UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
MATHEMATICS DEPARTMENT, MATHEMATICS STUDY PROGRAM
Main Campus Universitas Negeri Padang.
Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
Telepon: +62 751 7053902, Fax: +62 751 7055628
Email: humas@unp.ac.id

Bachelor of Science in Mathematics **MODULE HANDBOOK**

Module name:	Linear Algebra
Module level, if applicable:	Bachelor
Code:	MAT2.62.6001
Sub-heading, if applicable:	-
Classes, if applicable:	Linear Algebra
Semester:	6^{th} (sixth)
Module coordinator:	Head of Algebra Expertise group
Lecturer(s):	Drs. Yusmet Rizal, M.Si.
Language:	Indonesian Language and English
Classification within the curriculum:	Elective Courses in the third year (6^{th} semester) of Bachelor Degree
Teaching format / class hours per week during the semester:	a. Lectures : Cooperative learning with methods such as expository and discussion. (3 x 50 minutes = 150 minutes). b. Structured assignment : Weekly individual written assignment. (3 x 60 minutes = 180 minutes). c. Individual study (3 x 60 minutes = 180 minutes).
Workload:	Total workload is 136 hours per semester, which consists of 150 minutes lectures, 180 minutes structured assignment, and 180 minutes individual study for 16 weeks per semester, including midterm and final exams.
Credit points:	3 sks = 4.53 ECTS
Prerequisites course(s):	Elementary Linear Algebra
Course Outcomes:	After completing this course, the students have ability to: CO 1: Generalize the ajabar properties of real numbers into the field properties related to the form of the matrice. CO 2 : Determine the elementary row operation on matrice, the result of the sum and multiplication of the matrice, the equivalent matrice, and the characteristic equation of a matrice. CO 3. Determine matrice determinant using cofactor expansion and the direct sums. CO 4. Devise linear transformation R^2 into R^3 or

	otherwise.
Content:	1. Matrice on field (matrice equivalence, matrice determinant vector space and subspace 2. Linear independent, basis, rank, and coordinate 3. Linear transformation (matrix representation, basis change, similarity, and orthogonality. 4. Cayley Hamilton theorems 5. Direct Sums 6. Canonical Jordan
Study/exam achievements:	The final mark will be weighted as follows: The assessment consists of final exam (40 %), mid term exam (35%), assignment (10 %), and discussion (15%). Final and mid term exams are in the form of a closed book essay written test (120 minutes). Weekly assignments (solving selected problems) are given in two forms; group and individual assignments. To further understand the topic, a classroom discussion is held.
Forms of media:	White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.
Literature:	1. Gilbert Strang, 2016, Linear Algebra, Fifth Edition, Wellesley-Cambridge Press. U.S. 2. David C. Lay, Stephen R. Lay, Judi J. McDonald, 2015, Linear Algebra and Its Applications, Pearson Education Limited. 3. Charles G. Cullen, 1972, *Matrices and linear transformations*, 2nd ed. Addison-Wesley Publishing Company : New York

PLO and CO Mapping

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