Department of Mathematics
Institut Teknologi Sepuluh Nopember
email : matematika@its.ac.id – web : https://www.its.ac.id/matematika

Course	**Course Name**	**: Optimum Estimation**
	Course Code	**: KM184816**
	Credit	**: 2**
	Semester	**: 8**

Description of Course	
This course examines classical estimates, deterministic observers, stochastic observers (estimation of stochastic dynamic systems), their formation and application for linear stochastic dynamic problems.	
Learning Outcome	
PLO 3	[C4] Students are able to analyze simple and practical problems in at least one field of analysis, algebra, modeling, system optimizations and computing sciences
PLO 4	[C5] Students are able to work on a simple and clearly defined scientific task and explain the results, both written and verbally either on the area of pure mathematics or applied mathematics or computing sciences
Course Learning Outcome	
1. Able to understand the problem of dynamic system estimation, know the methods of estimation both classical and modern and able to apply it appropriately 2. Able to analyze natural pheneomena; identify the Mathematics model, estimate the variables by forming a good computer programming algorithm 3. Able to cooperate in presenting small topics related to optimum estimation in both written and oral form	
Main Subject	

Classical estimation theory, deterministic observer, stochastic observer, Kalman filter, Applied Kalman filter, Color Noise.
Prerequisites
Elementary Linear Algebra Ordinary Differential Equations
Reference
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 Reference
1. Lewis, F., “Optimal Estimation”, John Wiley & Sons, Inc, 1986. 2. Grewal, Mohinder, S., ”Kalman Filtering Theory and Practise Using MATLAB”, John Wiley &Sons, Inc., 2008