

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

Module name	Electronic Mathematics I	
Module level	Undergraduate	
Code	MII-2807	
Courses (if applicable)	Electronic Mathematics I	
Semester	odd (Ganjil)	
Contact person	Triyogatama Wahyu Widodo, M.Kom.	
Lecturer	Triyogatama Wahyu Widodo, M.Kom. Nia Gella Augoestien, S.Si., M.Cs. Catur Atmaji, S.Si., M.Cs.	
Language	Bahasa Indonesia	
Relation to curriculum	Undergraduate degree program, mandatory, 3 rd semester	
Type of teaching, contact hours	Lectures, < 60 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	MII-2814 Advanced Electronics	
Learning outcomes and their corresponding PLOs	<p>After completing this module, a student is expected to:</p> <p>CO-1 Master the fundamental concepts, properties, calculation, and application of matrices</p> <p>CO-2 Understanding the fundamental, implementation, and analysis of vector calculus and trigonometry in real time problem</p> <p>CO-3 Understanding the concepts of transformation of series data and its application on system analysis</p> <p>CO-4 Understanding the fundamental and problem solving techniques of differential equation</p> <p>CO-5 Understanding the fundamental concepts of linear, time-invariance (LTI) and its application on system analysis</p>	<p>PLO2</p> <p>PLO2</p> <p>PLO2</p> <p>PLO3</p> <p>PLO4</p>
Content	Matrices, vector calculus, trigonometric functions, differential equation, transformation of time-domain function, introduction to linear system, introduction to linear time-invariance (LTI) system.	

Study and examination requirements and forms of examination	<ul style="list-style-type: none"> • Assignments • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (eLisa).
Assessments and Evaluation	CO-1 Midterm exam, assignment (total: 15%) CO-2 Midterm exam, assignment (total: 22%) CO-3 Midterm exam, Final exam, assignment (total: 23%) CO-4 Final exam, assignment (total: 24%) CO-5 Final exam, assignment (total: 16%)
Reading List	<ol style="list-style-type: none"> 1. Attenborough, M., 2003: Mathematics for Electrical Engineering and Computing, Newnes. 2. Kreyzig, E., 2011: Advanced Engineering Mathematics, 10th ed., John Wiley, New York.