HANDBOOK

BACHELOR OF INFORMATICS PROGRAM
DEPARTMENT OF INFORMATICS
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY
INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Module name	**Linear Algebra**
Module level	Undergraduate
Code	IF184302
Courses (if applicable)	**Linear Algebra**
Semester	Fall (Gasal)
Contact person	Bilqis Amaliah, S.Kom, M.Kom
Lecturer	Bilqis Amaliah, S.Kom, M.Kom Yudhi Purwananto, S.Kom, M.Kom
Language	Bahasa Indonesia and English
Relation to curriculum	1. Undergraduate degree program; mandatory; 3rd, 5th, or 7th semester. 2. International undergraduate program; mandatory; 3rd, 5th, or 7th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 40 students
Workload	1. Lectures: 3 x 50 = 150 minutes (2 hours 30 minutes) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week.
Credit points	3 credit points (sks).
Requirements according to the examination	A student must have attended at least 80% of the lectures to sit in the exams.

regulations	
Mandatory prerequisites	Calculus 2

Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:	
	CO1 Students are able to solve the system linear equations (SLE) problem using computational matrix.	PLO3
	CO2 Students are able to solve Matrix operation problem and Pseudo-inverse.	PLO3
	CO3 Students are able to solve vector space problem.	PLO3
	CO4 Students are able to solve basis problem	PLO3
	CO5 Students are able to solve eigen problem	PLO4
	CO6 Students are able to implementation SLE, matrix and basis into the program.	PLO4
	CO7 Students are able to apply linear algebra in some cases	PLO5
Content	Knowledge: Mastering principles and methods to solve computation problems by using calculus, matrix, statistics, approximation, linear optimization, modelling and simulation. Specific Skill: Able to solve computation problems, and mathematical modelling through exact, stochastic, probabilistic, and numeric approaches effectively and efficiently.	
Study and examination requirements and forms of examination	Mid-terms examination and Final examination.	
Media employed	LCD, whiteboard, websites, books (as references), etc.	
Assessments and Evaluation	CO1: Problem 1 in mid-term exam (5%) and exercise 1 (5%) - 10% CO2: Problem 2 in mid-term exam (5%) and exercise 2 (5%) -	

	10% CO3: Problem 3 in mid-term exam (5%); problem 4 in mid-term exam (5%); assignment 1: make an algorithm and computer program (5%); and exercise 3 (5%) - 20% CO4: Problem 5 in mid-term exam (5%); problem 1 in final exam (5%) and exercise 4 (5%) - 15% CO5: Problem 2 in final exam (5%); assignment 2: make a function and recursive (5%); and exercise 5 (5%) - 15% CO6: Problem 3 in final exam (5%) and exercise 6 (5%) - 10% CO7: Problem 4 in final exam (5%) and exercise 7 (5%) - 10% CO8: Problem 5 in final exam (5%) and assignment 3: make a program based on a real-life problem (5%) - 10%
Reading List	Elementary Linear Algebra ; Howard Anton, Drexel University, John Wiley & Sons, Inc; ninth edition, 2005 Elementary Linear Algebra - applications version; Howard Anton, Chris Rorres; John Wiley & Sons, Inc; ninth edition, 2005