UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

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Bachelor of Science in Mathematics   **MODULE HANDBOOK**

Module name:	Advanced Linear Algebra
Module level,if applicable:	Undergraduate
Code:	MAT6326
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	5th
Module coordinator:	Dr. Karyati
Lecturer(s):	1. Dr. Agus Maman Abadi 2. Dr. Karyati 3. Musthofa, M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory 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):	Linear Algebra (MAT6308)
Course Outcomes:	After taking this course the students have ability to: CO1. Demonstrate respect for other people's opinions in completing group and individual tasks CO2. Able to think critically, creatively, innovatively, and

	systematically in the development of theory and application of advanced linear algebra.
	CO3. Mastering in depth both theory and application of Advanced Linear Algebra
	CO4. Prove properties such as theorem, lemma, simple consequences related to the theory of Advanced Linear Algebra
Content:	This course discusses General Vector Space, Vector Subspace, Linear Combination, Spanning, independent linear, Basis,Dimension, Row and column space, Inner product space, vector length and distance, Orthogonal and orthonormal Basis, Gram-Schmidt Process, Vector Coordinate and Basis Change, Linear Transformation, Kernel and range, Rank and Nullity, Linear Transformation Matrix, Similarity, Eigenvalue and Eigenvector, Diagonalization of Matrices and their properties.
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.

The final mark will be weight as follow:

No	CO	Assessment Object	Assessment Technique	Weight
1	CO2	Presentation	Observation	15%
2	CO3 and CO 4	a. Individual Assignment	Presentation / written test	10%
		b. Group Assignment		10%
		c. Quiz		
		d. Mid		20%

			e. Final Exam		20% 25%
				Total	100%

Forms of media:	Board, LCD Projector, Laptop/Computer
Literature:	1. Anton, H, 1995. *Elementary Linear Algebra*. New York. John Wiley and Sons. 2. Anton, H, 1995. *Linear Algebra and Its Application*. New York. John Wiley and Sons 3. Poole, D, 2006. Linear Algebra: A Modern Introduction, 2nd Edition. Belmont: Thomson Higher Education 4. Bretscher. 1997. Linear Algebra with Application. International Edition. London: Prentice-Hall International.

PLO and CO mapping

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