

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

Module name	Elementary Linear Algebra																				
Module level	Undergraduate																				
Code	MII-1003																				
Courses (if applicable)	Elementary Linear Algebra																				
Semester	Fall (Odd)																				
Contact person	Dr. Agus Sihabuddin, S.Si., M.Kom.																				
Lecturer	Dr. Agus Sihabuddin, S.Si., M.Kom.																				
Language	Bahasa Indonesia and English																				
Relation to curriculum	Undergraduate degree program, Mandatory, 1 st semester																				
Type of teaching, contact hours																					
Workload	<ol style="list-style-type: none"> 1. Lectures: $2 \times 50 = 100$ minutes per week. 2. Exercises and Assignments: $2 \times 60 = 120$ minutes (2 hours) per week. 3. Private study: $2 \times 60 = 120$ minutes (2 hours) per week. 																				
Credit points	2 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	None																				
Learning outcomes and their corresponding PLOs	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">LO</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Supported PLO</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">L01</td> <td>Students are able to model problem into linear equation and to solve it</td> <td style="text-align: center;">PLO2</td> </tr> <tr> <td style="text-align: center;">L02</td> <td>Students are able to mention and to analyze characteristics of matrice, and vector generally</td> <td style="text-align: center;">PLO3</td> </tr> <tr> <td style="text-align: center;">L03</td> <td>Students are able to understand the processes derivating 2 dimension and 3 dimension space into Euclidean Space generally</td> <td style="text-align: center;">PLO3</td> </tr> <tr> <td style="text-align: center;">L04</td> <td>Students understand, and are able to prove and to use characteristics of vector in Euclidean Space to solve related mathematical problems.</td> <td style="text-align: center;">PLO3,4,5</td> </tr> <tr> <td style="text-align: center;">L05</td> <td>Studenst understand, and are able to prove and to use characteristic of linear transformations between Euclidean Spaces</td> <td style="text-align: center;">PLO3,4,5</td> </tr> </tbody> </table>			LO	Description	Supported PLO	L01	Students are able to model problem into linear equation and to solve it	PLO2	L02	Students are able to mention and to analyze characteristics of matrice, and vector generally	PLO3	L03	Students are able to understand the processes derivating 2 dimension and 3 dimension space into Euclidean Space generally	PLO3	L04	Students understand, and are able to prove and to use characteristics of vector in Euclidean Space to solve related mathematical problems.	PLO3,4,5	L05	Studenst understand, and are able to prove and to use characteristic of linear transformations between Euclidean Spaces	PLO3,4,5
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Content	Elementary Linear Algebra is a elementary subject in learning linear algebra and more advanced related subjects. This subject introduces a mathematic modelling, which is linear equation using matrice tools comprised of matrice operations,																				

	determinant, and inverting matrice. It also motivates the definition of Euclidean Space which is derivated from 2 dimension and 3 dimension space. Selain itu dari bidang geometri juga memotivasi terdefinisinya Ruang Euclid yang merupakan perumuman dari ruang dimensi 2 dan dimensi 3. This is followed by the introduction of linear transformations between Euclidean Spaces, characteristics of vector, and characteristic value.					
Study and examination requirements and forms of examination	Exercises in class, Assignments, Mid-terms examination and Final examination.					
Media employed	LCD, blackboard, websites, and e-learning.					
Assessments and Evaluation		LO	Method	Type	Percentage	Total
		L01	Exercise 1 in midterm exam Exercise 1	Summatif Formatif	10% 5%	15%
		L02	Exercise 2,3 in midterm exam Exercise 2,3	Summatif Formatif	10% 10%	20%
		L03	Exercise 4 in midterm exam Exercise 4,5	Summatif Formatif	5% 10%	15%
		L04	Exercise 1,2 in final exam Exercise 6,7	Summatif Formatif	15% 10%	25%
		L05	Exercise 3,4 in final exam Exercise 5	Summatif Formatif	15% 10%	25%
Reading List	Anton, H., and Rorres, C, 2000, Elementary Linear Algebra, John Wiley and Sons Inc. Nicholson, 2001, Elementary Linear Algebra, McGraw-Hill Book Co					