

COURSE TITLE	TE142314: Optimal Control Systems Credits: 3 Semester: II
LEARNING OBJECTIVES	<ul style="list-style-type: none"> Students are able to design optimal control systems via minimum-energy and minimum-time criteria for continuous-time and discrete-time systems.
COMPETENCY	<ul style="list-style-type: none"> The student should be able to use the concept of optimal control to design a control system of linear plant, and validate the designed control system using numerical simulation and implementation to the real plant. The student should be able to build the optimal control system algorithms using Matlab and Simulink.
SUBJECTS	<ul style="list-style-type: none"> Optimization techniques, Hamilton calculus of variation Linear Quadratic Regulator, Linear Quadratic Tracking Optimal control via output feedback State estimator, LQG/LTR, Minimum-time optimal control, Robustness design The application of optimal control to the real plant.
MAIN REFERENCES	<ul style="list-style-type: none"> Anderson, B.D.O., <u>Optimal Control: Linear Quadratic Methods</u>, PHI, New Jersey, 1989. Frank L. Lewis, Vassilis L. Syrmos, <u>Optimal Control</u>, John Wiley & Sons Inc., New York, 1995 Frank L. Lewis, <u>Applied Optimal Control and Estimation</u>, PHI, New Jersey, 1992. Trihastuti Agustinah, <u>Diktat Kuliah RE-1470: Sistem Pengaturan Optimal</u>, Teknik Elektro ITS, 2005.
OPTIONAL REFERENCES	Articles related to Optimal Control System
PREREQUISITE	Linear System Theory