<table>
<tr><td>Module designation</td><td>Elementary Linear Algebra
Indonesian title: Aljabar Linier Elementer
Course code: 8420203007</td></tr>
<tr><td>Semester(s) in which the module is taught</td><td>Semester 3 (Second year)</td></tr>
<tr><td>Person responsible for the module</td><td>Coordinator: Prof. Dr. Raden Sulaiman, M.Si
Teaching staff: Prof. Dr. Raden Sulaiman, M.Si.; Prof. Rooselyna Ekawati, Ph.D.; Dwi Nur Yunianti, S.Si., M.Sc.; Dr. Sugi Hartono, M.Pd.; Nina Rinda Prihartiwi, S.Pd., M.Pd.; Yulia Izza El Milla, S.Pd., M.Pd.; Novita Vindri Harini, M.Pd.; Dr. Mukhtamilatus Sa'diyah, M.Pd</td></tr>
<tr><td>Language</td><td>Indonesian</td></tr>
<tr><td>Relation to curriculum</td><td>Compulsory</td></tr>
<tr><td>Teaching methods</td><td>Lectures, tutorial assignments, and individual study
Media and tools: Slides and LCD projectors, whiteboard</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>(Estimated) total workload: 3 CU × 170 minutes × 16 weeks = 8,160 minutes = 136.00 hours (≈ 4.77 ECTS)
Contact hours: lectures, 3 × 50 minutes per week × 16 weeks = 40.00 hours (class hours per week: 510 minutes = 8.50 hours, including structured activities)
Private study including examination preparation: structured assignments, 3 × 60 minutes per week × 16 weeks = 48.00 hours; independent study, 3 × 60 minutes per week × 16 weeks = 48.00 hours (total 96.00 hours)</td></tr>
<tr><td>Credit points</td><td>3 CU (4.77 ECTS)
1 CU = 170 minutes per week × 16 weeks = 45.3 hours; 1 ECTS = 28.48 hours (144 CU = 229 ECTS), so 1 CU = 1.59 ECTS (UNESA Rector's Decree No. 736/HK/KM/2023).</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>Elementary Number Theory Teori Bilangan Elementer</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>Programme learning outcomes (PLO) addressed:
PLO-5: Apply the basic principles of mathematics to solve simple mathematical problems.
PLO-6: Demonstrate mathematical knowledge and insight.</td></tr>
<tr><td>Content</td><td>Studying Systems of Linear Equations (SLS), matrices, vector spaces, basis and dimension, inner product spaces, linear transformations, and eigenvalues and vectors. SLS solutions are studied through Gaussian and Gaussian-Jordan elimination methods, while matrices are focused on determinants and inverses. Vector spaces are discussed including subspaces, spanning sets, basis, dimension, and row/column spaces. In addition, Euclidean inner product spaces, linear transformations, and eigenvalues and vectors are also discussed with an emphasis on real eigenvalues.</td></tr>
<tr><td>Examination forms</td><td>Final score is calculated from the weekly assessment scheme below (CLO/PLO addressed and weight of each assessment):
<table>
<tr><th>Week</th><th>CLO</th><th>PLO</th><th>Weight (%)</th></tr>
<tr><td>1</td><td>CLO-1</td><td>PLO-5</td><td>3</td></tr>
<tr><td>2</td><td>CLO-1</td><td>PLO-5</td><td>3</td></tr>
</table></td></tr>
</table>

	3	CLO-2	PLO-5	3
	4	CLO-3	PLO-5	3
	5	CLO-3	PLO-6	10
	6	CLO-4	PLO-5	3
	7	CLO-4	PLO-6	3
	8	CLO-4	PLO-5	15
	9	CLO-4	PLO-6	3
	10	CLO-4	PLO-6	3
	11	CLO-4	PLO-5	20
	12	CLO-5	PLO-6	10
	13	CLO-6	PLO-6	3
	14	CLO-6	PLO-6	3
	15	CLO-7	PLO-6	10
	16	CLO-7	PLO-6	5

Study and examination requirements

Students are considered competent and pass if the final score is at least 55 or C.

Final index (grade conversion):

Index	Converted score	Score range (A = final score)
A	4.00	85 ≤ A ≤ 100
A-	3.75	80 ≤ A < 85
B+	3.50	75 ≤ A < 80
B	3.00	70 ≤ A < 75
B-	2.75	65 ≤ A < 70
C+	2.50	60 ≤ A < 65
C	2.00	55 ≤ A < 60
D	1.00	40 ≤ A < 55
E	0.00	0 ≤ A < 40

Reading list

1. Anton, H.& Rorres, C. 2014. Elementary Linear Algebra (11th Edition) . John Wiley & Sons
2. Davis, H.T., & Thomson, K.T. 2000. Linear Algebra and Linear Operators in Engineering with Applications in Mathematica. Academic Press.
3. Andrilli, S., & Hecker, D. 2023. Elementary Linear Algebra (6th Edition). Academic Press.
4. Larson, R. & Falvo, D. C. 2009. Elementary Linear Algebra (6th Edition). Houghton Mifflin Harcourt Publishing Company