EECE423-01: 현대제어이론

Modern Control Theory

Introduction

Kim, Jung Hoon

Modern Control Theory (EECE423-01)

- Class objectives:
  - ✓ To obtain the fundamentals of the modern control theory based on **state-space representation of control systems**
  - ✓ To assist the students in studying various **advanced control theories** as well as their practical applications

- Prerequisite:
  - ✓ EECE322: Introduction to Automatic Control (recommended)
  - ✓ EECE233: Signals and systems
  - ✓ MATH300: Applied linear algebra

- Textbook and References
  - ✓ **J. P. Hespanha, "Linear Systems Theory," 2nd edition, Princeton University Press**
  - ✓ U. Mackenroth, "Robust Control Systems: Theory and Case Studies"
  - ✓ P. J. Antsaklis, "A Linear Systems Primer"

Modern Control Theory (EECE423-01)

Main topics:

1. Introduction
2. Review of linear algebra
3. State-space representation
4. Response of LTI systems
5. Stability
6. Controllability
7. Observability
8. Controller Synthesis

Modern Control Theory (EECE423-01)

- Grading

✓ Mid-term (25%), Final-term (25%), Quiz (20%), Homework (10%), Attendance (10%)

- Note that these percentages are approximate and meant as a guideline. The percentages will be confirmed based on the performance of students after the mid-term

✓ Please use the **Electronic Attendance System**

✓ Students should complete the **homework on schedule**.

✓ **Please do not copy others' homework solutions.**
- Discovery of such copying is likely to result in high penalties, directly affecting your final grades.

✓ Any question will be welcome during the office hours **(11:00-12:00, Tue., Thu.)**

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Modern Control Theory (EECE423-01)

- Lecturer
  - Name: Kim, Jung Hoon (김정훈)
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    LG Research Building #309
  - Research interests: Control theory, control applications

    *Mathematical control theories to analyze and design various complex systems

    *Control algorithms to operate various practical systems such as robots, helicopter, and so on

Date	Day	Lecture No.	ETC.
3/17	**Tue.**	**1**	**Online Lecture**
3/19	**Thu.**	**2**	**Online Lecture**
3/24	**Tue.**	**3**	**Online Lecture**
3/26	**Thu.**	**4**	**Online Lecture**
3/31	Tue.	5	
4/2	Thu.	6	
4/7	Tue.	7	
4/9	**Thu.**	**8**	**Deadline for Homework 1**
4/14	Tue.	9	
4/16	Thu.	10	
4/21	Tue.	11	
4/23	Thu.	12	
4/28	Tue.	13	
4/30	**Thu.**	**14**	**Quiz 1 (Holiday)**
5/5	**Tue.**	**15**	**Mid-Term Exam (Holiday)**
5/7	Thu.	16	
5/12	Tue.	17	
5/14	Thu.	18	
5/19	Tue.	19	
5/21	Thu.	20	
5/26	Tue.	21	
5/28	Thu.	22	
6/2	**Tue.**	**23**	**Deadline for Homework 2**
6/4	Thu.	24	
6/9	Tue.	25	
6/11	Thu.	26	
6/16	Tue.	27	
6/18	Thu.	28	
6/23	Tue.	29	**Quiz2**
6/25	**Thu.**	**30**	**Final-Term Exam**