**UNIVERSITAS NEGERI YOGYAKARTA**

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

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**Bachelor of Science in Mathematics**

**MODULE HANDBOOK**

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| Module name: | Applied Linear Algebra |
| Module level,if applicable: | Undergraduate |
| Code: | MAT6339 |
| Sub-heading,if applicable: | - |
| Classes,if applicable: | - |
| Semester: | 6th |
| Module coordinator: | Dr. Karyati, M.Si. |
| Lecturer(s): | 1. Dr. Karyati, M.Si. <br> 2. Dr. Agus Maman Abadi, M. Si. |
| Language: | Bahasa Indonesia |
| Classification within the curriculum: | Elective course |
| Teaching format / class hours perweek during the semester: | 150 minutes lectures and 180 minutes structured activities per week. |
| Workload: | Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks. |
| Creditpoints: | 3 |
| Prerequisites course(s): | Advanced Linear Algebra (MAT6326) |
| Course outcomes: | After taking this course the students have ability to: <br> CO1. Respecting other people's views, opinions,and original ideas. <br> CO2. Applied linear algebra in GPS and iteration method. <br> CO3. Applied linear algebra in markov chain and population's |

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| | growth<br>CO4. Applied linear algebra in differential equation system dan singular value decomposition problem<br>CO5. Applied linear algebra in other statistics problems. |
| Content: | This course discusses about application of linear equation system on GPS and iteration method, application matrix on Markov Chain problem, population growth and digital image compression, aplication of eigenvalues on linearly differential equation system, singular decompotition problems, and others |
| Study/exam achievements: | CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitudeif they show it significantlycompared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of therequirements to pass the course. Students will pass from this course if at least have a good attitude.<br><br>The final mark will be weight as follow: |

| No | CO | Assessment Object | Assessment Technique | Weight |
|---|---|---|---|---|
| 1 | CO 1-CO 5 | a. Individual assignment | Written test | 15% |
| | | b. Group assignment | | 15% |
| | | c. Quiz | | 10% |
| | | d. Mid Exam | | 30% |
| | | e. Final Exam | | 30% |
| | | | Total | 100% |

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| Forms of media: | Board, LCD Projector, Laptop/Computer |
| Literature: | 1. Anton, H, 1995. Elementary Linear Algebra. New York. John Wiley and Sons.<br>2. Anton, H, 1995. Linear Algebra and Its Application. New York. John Wiley and Sons<br>3. Poole, D, 2006. Linear Algebra: A Modern Introduction, 2nd Edition. Belmont: Thomson Higher Education<br>4. Setya Budi, Wono, 1995. Aljabar Linear. Jakarta. PT |

| | | Gramedia Utama |
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**PLO and CO mapping**

| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | | ✓ | | | | | | | | |
| CO2 | | | | ✓ | | | | | | |
| CO3 | | | | | ✓ | | | | | |
| CO4 | | | | | | | ✓ | | | |
| | | | | | | | | | | ✓ |