



Module Description/Course Syllabi

Study Programme: Bachelor of Mathematics
Faculty of Mathematics and Natural Sciences
Universitas Andalas

1. Course number and name

MAT62212 Application of Linear Algebra 2

2. Credits and contact hours/Number of ECTS credits allocated

3 sks / 4,53 ECTS

3. Instructors and course coordinator

1. Dr. Yanita; 2. Monika Rianti Helmi, M.Si; 3. Dr. Noverina Alfiany

4. Text book, title, author, and year

1. H. Anton & C. Rorres (2014). *Elementary Linear Algebra*. 11th edition. Wiley, USA
2. Related articles or publications

5. Recommended reading and other learning resources/tools

6. Specific course information

A. Brief description of the content of the course (catalog description)

This course will provide and discuss several applications or applications of basic linear algebra theories, namely vector space, inner product space, eigenvalue and Eigen vector, and linear transformation. Some applications related to the above concepts are genetica, AHP problem, PAC problems, search engine problems, matrices Leslie problems and cryptography

<i>B. Prerequisites or co-requisites</i>
Elementary Linear Algebra, Calculus 1, Calculus 2
<i>C. Indicate whether a required or elective course in the program</i>
Elective
<i>D. Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)</i>
First Cycle Bachelor
<i>E. Year of study when the course unit is delivered (if applicable)</i>
2 nd Year
<i>F. Semester when the course unit is delivered</i>
Even Semester
<i>G. Mode of delivery (face-to-face, distance learning)</i>
Face to face and distance

<i>7. Intended Learning Outcomes</i>
ILO-3 An ability to identify, explain, and generalise simple mathematical PI-1: An ability to identify simple mathematical problems PI-2: An ability to explain simple mathematical problems

<p>ILO-4 An ability to use concepts and fundamental techniques of mathematics in solving simple mathematical problems PI-1: An ability to illustrate simple mathematical problems based on appropriate basic mathematical concepts and techniques</p>
<p>ILO-6 Have ability to data literacy and technology and can apply them in solving simple mathematical problems or other relevant fields PI-1: Able to identify the right data and technology to solve simple mathematical problems or other fields</p>
<p>ILO-7 An ability to communicate effectively especially in the area of mathematics in with diverse communities PI-1: Able to convey ideas or study results orally, especially in the field of mathematics PI-2: Able to present ideas or study results in writing, especially in the field of mathematics PI-3: Able to respond to feedback given</p>
<p>ILO-8 An ability to work in a team PI-1: Able to actively participate in a team with full responsibility PI-2: Able to respond well to any feedback within the team PI-3: Able to complete tasks according to the set schedule PI-4: Able to adapt in a team</p>
<p>8. Course Learning Outcomes</p>
<p>1. Students are able to identify real problems related to vector spaces, inner product spaces, values and eigenvectors, and linear transformations</p>
<p>2. Students are able to choose methods, data, data collection techniques, and basic techniques to solve problems related to vector spaces, inner product spaces, values and eigenvectors, and linear transformations</p>
<p>3. Students are able to use the concepts of vector space, inner product space, value and eigenvector, and linear transformation to solve real problems</p>

4. Students are able to analyze and evaluate research results
5. Students are able to communicate the results of their research orally and in writing according to scientific principles.
6. Students are able to work in teams
9. Brief list of topics to be covered
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10. Learning and teaching methods
Project Based Learning
11. Language of instruction
Bahasa and English

12. Assessment methods and criteria
Summative Assessment :
1. Proposal (progress and report): 20%
2. Presentation: 20%
3. Project (progress, report, article and poster): 60%
Formative Assessment: