Syllabus of Spring Semester, 2018

Course Title	CONTROL ENGINEERING	Course Code	EE26217	Section	057
Department	Electronics Engineering	Level	3	Credit – Theory – Practice	3.0 – 3.0 – 0.0

Class Hours & Classroom	Mon. 10:30(75) 107-8405,Wed. 10:30(75) 107-8405				

Lecturer	LEE, JANG-MYUNG	Office		Office Hours	화요일 오후 1시 ~ 5시
		Telephone		E-mail	

Methodology of Instruction	

Evaluation and Grading	-Attendance 10%, -Midterm Exam 25%, -Final Exam 35%, -Assignment 10% and Quiz 20%, * Students with disabilities can request an extension of the exam hour, and they can take exams by getting writing assistance or by using a computer.

Prerequisites	

Course Objectives	In this class, students can achieve the abilities regarding the following topics: 1.Mathematical foundation of linear systems, 2.Modeling of systems in the s-domain, 3.Modeling of systems in the state space, 4.Time response of systems , 5. Analysis of stability and steady-state errors, 6 Root-locus techniques , and 7. Design of control systems by changing the gain K. Basically through the class, students become able to analyze the perfromance of control systems.

Course Description	This course introduces students the theory and practice of control systems engineering. During the classes, the practical applications of the subject to the analysis and design of feedback systems will be emphasized. Control systems are found in a broad range of applications within the electrical and electronics engineering, from aircraft and spacecraft to robots and process control systems. The students for this class should have completed typical lower-division courses in physics and mathematics through differential equations. * Students with disabilities can negotiate with the Disabled Student's Academic Support Center regarding course materials and assignments.

Relationship between Courses and Core Competencies

8 Core Competencies of PNU								

Textbooks and References

Required Textbooks	Control Systems Engineering, Sixth Edition, Norman S. Nise
References	Contemporary Linear Systems Using MATLAB, Robert D. Strum and Donald E. Kirk, 2000

	Weekly Schedule of Classes	
Week No.	Course Material	Assignments and Other Notes
Week 1	[Orientation and Education on Academic Misbehavior(e.g. Cheating, Plagiarism) and Safety Education on Experiment and Practice] Introduction to linear control systems	
Week 2	Modeling in the frequency domain	
Week 3	Electromechanical system transfer function	Chapter 2 Problems (selected)
Week 4	Modeling in the time domain	Chapter 3 Problems (Selected)
Week 5	Linearization	
Week 6	Time response analysis	
Week 7	Poles and Zeroes from the system transfer function	Chapter 4 Problems (Selected)
Week 8	Review and Mid-term	
Week 9	Reduction of multiple subsystems	Chapter 5 Problems (Selected)
Week10	Stability analysis	Chapter 6 Problems (Selected)
Week11	Steady state response	
Week12	Forced response errors	Chapter 7 Problems (Selected)
Week13	Root locus techniques	
Week14	Transient response design via gain adjusting	Chapter 8 Problems (Selected)
Week15	Final Examination	
Week16		
Attachment		