < 30 students																										
Workload	Lectures: 1 x 100 = 100 minutes per week. Exercises and Assignments: 1 x 50 = 50 minutes per week.																										
Credit points	1 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	<p>After completing this module, a student is expected to:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">CO1</td> <td style="width: 70%;">Understand the basics of digital signals</td> <td style="width: 20%;">PLO2</td> </tr> <tr> <td>CO2</td> <td>Understand digital signals and their representations</td> <td>PLO2</td> </tr> <tr> <td>CO3</td> <td>Able to implement digital filters</td> <td>PLO3</td> </tr> <tr> <td>CO4</td> <td>Understand the benefits and application of DTMF(Dual Tone Multi Frequency)</td> <td>PLO3 PLO4</td> </tr> <tr> <td>CO5</td> <td>Understand and be able to apply adaptive filters</td> <td>PLO3 PLO4</td> </tr> <tr> <td>CO6</td> <td>Understand sound processing technique</td> <td>PLO3 PLO4</td> </tr> <tr> <td>CO7</td> <td>Understand the principles and techniques of waveform coding</td> <td>PLO2 PLO3</td> </tr> <tr> <td>CO8</td> <td>Understand sampling techniques on sound waves</td> <td>PLO3</td> </tr> </table>			CO1	Understand the basics of digital signals	PLO2	CO2	Understand digital signals and their representations	PLO2	CO3	Able to implement digital filters	PLO3	CO4	Understand the benefits and application of DTMF(Dual Tone Multi Frequency)	PLO3 PLO4	CO5	Understand and be able to apply adaptive filters	PLO3 PLO4	CO6	Understand sound processing technique	PLO3 PLO4	CO7	Understand the principles and techniques of waveform coding	PLO2 PLO3	CO8	Understand sampling techniques on sound waves	PLO3
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Content	<p>The world at the end of the nineteenth century was a world where aspects of all systems could be modeled so that they were easy to analyze and design. A control model generally requires input and output signals so that the system can be analyzed theoretically. In this case, the signal is a very important thing. In the development of the twentieth century, the era of digital technology became very popular and covered many aspects. Almost all systems can be digitized and the development of system design must be adjusted. In his response to all the advances in technology, the signal which is a major component of the system must be adjusted. The signal</p>																										

	<p>which was originally an analog signal, with the presence of a computer, can now be analyzed using a digital signal approach. With these various developments, the study of digital signals became widespread and became one thing that must be mastered, especially for technical engineers and system designers.</p>				
Study and examination requirements and forms of examination	Final examination.				
Media employed	LCD, blackboard, websites, Computer.				
Assessments and Evaluation	CO	Evaluation Method	Type	Percentage	Total
	CO1	Question 1 in midterm	Summative	5%	5%
	CO2	Question 2 in midterm	Summative	5%	10%
		Lab report	Formative	5%	
	CO3	Question 3 in midterm	Summative	5%	10%
		Lab report	Formative	5%	
	CO4	Question 4 in midterm	Summative	5%	10%
		Quiz	Formative	5%	
	CO5	Question 1 in finalterm	Summative	10%	15%
		Quiz	Formative	5%	
	CO6	Question 2 in finalterm	Summative	10%	15%
		Quiz	Formative	5%	
	CO7	Question 3 in finalterm	Summative	10%	15%
Lab report		Formative	5%		
CO8	Question 4 in finalterm	Summative	10%	20%	
	Quiz	Formative	10%		
Reading List	Lab Module Digital Signal Processing 1 Lab				