

COURSE	Name : Analysis and Design of Control Systems
	Code : EE185720
	Credit(s) : 2
	Semester : (Elective Course)

Description of Course

This course discusses modern control techniques that use mathematical models of the system in the form of state space for mechanical and electrical systems. The scope studied in this course is modeling techniques, response analysis and stability, and the design of control systems in state space.

Learning Outcomes

Knowledge

(P01) Mastering the concepts and principles of science in a comprehensive manner, and to develop procedures and strategies needed for the analysis and design of systems related to the field of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics as a preparation for further education or professional career.

Specific Skill

(KK01) Being able to formulate engineering problems with new ideas for the development of technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

Course Learning Outcomes

Knowledge

Mastering the techniques of analysis and design of control systems in the representation of state equations.

Specific Skill

Able to analyze and design of control system using the state space equations.

General Skill

Able to simulate the results of the control system design using simulation software.

Attitude

Having a responsible attitude to increase knowledge in the field of control systems independently.

Main Subjects

1. Mathematical Modeling of Mechanical Systems and Electrical Systems
2. Transient and Steady-State Response Analysis
3. Control Systems Analysis in State Space
4. Control Systems Design in State Space

Reference(s)

- [1] Ogata, Katsuhiko. "Modern Control Engineering", 5 edition, Pearson, 2009.
- [2] Kuo, C. Benjamin. "Automatic Control System", Wiley, 2002.
- [3] Franklin, F. Gene, Powell, J. David, Naeini, Abbas Emami. "Feedback Control of Dynamic System 6th edition"
- [4] Nise, Norman S., "Control System Engineering". Wiley. 2015

Prerequisite(s)

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