

<b>COURSE</b>	Name : Networked Control Systems
	Code : EE185524
	Credit(s) : 2
	Semester : (Elective Course)

### Description of Course

The course of networked control systems equips students with the concepts and applications of the control system in which the sensors and/or actuators are connected through a computer network. We will examine the problems that arise with the configuration of this control system, how to model and to conduct a system behavior analysis will be discussed. With the results of the analysis, the controller synthesis will be performed to get the system with the desired performance.

### Learning Outcomes

#### Knowledge

(P02) Mastering engineering concepts and principles to develop the necessary procedures and strategies for systems analysis and design in the areas of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

#### Specific Skill

(KK02) Being able to compose problem solving in engineering through depth and breadth of knowledge which adapts to changes in science and 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

(S11) Trying his/her best to achieve perfect results.

### Course Learning Outcomes

#### Knowledge

Mastering the concepts and application of networked control systems system

#### Specific Skill

Being able to perform analysis and design of system control that are connected in the network

#### General Skill

Being able to use CAD to perform analysis and design of networked control systems

#### Attitude

Trying his/her best to achieve perfect results.

### Main Subjects

1. Concept and networked architecture in control system
2. Types of networked control system
3. Components in networked control system
4. Problems in the networked control system

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5. Estimating on the network with data loss
  6. Analyzing the network arrangement system
  7. Designing a network arrangement system
  8. Application on the networked control system

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#### Reference(s)

- [1] Bemporad, Alberto, Heemels, Maurice, Vejdemo-Johansson, Mikael, Networked Control Systems, Springer, 2010
- [2] Jagannathan Sarangapani, Hao Xu, Optimal Networked Control Systems with MATLAB, CRC Press, 2016
- [3] Relevant journal and conference articles

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#### Prerequisite(s)

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