



Jordan University of Science and Technology
Faculty of Engineering
Electrical Engineering Department

EE440 Control Systems

Summer Semester 2019-2020

Course Catalog

3 Credit Hours. Transfer function; block diagrams; signal flow graph; mathematical modeling of physical systems; time-domain analysis and design of control systems; root locus techniques; frequency domain analysis and design of control systems; state-space analysis.

Text Book

Title	Modern Control Systems
Author(s)	R.C. Dorf & R.H. Bishop
Edition	11th Edition
Short Name	Ref#1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Feedback Control Systems	C. Phillips & R. Harbor	1st Edition	
Ref#3	Feedback Control of Dynamic Systems	Franklin , Powell & Emami-Naeini	1st Edition	
Ref#4	Modern Control Engineering	K. Ogata	2nd Edition	

Instructor

Name	Prof. Saleh Radaideh
Office Location	E1L3
Office Hours	
Email	srad@just.edu.jo

Class Schedule & Room
Section 2: Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30 Room: منصة الكترونية

Prerequisites		
Line Number	Course Name	Prerequisite Type
242601	EE260 Signal And Systems Analysis	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction To Control Systems	From Ref#1
Weeks 2, 3, 4	Mathematical Modeling of Systems	From Ref#1
Week 5	State Variable Methods	From Ref#1
Week 6	Feed Back Control System characteristics	From Ref#1
Weeks 7, 8	The Performance of Feed Back Control systems	From Ref#1
Week 9	The Stability of Linear Feed Back systems	From Ref#1
Weeks 10, 11	The Root Locus Method	From Ref#1
Week 12	Frequency Response Method	From Ref#1
Week 13	Stability in Frequency Response	From Ref#1
Weeks 14, 15, 16	Controller Design In time Domain.	From Ref#1

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
An understanding of open loop and closed loop control systems and their physical meaning. [10ABET1, 10ABET2]	20%	
A knowledge of constructing a mathematical model of physical system, via transfer function and state variable method. [10ABET1, 10ABET2]	20%	
The ability to analyze the system behavior and stability using mathematical models and evaluating the system performance, in time domain. [10ABET1, 10ABET2]	20%	
The understanding of analysis and design of systems in frequency domain. [2ABET1, 3ABET2]	5%	
A knowledge to implement controller design techniques to make the system behavior satisfy design objectives. [15ABET1, 20ABET2]	35%	

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
47	53					

Evaluation	
Assessment Tool	Weight
first	30%
second	30%
final	40%

Policy	
Assessment Tool	First exam according to the department schedule 30 % Second exam according to the department schedule 30 % Final exam according to the university final examination schedule 40 %

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