UNIVERSITAS MATARAM

(University of Mataram)

FAKULTAS TEKNIK

(Faculty of Engineering)

PROGRAM STUDI TEKNIK INFORMATIKA

(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Linear Algebra (W22B21)

Module designation	Linear Algebra
Semester(s) in which the module is taught	*2 / First year*
Person responsible for the module	*Prof. Dr. Eng. I Gede Pasek Suta Wijaya, S.T., M.T.* *Gibran Satya Nugraha, SKom., M.Eng.* *Ari Hernawan, SKom., M.Sc.*
Language	*Indonesian*
Relation to curriculum	*Compulsory*
Teaching methods	*Lectures, Discussions, Assignments*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation ● 2 x 50 minutes lecturer/week ● 2 x 60 minutes class exercise/week ● Self Study minutes = 120 minutes/week Total workload 340 minutes/week
Credit points	*3 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	The main objective of this Linear Algebra course is to provide mastery of the basic principles of elementary linear algebra, matrices, vectors, and functions. Based on the objective, the learning outcomes of Linear Algebra course: 1. Students are able to explain vectors, vector spaces, matrices and their operations (CPL 2, CPL7) 2. Students are able to calculate the determinant, the inverse of a matrix using the adjoint method and Gauss-Jordan elimination, and the eigenvalues and vectors (CPL 2, CPL6, CPL7) 3. Students are able to apply knowledge about vectors and matrices in solving systems of linear equations as well as applications to simple problems (CPL 2, CPL6, CPL7).
Content	The Linear Algebra course explains content topics: 1. Introduction to Linear Algebra 2. Matrices and their operations 3. Determinant of matrix 4. Inverse matrix 5. Linear Equations and their Solution 6. Introduction to Octave 7. Notation and vector operations 8. Vector arithmetic and its properties 9. Product space in orthogonal and orthonormal 10. Linear transformation 11. Eigenspace 12. Octave for solving Linear Algebra
Examination forms	*Assignments, Quiz, Middle and Final Exam*
Study and examination requirements	*Assignements 20%,* *Quiz for every topic 20 %,* *Middle Exam 30 %,* *Final Exam 30%*

Reading list	1. Richard Bronson and Gabriel B. Costa. **Linear Algebra An Introduction**, Second Edition, 2. Gilbert Strang, **Introduction To Linear Algebra**, Fifth Edition, Wellesley - Cambridge Press, 2016. 3. Otto Bretscher, **Linear Algebra with Applications**, 4th Edition, **Pearson, 2008**