Department of Mathematics
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Course	**Course Name**	**: Linear Algebra**
	Course Code	**: KM184702**
	Credit	**: 3**
	Semester	**: 7**

Description of Course
Discussion of linear algebra courses includes examination of linear, linear and base sets, dimensions, direct sums, coordinates and ordered basis, linear mapping of vector spaces, linear mappings and matrix algebra, change of base, rank, determinant and inverse, echelon form of a matrix , eigenvectors and eigenvalues, matrix diagonization, orthogonality, general invers. The application of linear algebra is an integrated part in the presentation of lectures in the classroom. Also in the lecture discussion used SAGEMATH software to equip learners have the ability to perform numerical and symbolic computation. In the learning process in the classroom learners will learn to identify problems, express mathematical ideas: graphics, symbolic numeric and express it into writing. In addition to being directed to independent learning through tasks, learners are directed to cooperate in group work.

Learning Outcome	
PLO 2	[C3] Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations
PLO 3	[C4] Students are able to analyze simple and practical problems in at least one field of analysis, algebra, modeling, system optimizations and computing sciences

Course Learning Outcome
1. Students are able to follow developments and apply math and be able to communicate actively and correctly either oral or written

2. Students are able to develop further understanding that has been obtained mainly related to advanced mathematics and apply it either in the field of mathematics itself or others and the ability to manipulate mathematical computations numerically and symbolically related to the matrix
3. Students have a special ability and able to process enough ideas to support the next study in accordance with the field that ditekuninya
4. Students are able to present their scientific understanding in Linear Algebra independently or in teamwork.

Main Subject

Field and vector spaces, vector spaces, spanning sets, linearly independent and base, dimensions, direct sums, coordinates and ordered basis, linear mapping of vector spaces, linear mappings and matrix algebra, change of base, rank, determinant and inverse, echelon of a matrix, eigenvector and eigenvalues, matrix diagonization, orthogonality, general invers.

Prerequisites

Elementary Linear Algebra
Algebra I

Reference

1. Subiono, ”Catatan Kuliah : ALJABAR LINIER ”, Jurusan Mathematics FMIPA-ITS, 2014.
2. Robert A. Beezer, ”A First Course in Linear Algebra, Version 3.10”, University of Puget Sound, Congruent Press, Washington, USA, (2013)
3. Gilbert Strang, ”Linear Algebra and Its Applications", 4th Edition, Thomson, (2006).
4. C.D. Meyer,”Matrix Analysis and Applied Linear Algebra”, SIAM, (2000)

Supporting Reference

1. David C. Lay, "Linear Algebra and Its Applications", Addison Wesley, (2002).
2. Steven J. Leon, "Linear Algebra with Applications", 7th Edition, Pearson Prentice Hall, (2006).