



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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Bachelor in Electronics and Instrumentation

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MODULE HANDBOOK

Module name	Electronic Maths I
Module level, if applicable	Undergraduate
Code, if applicable	MII-1009
Courses, if applicable	NA
Semester(s) in which the module is taught	Even Semester
Person responsible for the module	Nia Gella Augoestien, S.Si., M.Cs.,
Lecturer(s)	Nia Gella Augoestien, S.Si., M.Cs., Drs. Janoe Hendarto, M.I.Kom. Aufaclav Zatu Kusuma Frisky, S.Si., M.Sc.
Language	Bahasa Indonesia and English
Relation to curriculum	1. It is a mandatory course for the undergraduate degree program in 2nd semester 2. It is a mandatory course for the international undergraduate degree program in 2nd semester
Teaching methods	1. Undergraduate degree program delivered using lectures and practicum instruction with students less than 60. 2. International undergraduate degree program delivered using lectures and practicum instruction with student less than 30.
Workload (incl. contact hours, self-study hours)	1. Lectures : 2 x 50 = 100 minutes per week 2. Exercise and assignment : 1 x 50 = 50 minutes per week 3. Self study : 1 x 50 = 50 minutes per week
Credit points	2 Credit Points
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Required and recommended prerequisites for joining the module	Students must complete Calculus I (MMM- 1101) course.
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to: CO1. Master the fundamental concepts, properties, calculation, and application of matrices

	CO2. Understanding the fundamental and problem solving techniques of differential equation CO3. Understanding the fundamental, implementation, and analysis of vector calculus and trigonometry in real time problem CO4. Understanding the concepts of transformation of series data and its application on system analysis <table><tr><th colspan="2">PLO</th><th>CO1</th><th>CO2</th><th>CO3</th><th>CO4</th></tr><tr><td rowspan="5">Program Learning Outcome (PLO)</td><td>PLO1</td><td></td><td></td><td></td><td></td></tr><tr><td>PLO2</td><td>√</td><td></td><td>√</td><td>√</td></tr><tr><td>PLO3</td><td></td><td>√</td><td></td><td></td></tr><tr><td>PLO4</td><td></td><td></td><td></td><td></td></tr><tr><td>PLO5</td><td></td><td></td><td></td><td></td></tr></table>	PLO		CO1	CO2	CO3	CO4	Program Learning Outcome (PLO)	PLO1					PLO2	√		√	√	PLO3		√			PLO4					PLO5																				
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Content	1. Matrices 2. Ordinary Differential Equations 3. Vector Calculus 4. Trigonometric 5. Transformation of time-domain function																																																
Study and examination requirements and examination forms	The evaluation is done in 2 forms, namely: 1. Exam, either midterm or final exam 2. Two Assignments are to be completed within a specific timeframe 3. Quiz Assessment is done using a rubric to measure student understanding related to the target and class rank.																																																
Media employed	Projector, whiteboard, presentation. And e-learning platform (eLok)																																																
Assessments and evaluation	<table><tr><th>Type</th><th>Percentage</th><th>CO1</th><th>CO2</th><th>CO3</th><th>CO4</th></tr><tr><td>Quiz</td><td>16.0</td><td>√</td><td>√</td><td></td><td></td></tr><tr><td>Assignment 1</td><td>18.0</td><td></td><td></td><td>√</td><td></td></tr><tr><td>Assignment 2</td><td>18.0</td><td></td><td></td><td></td><td>√</td></tr><tr><td>Midterm</td><td>24.0</td><td>√</td><td>√</td><td></td><td></td></tr><tr><td>Final Exam</td><td>24.0</td><td></td><td></td><td>√</td><td>√</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Total</td><td>100.0</td><td></td><td></td><td></td><td></td></tr></table>	Type	Percentage	CO1	CO2	CO3	CO4	Quiz	16.0	√	√			Assignment 1	18.0			√		Assignment 2	18.0				√	Midterm	24.0	√	√			Final Exam	24.0			√	√							Total	100.0				
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Reading list	1. Attenborough, M., 2003: Mathematics for Electrical Engineering and Computing, Newnes. 2. Kreyzig, E., 2011: Advanced Engineering Mathematics, 10th ed., John Wiley, New York.																																																

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