



MODULE HANDBOOK NUMERICAL METHODS

**BACHELOR DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS
INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

MODULE HANDBOOK

Numerical Methods

Module name	Numerical Methods	
Module level	Bachelor	
Code	KM184404	
Course (if applicable)	Numerical Methods	
Semester	Spring (Genap)	
Person responsible for the module	Drs. Lukman Hanafi, M.Sc	
Lecturer	Drs. Lukman Hanafi, M.Sc	
Language	Bahasa Indonesia and English	
Relation to curriculum	Bachelor degree program, mandatory , 4 th semester.	
Type of teaching, contact hours	Lectures, <60 students	
Workload	<ol style="list-style-type: none"> 1. Lectures : 3 x 50 = 150 minutes per week. 2. Exercises and Assignments : 3 x 60 = 180 minutes (3 hours) per week. 3. Private learning : 3 x 60 = 180 minutes (3 hours) per week. 	
Credit points	3 credit points (sks)	
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.	
Mandatory prerequisites	-	
Learning outcomes and their corresponding PLOs	Course Learning Outcome (CLO) after completing this module, CLO-1 Students understand and can solve problems related to numerical methods that are often found in science and engineering problems with the help of computers.	
Content	In this course, numerical methods will be studied to solve the search for equation roots, systems of linear equations, systems of non-linear equations, differential and numerical integration and curve matching. Algorithms for these methods will be studied and implemented in the programming languages that have been studied. Furthermore, students are expected to be able to solve numerical problems related to science and technology.	
Study and examination	<ul style="list-style-type: none"> • In-class exercises • Assignment 1, 2, 3 	

requirements and forms of examination	<ul style="list-style-type: none"> • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading lists	<p>Main :</p> <ol style="list-style-type: none"> 1. Gerald, C. F. & Wheatley O. P, 2013. “ Applied Numerical Analysis 7th edition”, Addison Wesley Publishing Company, California 2. Chapra, S.C. & R.P. Canale, 1989, “ Metode Numerik” Edisi ke-2, Penerbit Airlangga, Jakarta <p>Supporting :</p> <ol style="list-style-type: none"> 1. Burden, R.C., Faires J.D. , Reynolds, A.C., 2010, “ Numerical Analysis”, Brooks/Cole Cengage Learning, Boston