

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

It explains to the student the following: the importance of knowledge of the control mechanism, uses knowledge of the control mechanism, theories of control mechanism, the general rules for the process buttock control, methods of representation of the control systems, the transfer function, the planned block diagram of the elements of buttock control systems, properties and theories of Laplace transform, Laplace transform inverse solving equations differential using Laplace and so as to enable the students from the control of any department they need it to suit the jurisdiction of Mechatronics

1. Teaching Institution	Baghdad University / Al Khwarizmi College of engineering
2. University Department/Centre	Mechatronics Engineering Dept.
3. Course title/code	Fundamentals of Control Systems MCT318
4. Programme(s) to which it contributes	University Requirement
5. Modes of Attendance offered	Full time
6. Semester/Year	Semester
7. Number of hours tuition (total)	4 hours (2 theoretical/2 Prac.)
8. Date of production/revision of this specification	٢٠٢٤
9. Aims of the Course	
a. Teaching the students the basic principles of the control systems.	
b. Give them the correct procedures to design their engineering ideas.	
c. Rise their level of knowledge in this field.	

10. Learning Outcomes, Teaching ,Learning and Assessment Method

Knowledge and Understanding	-A A1. A2. A3. A4 A5
B. Subject-specific skills	B1. B3. B4.
Teaching and Learning Methods	
Power point lectures & solving exercises. control lab. Text books and solutions of chapters. Small group tutorials.	● ● ● ●
Assessment methods	
Closed book examinations. Class work Home works. Experimental reports.	● ● ● ●
C. Thinking Skills	C1. C2. C3. C4.
Teaching and Learning Methods	
Classroom lectures, assignments, examples, tutorials, and home works. Lab experiments & lab discussions.	● ●
Assessment methods	
Theoretical and experimental Quizzes. Written examination and lab reports.	● ●
D. General and Transferable Skills (other skills relevant to employability and personal development)	D1. D2. D3. D4.

Teaching and Learning Methods	
Library and other information resources.	●
Individual & group problem solving activity.	●
Assessment methods	
Examinations answers, class assignment, and home works.	●

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1,2	8		Introduction to control systems Mathematical background review concerning Laplace transforms and matrices		
3,4	8		Open-loop and closed-loop systems Block diagrams, electrical systems, mechanical systems		
5,6	8		Fluid flow systems, thermal systems Electro-mechanical systems, bio-medical systems		
7,8	8		Transfer function Block diagram reduction rules		
9,10	8		State space analysis Signal flow graph		
11,12	8		Time response analysis Step function input		
13,14,15	8		Ramp function input Sinusoidal function input		

12. Infrastructure

<p>Required reading:</p> <ul style="list-style-type: none"> · CORE TEXTS · COURSE MATERIALS · OTHER 	<p>Modern Control Engineering, Katsuhiko Ogata CONTROL SYSTEMS ENGINEERING, Norman S. Nise Control Engineering , Derek Atherton</p>
<p>Special requirements (include for example workshops, periodicals, IT software, websites)</p>	
<p>Community-based facilities (include for example, guest Lectures , internship , field studies)</p>	

13. Admissions	
Pre-requisites	
Minimum number of students	20
Maximum number of students	30