



Module Handbook

Module Name :	<i>Aljabar Linear Elementer</i> Elementary Linear Algebra
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103010
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	2 nd / first year
Module coordinator(s)	Dr. R. Sulaiman, M.Si
Lecturer(s):	Dr. R. Sulaiman, M.Si Dwi Nur Yuniarti, M.Si
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	Compulsory/ Elective
Teaching format/class hours per week during the semester:	3 contact hours of lectures (<i>sks</i> or credit unit*)
Workload :	3 x 50 minutes lectures, 3 x 60 minutes structured activity, and 3 x 60 minutes individual activity per week, 14 weeks per semester 119 total hours per semester ~ 4.77 ECTS**
Credit Unit:	3 credit unit (4.77 ECTS)
Requirements:	Foundation of Mathematics



<p>Learning goals/competencies:</p>	<p>Knowledge (KNO-1): Demonstrating mathematical knowledge and mathematical insight.</p> <p>CLO-1: Explain concepts and techniques for solving linear equation system by using Elementary Row Operations method (ERO), Matrices and their operations, vector and subspace spaces, bases and dimensions, row / column space, inner product space, linear transformations, eigenvalues, vectors. eigen, and diagonalization.</p> <p>Skill (SKI-1) : Formulating and solving fundamental mathematical problems.</p> <p>CLO-2: Formulate problems to mathematics model (linear equation system) and solve it.</p> <p>Skill (SKI-2) : Applying the basic principles of mathematics to solve simple* mathematical problems.</p> <p>CLO-3: Apply "Gauss-Jordan elimination method" to solve linear equation system.</p> <p>Competences (Com-3) : Solving mathematical problems using technology</p> <p>CLO-4: Solve linear equation system by using software (Matlab, Mapple)</p> <p>Attitude and Social (Soc-1) : Working collaboratively and having social sensitivity (obligations as citizens and towards religion) and being able to bring change to a techno-ecopreneurship community.</p> <p>CLO-4: Able to collaborate in completing task</p>
<p>Content</p>	<p>This course discusses about systems of linear equations, matrices and their operations, vector spaces and subspaces, bases and dimensions, row / column space, inner product space, linear transformations, eigenvalues and eigenvectors.</p>

<p>Attribute Soft skill:</p>	<p>Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class</p>					
<p>Study/exam achievements:</p>	<p>The final grade (NA) is calculated based on the following ratio:</p> <table border="1" data-bbox="539 1910 1347 2036"> <thead> <tr> <th data-bbox="539 1910 943 1977">Assessment Components</th> <th data-bbox="943 1910 1347 1977">Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td data-bbox="539 1977 943 2036">Participation</td> <td data-bbox="943 1977 1347 2036">20%</td> </tr> </tbody> </table>		Assessment Components	Percentage of contribution	Participation	20%
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	Assignment	30%																													
	Mid-semester test	20%																													
	Final semester test	30%																													
	Grade conversion of 0-100 scale into 0-4 scale is set as below:																														
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Learning Methods :	Student-centered approach; lecturer and discussion; and presentations (structured activities)																														
Form of Media:	Power point slides; video; worksheets, and textbooks																														
Literature (primary references):	<ol style="list-style-type: none"> 1. Anton, H. & Rorres, C.2005. Elementary Linear Algebra (ninth Edition). New York. John Wiley & Sons. 2. Andrilli, S. & Hecker, D. 2009. Elementary Linear Algebra (Fourth Edition). Berlin. Academic Press. 3. H. Ted Davis & Kendall T Thomson. 2000. Linear Algebra and Linear Operators in Engineering. Academic Press 4. Ron Larson, 2017. elementary Linear Algebra, Cengage Learning. 5. Howard Anton and Anton Kaul, 2019. Elementary Linear Algebra, John Wiley. 6. Hoeward Anton Chris Rorres, 2010. Elementary linear algebra, applications version: student solutions manual, John Wiley & Sons. 																														



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Notes:	<p>*1 credit unit or <i>sks</i> in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</p>
	<p>**1 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</p>