



ANKARA UNIVERSITY
Engineering Faculty
Department of Electrical and Electronics Engineering

Syllabus for
ELE 324 Feedback Control Systems

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Faculty	Engineering	Department	Electrical and Electronics Engineering
Course Code & Number	ELE 324	Course Title	Feedback Control Systems
Level of Course	BSc	Course Credit Hours / ECTS	(4+0+0) 4 / 5 ECTS
Time Schedule			

Text Book and Reference Books	<p><i>Text Book:</i> R.C. Dorf and R.H.Bishop, "Modern Control Systems" 12th and 13th Edition, Prentice Hall, 2001.</p> <p><i>Reference Books:</i> 1) K. Ogata, "Modern Control Engineering" 3rd Edition, Prentice Hall, 1997 2) G.F.Franklin, J.D. Powell, A.E.-Naeni, "Feedback Control of Dynamic Systems" Prentice Hall, 2002. 3) K. Ogata, "Modern Control Engineering" 5th Edition, Prentice Hall, 2010 4) L. Levine, "The Control Handbook", CRC Press, 2005. 5)R.D. Strum and D.E. Kirk, "Contemporary Linear Systems using Matlab" Brooks/Cole, 2000.</p>
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TENTATIVE COURSE OUTLINE				
Week	Day / Month	Topics	Textbook Reading	Assignments / Exams
1		Introduction to Control Systems: Control System Design and Examples	Chapter 1	Homework and/or in class Assignments
2		Mathematical Models of Systems: Laplace Transform	Chapter 2	Homework and/or in class Assignments
3		Mathematical Models of Systems: transfer Functions of Electrical and Mechanical Systems	Chapter 2	Homework and/or in class Assignments
4		Block Diagrams and Signal Flow Graphs	Chapter 2	Homework and/or in class Assignments
5		Performance of the Feedback Control Systems: Root Location and Transient Response	Chapter 5	Homework and/or in class Assignments
6		The Stability of Linear Feedback Systems: Routh-Hurwitz Stability Criteria	Chapter 6	Homework and/or in class Assignments
7		Root Locus Method	Chapter 7	
8		Midterm Week (Outline will be arranged based on exact date of the midterm)		
9		Root Locus Method: Design by using Root Locus	Chapter 7	Homework and/or in class Assignments
10		Root Locus Method: Design by using Root Locus	Chapter 7	Homework and/or in class Assignments
11		Bode Diagrams and Frequency Response Methods	Chapter 8	Homework and/or in class Assignments
12		Frequency Response Methods: Design Examples	Chapter 8	Homework and/or in class Assignments
13		Stability in Frequency Domain: Nyquist Criterion and Stability	Chapter 9	Homework and/or in class Assignments
14		Stability in frequency Domain: System Bandwith and Time Delayed Systems	Chapter 9	Homework and/or in class Assignments
15		Recitation*	Chapter 6-9	
FINAL EXAMS WEEK, (date and time to be announced later). *Recitation hours may be occupied to complete the planned curriculum				

***** GOOD LUCK *****