MODULE HANDBOOK
Optimum Estimation

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

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK

Optimum Estimation

Module name	**Optimum Estimation**	
Module level	Undergraduate	
Code	KM184816	
Course (if applicable)	Optimum Estimation	
Semester	Spring (Genap)	
Person responsible for the module	Prof. Dr. Erna Apriliani, M.Si	
Lecturer	Prof. Dr. Erna Apriliani, M.Si	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergradute degree program, **elective** 8th 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 75% of the lectures to join the exams.	
Mandatory prerequisites	-	
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO) after completing this module, CLO-1 Be able to understand the problem of dynamic system estimation, know the methods of estimation both classical and modern and able to apply it appropriately. CLO-2 Be able to analyze natural pheneomena; identify the Mathematics model, estimate the variables by forming a good computer programming algorithm. CLO-3 Be able to cooperate in presenting small topics related to optimum estimation in both written and oral form.	CLO-01 CLO-02 CLO-03

Content	This course examines classical estimation, deterministic observer, stochastic observer (stochastic dynamic system estimation), its formation and its application to Linear stochastic dynamic problems.
Study and examination requirements and forms of examination	• In-class exercises • Assignment 1,2 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading lists	Main : 1. Phil Kim, Lynn Huh, “Kalman Filter for Beginners : with MATLAB Examples”, A-JIN Publishing Company, 2010. 2. Dan Simon, “Optimal State Optimation”, John Wiley and Son, 2006. Supporting : 1. Phil Kim, Lynn Huh, “Kalman Filter for Beginners : with MATLAB Examples”, A-JIN Publishing Company, 2010. 2. Dan Simon, “Optimal State Optimation”, John Wiley and Son, 2006.