MODULE HANDBOOK
FINITE ELEMENT METHODS

BACHELOR DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK
FINITE ELEMENT METHODS

Module name	**Finite Element Methods**
Module level	Bachelor
Code	KM184822
Course (if applicable)	Finite Element Methods
Semester	Spring (Genap)
Person responsible for the module	**Drs. Kamiran, M.Si**
Lecturer	**Drs. Kamiran, M.Si**
Language	Bahasa Indonesia and English
Relation to curriculum	Bachelor degree program, **elective**, 3rd semester.
Type of teaching, contact hours	Lectures, <60 students
Workload	1. Lectures : 2 x 50 = 100 minutes per week. 2. Exercises and Assignments : 2 x 60 = 120 minutes (2 hours) per week. 3. Private learning : 2 x 60 = 120 minutes (2 hours) per week.
Credit points	2 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 the finite element method that is often encountered in science and engineering problems.
Content	Euler-Lagrange Equation, Ritz Method, Finite Element Method, Galerkin Method, Formation of elements, construction of basic functions, Barycentric coordinates, global coordinate assembly.
Study and examination requirements and forms of examination	• Assignment 1 & 2 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading list	1. Cuvelier, C., Segal, A & A.A. Steenhoven, 1986. " Finite Element Method and Navier-Stokes Equation", Doordrecht.