



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Mathematics Department

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Undergraduate Programme in Mathematics

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MODULE HANDBOOK

Module name	Applied Linear Algebra I												
Module level, if applicable	Bachelor												
Code, if applicable	MMM-2210												
Subtitle, if applicable	-												
Courses, if applicable	Applied Linear Algebra I												
Semester(s) in which the module is taught	2 nd (second)												
Person responsible for the module	Chair of the Lab. of Algebra												
Lecturer(s)	Dr. Ari Suparwanto, M.Si.												
Language	Bahasa Indonesia												
Relation to curriculum	Elective courses												
Type of teaching, contact hours	100 minutes lecture, 120 minutes structured activities												
Workload	Total workload is 90.67 hours per semester, which consists of 100 minutes lectures per week for 14 weeks, 120 minutes structured activities per week, 120 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.												
Credit points	2												
Requirements according to the examination regulations	Students have taken Applied Linear Algebra I course (MMM-2210) and have an examination card where the course is stated on.												
Recommended prerequisites	Students have taken Elementary Linear Algebra course (MMM-1202) and have participated in the final examination of the course.												
Module objectives/intended learning outcomes	As a result of completing this course, the student will be able: CO1. To Apply concept of elementary linear Algebra on Real Problems. CO2. To use MATLAB software in its calculations.												
Content	Topics: <ol style="list-style-type: none"> 1. Construction of Curves and Planes Equation from Some Given Points, 2. Electrical Network, 3. Equilibrium Temperature Distribution, 4. Cubic Spline Interpolation, 5. Markov Chain, 6. Game Strategy, 7. Leontif Economy Model, 8. Forest Management, 9. Genetics, 10. Population Growth of Certain Age, 11. Harvesting of Animal Population, 12. Least Square Model for Human Hearing, 13. Computed Tomography. 												
Study and examination requirements and forms of examination	The final mark will be weighted as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Assessment methods(components, activities)</th> <th>Weight(percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Examination</td> <td>40</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>30</td> </tr> <tr> <td>3</td> <td>Class Activities (Quiz, Homework, etc.)</td> <td>30</td> </tr> </tbody> </table> The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.	No	Assessment methods(components, activities)	Weight(percentage)	1	Final Examination	40	2	Mid-Term Examination	30	3	Class Activities (Quiz, Homework, etc.)	30
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1	Final Examination	40											
2	Mid-Term Examination	30											
3	Class Activities (Quiz, Homework, etc.)	30											

Media employed	LCD Projector, Board, Laptop
Reading List	<p>[1] David C. Lay, Stephen R. Lay, Judi J. McDonald, 2015, <i>Linear Algebra and Its Applications</i>, Pearson Education Limited.</p> <p>[2] Howard Anton and Chris Rorres, 2014, <i>Elementary Linear Algebra: With Supplemental Applications</i>, John Wiley and Sons Inc.</p> <p>[3] De Franza J., Gagliardi, D., 2009, <i>Introduction to Linear Algebra with Applications</i>, McGraw-Hill, Boston.</p> <p>[4] Keith Nicholson, 2001, <i>Elementary Linear Algebra</i>, McGraw-Hill Book Co., Singapore.</p> <p>[5] Carl D. Meyer, 2000, <i>Matrix Analysis and Applied Linear Algebra</i>, SIAM http://saba.kntu.ac.ir/eecd/sedghizadeh/Ebooks/Matrix_Analysis.pdf</p>

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1		v			v		v		
CO 2				v					