ME446.630 Control Systems II
Mechanical Engineering@SNU Fall 2014

Instructor: Prof. Dongjun Lee (office) 301-1517 (e-mail) djlee@snu.ac.kr (p) 02-880-1724

Class Schedule: T/R 17:00-18:15pm @ 301-303

Office Hours: TBA

Textbook:

Nonlinear systems, 3rd Ed., H. K. Khalil, Prentice-Hall
Applied Nonlinear Control, Slotine and Li, Prentice-Hall, 1991

Reference:

Nonlinear systems: analysis, stability and control, S. Sastry, Springer, 1999
Constructive nonlinear control, R. Sepulchre, M. M. Jankovic & P. Kokotovic, Springer-Verlag

Course Description: As a sequel to 446.632 Control Systems I, this course aims to introduce graduate students to the essential concepts and techniques of modern control system theory, with particular emphasis in this semester on the nonlinear system analysis, Laypunov stability theory and control design, sliding control, adaptive control, online parameter estimation, and optimal control. Main topics of the course in this semester are:

Introduction to nonlinear systems
Lyapunov stability method and advanced stability techniques
Feedback linearization
Lyapunov-based control design
Sliding mode control
Adaptive control and online parameter estimation
Optimal control
Other topics of choice (if time permits)

Prerequisites: Control system I (ME446.632) or equivalent; or by the consent of instructor

Grading: homework (20%) mid-term exam 10/28/2014 7-9:30pm (40%) final project TAB (40%)

Homework: Homework should be turned in at the beginning of the lecture on the due date. If turned in late on the same day, 50% will be deduced. Otherwise, it will get zero point. Homework will also be *peer-graded* with the point of 0/0.25/0.5/0.75/1 from 0-1 scale.

Students conduct: students are expected to behave professionally in this class: going-in/out during the class, newspaper reading, phone call, texting, or any other unprofessional behaviors (e.g. what you would haven't done in high school) are not allowed.

Academic integrity: any academic dishonesty is strictly prohibited in this class, and, if caught, can result in F-grade and academic disciplinary actions.