

CALIFORNIA STATE UNIVERSITY, CHICO
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Course Outline: EECE 482 Control Systems Design (4 units, Fall)

Instructor: Dr. Adel A. Ghandakly OCNL 308

Catalog Description: (*Prerequisites: EECE 365*): Modeling, analysis and simulation of dynamic system performance. Control system design for continuous systems using both analog and digital controller design techniques.

Textbooks: Nise, *Control Systems Engineering*, 6th edition, Wiley, 2010.

Course Prerequisite by topics (EECE 365):

The Laplace Transform, Frequency Response, State Space modeling and analysis of linear systems, Discrete-time systems and the Z-transform, System Modeling, Transfer Functions and Stability, Computer simulation using MATLAB.

Course Objectives:

Understand and analyze control systems, and develop their performance specifications, Design controllers to meet specifications, Use MATLAB to simulate, analyze and aid the design of control systems.

Topics:

1. Introduction: Dynamic Systems Modeling and Control
2. Modeling in Time Domain
3. Time Response
4. Model Reduction
5. Stability
6. Steady State Errors
7. Root Locus Techniques
8. Design via Root Locus
9. State Space Design
10. Digital Control