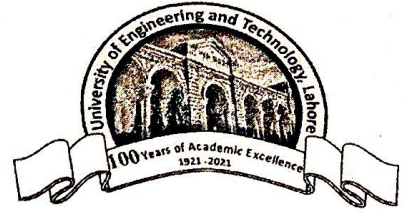


**UNIVERSITY OF ENGINEERING
AND TECHNOLOGY, LAHORE**
ACADEMIC BRANCH



Dated: 11.11.2025

NOTIFICATION

Subject: **APPROVAL OF REVISED CURRICULUM OF B.Sc.
MECHATRONICS AND CONTROL ENGINEERING AND B.Sc.
ROBOTICS & INTELLIGENT SYSTEMS FOR SESSION-2025
ONWARD**

No.Univ./Acad/M-75/Mech/2025/585. It is hereby notified for the information of all concerned that on the recommendations of the Board Faculty of Mechanical Engineering made in its meeting held on 23.10.2024, the Vice-Chancellor under authorization given by the Academic Council in its 237th meeting held on 15.07.2025 has been pleased to approve the revised curriculum of B.Sc. Mechatronics and Control Engineering and B.Sc. Robotics & Intelligent Systems for Session-2025 onward (copy attached).


(Ch. Abdul Hameed)

Deputy Registrar (Academic)
for Registrar

C.C. to: -

1. Dean, Faculty of Mechanical Engineering
2. Chairman, Mechatronics & Control Engineering Department, Main Campus
3. Chairman, Mechanical, Mechatronics and Manufacturing Engineering Department, Faisalabad Campus
4. Convener Admission Committee
5. Director Studies
6. Director, QEC
7. Director, ORIC
8. Controller of Examinations
9. Secretary to Vice Chancellor

Semester wise plan for B.Sc. Mechatronics and Control Engineering (Session 2025 Onwards)

	Course Code	Course Title	Credit Hours		Contact Hours		Pre-Requisites	Knowledge Area
			Theory	Practical	Theory	Practical		
1st Semester Courses								
1	MCT-121 & MCT-121L	Electric Circuits	3	1	3	3		Engineering Foundation
2	MCT-111 & MCT-111L	Engineering Graphics and Drawing	1	2	1	6		Engineering Foundation
3	ME-100L	Workshop Practice	0	1	0	3		Engineering Foundation
4	MA-113	Calculus and Analytic Geometry	3	0	3	0		Mathematics
5	IS-111	Pakistan Studies	2	0	2	0		Humanities
6	IS-109	Fehm-e-Quran - I / Social Ethics - I (For Non-Muslims)	0	1	3	0		Humanities
7	HU-111	Communication Skills	3	0	3	0		Humanities
		Total	12	5	7	12		
		Semester Credits	17		19			
2nd Semester Courses								
8	MCT-113 & MCT-113L	Manufacturing Processes	3	1	3	3		Inter-Disciplinary Engineering
9	MCT-117 & MCT-117L	Engineering Mechanics	3	1	3	3		Engineering Foundation
10	MCT-122 & MCT-122L	Electronic Devices and Circuits	3	1	3	3		Engineering Foundation
11	MCT-107 & MCT-107L	Application of Information and Communication Technologies	1	2	1	6		Computing
12	MA-225	Differential Equations and Transforms	3	0	3	0		Mathematics
		Total	13	5	13	15		
		Semester Credits	18		28			
3rd Semester Courses								
13	MCT-213 & MCT-213L	Mechanisms	2	1	2	3		Major Based Core (Breadth)
14	MCT-241 & MCT-241L	Digital Logic Design	3	1	3	3		Computing
15	MCT-245 & MCT-245L	Advance Computing	1	2	1	6		Computing
16	EE-204 & EE-204L	Electrical Machinery	2	1	2	3		Inter-Disciplinary Engineering
17	MA-129	Vector and Complex Analysis	3	0	3	0		Mathematics
18	IS-104	Islamic Studies/Ethics (For Non-Muslims)	2	0	2	0		Humanities
		Total	13	5	13	15		
		Semester Credits	18		28			
4th Semester Courses								
19	MCT-216 & MCT-216L	Machine Design and Elements	3	1	3	3		Major Based Core (Depth)
20	MCT-244 & MCT-244L	Signal Processing	2	1	2	3		Major Based Core (Breadth)
21	MCT-236 & MCT-236L	Embedded Systems-I	3	1	3	3		Major Based Core (Breadth)
22	MA-234	Linear Algebra	3	0	3	0		Mathematics
23	IS-203	Ideology and Constitution of Pakistan	2	0	2	0		Humanities
24	IS-209	Fehm-e-Quran - II/ Social Ethics-II (For Non-Muslims)	0	1	0	1		Humanities
		Total	13	4	13	9		
		Semester Credits	17		22			
5th Semester Courses								
25	MCT-361 & MCT-361L	Hydraulics and Pneumatics	2	1	2	3		Major Based Core (Breadth)
26	MCT-331 & MCT-331L	Modeling and Simulation	3	1	3	3	MA-225	Major Based Core (Breadth)
27	MCT-339 & MCT-339L	Embedded Systems-II	3	1	3	3	MCT-241 & MCT-241L	Major Based Core (Depth)
28	MCT-335 & MCT-335L	Instrumentation and Measurements	2	1	2	3		Major Based Core (Breadth)
29	MA-343	Applied Probability and Statistics	3	0	3	0		Mathematics
30	MGT-318	Entrepreneurship and Management	2	0	2	0		Management Sciences
		Total	15	4	15	12		
		Semester Credits	19		27			
6th Semester Course								
31	MCT-xxx	Elective I	2	1	2	3		Major Based Core (Depth)
32	MCT-333 & MCT-333L	Control Systems - I	3	1	3	3		Major Based Core (Breadth)
33	MCT-352 & MCT-352L	Robotics	3	1	3	3	MA-234	Major Based Core (Breadth)
34	MCT-343 & MCT-343L	Data Sciences and Analytics	3	1	3	3		Computing
35	MCT-307	Product Design	2	0	2	0		Management Sciences
36	MCT-309	Internship	0	0	0	0		Industrial Training (Summer)
		Total	13	4	13	12		
		Semester Credits	17		25			
7th Semester Courses								
37	MCT-xxx	Elective II	2	1	2	3		Major Based Core (Depth)
38	MCT-434 & MCT-434L	Industrial Automation	2	1	2	3		Major Based Core (Depth)
39	MCT-435	Control Systems - II	3	0	3	0		Major Based Core (Depth)
40	MGT-xxx	Social Science Elective	2	0	2	0		Humanities
41	HU-221	Technical Writing & Presentation Skills	3	0	3	0		Humanities
42	MCT-498	Final Project - I	0	3	0	9		Senior Design Project
		Total	12	5	12	15		
		Semester Credits	17		27			
8th Semester Courses								
43	MCT-xxx	Elective III	3	0	3	0		Major Based Core (Depth)
44	MGT-320	Project Management in Engineering	2	0	2	0		Management Sciences
45	MGT-110	Social Responsibility	2	0	2	0		Humanities
46	MCT-400L	Occupational Health and Safety	0	1	0	3		Inter-Disciplinary Engineering
47	MCT-499	Final Project - II	0	3	0	9	MCT-498	Senior Design Project
		Total	7	4	7	12		
		Semester Credits	11		19			
		Total	98	36	93	102		
		Total Credits	134		195			

List of Elective Subjects							
E1	MCT-416	Condition Monitoring	3	0	3	0	
E2	MCT-411	Mechanical Vibrations	3	0	3	0	
E3	MCT-421 & MCT-421L	Digital Signal Processing	2	1	2	3	MCT-244
E4	MCT-422 & MCT-422L	Power Electronics	2	1	2	3	MCT-122
E5	MCT-436	Digital Control Systems	3	0	3	0	MCT-333
E6	MCT-433 & MCT-433L	Estimation and Filtering	2	1	2	3	MCT-333
E7	MCT-452 & MCT-452L	Intelligent Systems	2	1	2	3	
E8	MCT-453 & MCT-453L	Machine Vision	2	1	2	3	
E9	MCT-454 & MCT-454L	Mobile Robotics	2	1	2	3	
E10	MCT-471	Wearable Robotics	3	0	3	0	
E11	MCT-456 & MCT-456L	Internet of Things	2	1	2	3	
E12	MCT-457 & MCT-457L	Biomedical Devices	2	1	2	3	
E13	MCT-472	Human Centered Robotics	3	0	3	0	
E14	MCT-473	Aerial Robotics	3	0	3	0	
E15	MCT-461 & MCT-461L	Smart Electric Vehicles	2	1	2	3	
E16	MCT-492	Special Topics in Mechatronics	3	0	3	0	

List of Social Science Elective Subjects							
SCE1	MGT-103	Sociology for Engineering	2	0	2	0	
SCE2	MGT-104	World Today	2	0	2	0	
SCE3	MGT-105	Introduction to Economics	2	0	2	0	
SCE4	MGT-106	Economy of Pakistan	2	0	2	0	
SCE5	MGT-107	Business and Society	2	0	2	0	

Semesterwise Plan for BSc Robotics & Intelligent Systems (Session 2025 Onwards)

Semester-1			
	Course Title	Credit Hours	
		Th	Lab
RIS-121	Electric Circuits	3	0
ME-121bL	Engineering Graphics and Drawing	0	1
PHY-118 & PHY-118L	Applied Physics	2	1
IS-109	Fehm-e-Quran - I / Social Ethics - I (For Non-Muslims)	0	1
MA-113	Calculus and Analytic Geometry	3	0
IS-111	Pakistan Studies	2	0
HU-111	Communication Skills	3	0
	Total	13	3
	Semester Credits	16	
Semester-2			
MA-225	Differential Equations and Transforms	3	0
RIS-107 & RIS-107L	Application of Information and Communication Technologies	1	2
ME-125	Engineering Mechanics	3	0
EE-216 & EE-216L	Electronic Devices and Circuits	3	1
CY-101 & CY-101L	Applied Chemistry	2	1
	Total	12	4
	Semester Credits	16	
Semester-3			
ME-226(24) & ME-226(24)	Mechanisms	3	1
EE-272 & EE-272L	Digital Systems	3	1
CSC103 & CSC-103L	Object Oriented Programming	3	1
RIS-231 & RIS-231L	Introduction to Robotics	2	1
MA-129	Vector and Complex Analysis	3	0
	Total	14	4
	Semester Credits	18	
Semester-4			
ME-227(24) & ME-227(24)	Machine Design and Elements for Robots	3	1
MA-154	Quantitative Reasoning-I	3	0
RIS-232 & RIS-232L	Embedded Systems	3	1
MA-234	Linear Algebra	3	0
IS-203	Ideology and Constitution of Pakistan	2	0
	Total	14	2
	Semester Credits	16	
Semester-5			
CSC-202 & CSC-202L	Artificial Intelligence	2	1
RIS-331 & RIS-331L	Robot Operating System	3	1
RIS-321	Sensors and Actuators	2	1
MA-343	Applied Probability and Statistics	3	0
IS-104	Islamic Studies	2	0
	Total	12	3
	Semester Credits	15	
Semester-6			
RIS-333	Robot Kinematics and Dynamics	2	1
EE-220	Signals and Systems	3	0

RIS-351 & RIS-351L	Machine Vision	3	1
DS-375	Big Data Analytics	3	0
IS-209	Fehm-e-Quran - II / Social Ethics - II (For Non-Muslims)	0	1
HU-221	Technical Writing & Presentation Skills	3	0
RIS-301	Internship	0	0
	Total	14	3
	Semester Credits	17	
Semester-7			
RIS-xxx	Elective I	3/2	0/1
MGT-xxx	Social Science Elective	2	0
RIS-431&RIS-431L	Robot Motion Planning and Control	3	1
CSC-352	Introduction to Deep Learning	3	0
RIS-498	Final Project- I	0	2
	Total	11	3
	Semester Credits	14	
Semester-8			
RIS-xxx	Elective II	3/2	0/1
RIS-432&RIS-432L	Mobile Robotics	2	1
MGT-110	Social Responsibility	2	0
RIS-499	Final Project- II	0	2
MGT-318	Entrepreneurship and Management	2	0
	Total	9	3
	Semester Credits	12	
	Total	99	25
	Total Credits	124	

Elective Courses		Credit Hours	
		Th	Lab
RIS-441	Extended Reality	3/2	0/1
RIS-452	Swarm and Collective Intelligence	3/2	0/1
RIS-433	Wearable Robotics	3/2	0/1
RIS-440	Internet of Things	3/2	0/1
BME-301	Biomedical Instrumentation	3/2	0/1
RIS-434	Human Centered Robotics	3/2	0/1
RIS-435	Aerial Robotics	3/2	0/1
AM-424	Hybrid Vehicles	3/2	0/1
RIS-436	Medical Robotics Systems	3/2	0/1
RIS-437	Humanoids	3/2	0/1
RIS-438	Human Robot Interactions	3/2	0/1
RIS-402	Industry 5.0	3/2	0/1
List of Social Science Elective Subjects		Credit Hours	
MGT-103	Sociology for Engineering	2	0
MGT-104	World Today	2	0
MGT-105	Introduction to Economics	2	0
MGT-106	Economy of Pakistan	2	0
MGT-107	Business and Society	2	0

The students of pre-medical background shall enroll in Basic Mathematics course as per University Policy