CALIFORNIA INSTITUTE OF TECHNOLOGY

Control and Dynamical Systems
CDS 270: Robust, Optimal and Adaptive Control

Annenberg 106, Fridays, 10 am – noon.
Spring 2015

Instructor

Eugene Lavretsky, eugene.lavretsky@boeing.com
Office Hours: Fridays, by appointment

Grading

Letter or Pass/Fail.

Prerequisites

Basic understanding of linear systems theory and control methods, Ability to simulate dynamical systems in MATLAB.

Course Outline

The main goal of this course is to present a set of robust, optimal, and adaptive control concepts, their solutions, and theoretical challenges for dynamic systems with incomplete measurements and uncertainties. Industrial applications will be discussed. The course material will cover selected chapters from the course textbook [1]. Homework will be assigned once a week. Mid-term and Final exams will be given.

Grading

Attendance	5%
Homework	40%
Midterm	25%
Final	30%

Course Textbook:

1. E. Lavretsky, K.A. Wise, *Robust and Adaptive Control With Aerospace Applications*, Advanced Textbooks in Control and Signal Processing, Springer-Verlag, London, ISBN: 978-1-4471-4395-6 (Print), 978-1-4471-4396-3 (Online), 2013.

Supplementary Textbooks

1. H.K. Khalil, *Nonlinear Systems*, 3rd Edition, Prentice Hall, New Jersey, 2002.
2. B.L. Stevens, F.L. Lewis, *Aircraft Control and Simulation*, John Wiley & Sons, Inc., 1992.