AL IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
COLLEGE OF ENGINEERING
Department of Mechanical Engineering

Course Information	
Course Code and Name:	ME 334 Automatic Control
Credit Hours**:**	**3 (**3 Lecture + 1 Tutorial)
Prerequisites:	ME 333 Mechanical Vibrations

Course Description
Theory and analysis of linear closed-loop control systems containing electronic, hydraulic, and mechanical components. Differential equations. Laplace transforms. Stability, Nyquist and Bode diagrams.

Textbook			
Title	Modern Control Engineering		
Authors	Katsuhiko Ogata		
Publisher	Prentice Hall	Year and Edition	2010, Fifth Edition

Course Contents
Introduction to feedback control of dynamic systems
Introduction to dynamic systems
Mathematical models of control systems and Laplace Transform
Mathematical models of control systems and block and signal flow diagrams
Exercises on block and signal flow diagrams
Transient and steady-state response analysis (Characteristics)
Transient and steady-state response analysis (Stability)
Transient and steady-state response analysis (Steady-state error)
Control systems analysis and design by root locus
PID controllers and modified PID controllers (Pole Placement Method)
PID controllers and modified PID controllers (Ziegler-Nichols method)
Control systems analysis and design by the frequency-response method

Academic Coordinator	**Signature**
Dr. Khalil Hajlaoui	

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