Course Description Form

1. Course Name:
Digital control 2
2. Course Code:
CSE−C4302
3. Semester / Year:
2nd Semester
4. Description Preparation Date:
26/3/2024
5. Available Attendance Forms:
Personal
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Hazem Ibrahim Ali Email: Hazem.I.Ali@uotechnology.edu.iq

8. Course Objectives	
Course Objectives	It aims to provide the student with the knowledge of analyzing and designing digital control systems and their applications in the industrial field.

9. Teaching and Learning Strategies	
Strategy	1- Enable the student to know and understand the theoretical principles of digital control. 2- Enable the student to know the method of designing digital control systems. 3- Familiarize students with various control algorithms.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	A1	Modified Z- Transform	Theoretical Lectures	Written Exam and discussion
2	4	A2	Digital PID controller Design	Theoretical Lectures, oral discussion and tests	Written Exam and discussion
5	4	A2, A3	Response between	Theoretical	Written Exam

			sampling instants	Lecture and scientific reports	and discussion
10	4	A2, A3	Digital dead beat controller	Theoretical Lectures	Written Exam and discussion
12	4	A1	Time equivalent controllers	Theoretical Lectures	Written Exam and home works
13	4	A2, A3	Discrete state space approach	Theoretical Lectures	Written Exam and discussion
14	4	A2, A3	Discrete state feedback controller design	Theoretical Lectures	Written Exam and discussion
15	2	A2	Applications of digital control systems	Theoretical Lectures	Written Exam and discussion

11. Course Evaluation

20% documented exam
5% Quizes
5% reports and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Digital control system: Analysis and Design Author: Charles L. Phillips and H. Troy Nagle Publisher: Prentice-Hall, 1984
Recommended books and references (scientific journals, reports…)	1. Computer controlled systems: Theory and Design Author: Karl J. Astrom and Bjorn Wittenmark Publisher: Tom Robbins, 1997 2. Digital Control of Dynamic Systems Author: Gene F. Franklin, J. David Powell and Michael L. Workman Publisher: Addison-Wesley, 1998
Electronic References, Websites	