

ECEN 4803 - Linear Control Systems

Fall 2026 Syllabus, Section 01, CRN 40734,

Credit hours: 3

Instructor

Ghassan Salim

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Public Instructor Information

Instructor Title: Lecturer Instructor Professional Qualifications:

PhD (ABD) West Virginia University

MSEE West Virginia University, 1994

BSEE - Wright State University, 1986

Registered Professional Engineer, West Virginia, 2000- present

Instructor Office Location: Moser Hall, 2057

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Course Description

4803. Linear Control Systems. System modeling, responses and performance measures. Stability analysis by root locus, Bode, and Nyquist plots. Computer-aided control system design. Compensator design. Three hours lecture per week. Prereq.: ECEN 2633, ECEN 3712, MATH 3705, MECH 2620. 4 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Automatic Control Systems	F. Golnaraghi & Benjamin Kuo	978-1-25-964383-5
Optional	Control System Engineering	Nise	978-1119474210

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Course Introduction Chapter 1	Introduction to Control Systems	MATLAB Assignment No.1
8/31	Ch2	Modeling of Dynamic Systems	Problems 2.1, 2.2, 2.4, 2.11, 2.14, 2.28, 2.29
9/7	Ch3 Note, Monday 9/7 is a legal holiday	Solution of Differential Equations of Dynamic Systems	3.1, 3.3, 3.5, 3.11 (a,b), 3.12 (a,b,c,d) MATLAB Assignment No.2
9/14	Ch4 Ch5	Block Diagrams Stability of Linear Control Systems	4.1, 4.2, 4.3 5.1, 5.3 (a,b,d), 5.8(a,c)
9/21	Exam 1 Exam -1 Review	Ch. 1 - Ch. 5	In Class exam -1 Project Proposal
9/28	Ch7	Time Domain Performance of Control Systems	7-1, 7-3, 7-19, 7.28
10/5	Ch8	State Space Analysis of Control Systems	MATLAB Assignment No.3
10/12	Ch9	Root Locus Analysis	MATLAB Assignment No.4, In Class Assignment on Root Locus
10/19	Exam 2 Ch11	Covers Ch 7-9 Design of Control Systems - Time domain	In class Exam In Class Assignment



10/26	Ch 11 - Continue	Time domain design of control systems	In Class assignment
11/2	Ch 10	Frequency Domain Analysis	In Class assignment
11/9	Xh 10- Continued Note: Nov. 11- Legal Holiday	Freuney domain analysis	In Class Assignment
11/16	Ch 10	Control Design - Frequency domain Approach	MATLAB Assignment No. 5
11/30	Exam 3 - Review Exam 3	Ch 10, 11	In Class Exam Project report and presentation
12/7	Final Exam on Dec 9	Final Exam 8:00 - 10:00	In Class Final

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