ME 350/450: ADVANCED TOPICS IN CONTROLS
MULTIVARIABLE ROBUST CONTROL
SUMMARY

https://www.lehigh.edu/~eus204/teaching/ME450_MRC/ME450_MRC.html

Instructor: Eugenio Schuster
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Class Times	Tu/Th 10:45 AM - 12:00 PM
Location	Linderman Library 402
Course Description:	Multi-input and multi-output feedback control; robustness analysis of control systems; H-infinity feedback control; performance limitations in control systems; system model reduction
Textbook:	"Multivariable Feedback Control", by S. Skogestad and I. Postlethwaite Second Edition, John Wiley & Sons, 2005 (ISBN-13 978-0-470-01168-3)
Material Covered:	We will cover Chapters 1 to 9.
Prerequisites:	ME 343 (Classical Control) or equivalent course, or consent of instructor
Office Hours:	By appointment
Content:	1. Introduction [Chapter 1] 2. Classical feedback control [Chapter 2] 3. Performance limitations SISO [Chapter 5] 4. Uncertainty and robustness SISO [Chapter 7] 5. Elements of linear systems theory [Chapter 4] 6. Introduction to multivariable control [Chapter 3] 7. Performance limitations MIMO [Chapter 6] 8. Robust stability and performance MIMO [Chapter 8] 9. Controller design [Chapter 9]
Grading	Homework 50%, Exams 50%
Homeworks:	In addition to written exercises, Matlab assignments will be given to demonstrate the theory in the text. You can NOT work with others on homework (similar homework assignments will be given a grade of zero). Late homework will not be accepted. Homework should be neat, the pages should be stapled with one staple in the upper left corner, and the problems should be placed in order. Matlab codes must be provided.
Exams:	Exams will be open-book, open-notes, and take-home. No makeup quizzes or exams will be allowed. You can NOT work with others on the exams (similar homework assignments will be given a grade of zero).