



MUTAH UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering



Course Syllabus

Course Code	Course Name	Credits	Contact Hours
0401548	Automatic Control Lab	1	2T

INSTRUCTOR/COORDINATOR

Name	Eng. Anwar Tarawneh
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Office Hours	12:30-2 Mon, Wed
Classroom/Time	14:00-16.00Tues

TEXTBOOK

Title	Control lab manual
Author/Year/Edition	Dr. Khaled Alawasa, 2020
Other Supplemental Materials	
Title	Modern control systems (12 th edition)
Author/Year/Edition	Richard C. Dorf, Robert H. Bishop, 2012

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

Open and closed loops control system; Servomechanism principles; the effect of PID on control systems; frequency response measurements; digital control system; analog computer, applications.

B. Pre-requisites (P) or Co-requisites (C)

Automatic Control (0401441) (P)

C. Course Type (Required or Elective)

Required

SPECIFIC GOALS

A. Course Learning Objectives (CLOs)

CLO1: Be familiar with different control systems types and applications [6].

CLO2: Design and evaluate system dynamic response. [6].

CLO3: Extract experimental results and analyze them efficiently [6].

CLO4: Work effectively in groups by sharing responsibilities and collaborating on findings [5].

B. Student Learning Outcomes (SOs) Addressed by the Course						
1	2	3	4	5	6	7
				√	√	

BRIEF LIST OF TOPICS TO BE COVERED		
List of Topics	No. of Weeks	Contact Hours
Experiment 1: Familiarization and calibration.	1	2
Experiment 2: Simple position control system.	2	4
Experiment 3: Simple speed control system.	2	4
Experiment 4: Time and frequency response of the first-order system.	2	4
Experiment 5: Time response of the second-order system.	2	4
Experiment 6: Disturbance rejection.	1	2
Experiment 7: Basic theory and experiments.	1	2
Experiment 8: Open-loop and closed-loop systems.	1	2
Experiment 9: Proportional, proportional- integrated control.	1	2
Experiment 10: PID controller.	1	2
<i>Total</i>	<i>14</i>	<i>28</i>

EVALUATION		
Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	20
Lab Reports	One week after being taken	40
Final Exam	According to the university calendar	40

ABET's Students Learning Outcomes (Criterion # 3)

Relationship to program outcomes	
ABET 1-7	Engineering Student Outcomes
1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3	an ability to communicate effectively with a range of audiences.
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5	√ an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6	√ an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.