



MODULE HANDBOOK

Financial Mathematics

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

MODULE HANDBOOK

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Module name	Financial Mathematics	
Module level	Master	
Code	KM185276	
Course (if applicable)	Financial Mathematics	
Semester	Spring (Genap)	
Person responsible for the module	Endah RM Putri, S.Si, M.T, Ph.D	
Lecturer	Endah RM Putri, S.Si, M.T, Ph.D	
Language	Bahasa Indonesia and English	
Relation to curriculum	Master degree program, elective, 3 rd 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	Calculus II	
Learning outcomes and their corresponding ILOs	<p>Course Learning Outcome (CLO) after completing this module,</p> <p>CLO - 1 : Students are able to understand and apply their mathematics ability to build annuity models.</p> <p>CLO – 2 : Students are able to understand and develop the loan repayment scheme</p> <p>CLO – 3 : Students are able to learn and determine the bond value</p> <p>CLO – 4 : Students are able to learn and develop the analysis of rate of return in investments.</p>	
Content	This course provides theories and models of annuity, interest rate, and portfolio investment. The modelling of annuity for various payment schemes with related various interest rate models is presented. Then the	

	development of investment portfolio based on the annuity models is assigned for the applications.
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> • In-class exercises • Assignment 1, 2, 3 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading list	<p>Main :</p> <ol style="list-style-type: none"> 1. Garrett, SJ, "An Introduction to the Mathematics of Finance ", Second Edition, Elsevier, 2013 2. Broverman, Samuel, "Mathematics of Investment and Credit", 5th Edition, ACTEX Publication 2010 3. Brigham, EF and Ehrhardt, MC, "Financial Management", Thomson Southwestern