

COURSE TITLE	TE142313: System Identification, Estimation and Prediction Credits: 3 Semester: II
LEARNING OBJECTIVES	Students have working knowledge about system identification and state estimation, implement them in computer and able to follow the advance of them.
COMPETENCY	<ul style="list-style-type: none"> • The students are able to use the concept of system identification to build model for control system applications. • The students are able to design Kalman filter to estimate state of a system. • The students are able to implement system identification and state estimation using computer. • The students are able to criticize publication in related topics
SUBJECTS	<ul style="list-style-type: none"> • System identification and state estimation concept • System modeling: nonparametric and parametric system identification in time and frequency domain, model validation • Wiener filter, Kalman filter, smoothing, extended Kalman filter, distributed state estimation
MAIN REFERENCES	<ul style="list-style-type: none"> • T. Söderström, P. Stoica, <u>System Identification</u>, Prentice Hall 1989. • R.G. Brown, P.Y.C. Hwang, <u>Introduction to Random Signals dan Applied Kalman Filtering</u>, 3rd Ed, John Wiley and Sons, 1997. • D. Simon, <u>Optimal State Estimation – Kalman, H_∞ and Nonlinear Approaches</u>, John Wiley and Sons, 2006. • J.M. Mendel, <u>Lessons in Estimation Theory for Signal Processing, Communications, and Control</u>, Prentice Hall International, 1995.
OPTIONAL REFERENCES	<ul style="list-style-type: none"> • Makalah jurnal dan seminar internasional
PREREQUISITE	-