MECHATRONICS ROBOTICS ENGINEERING, B.A.SC (CLASS OF 2026)

First Year 2022-2023

Code	Title	Units
MREN 103	Mechatronics and Robotics Design I	4.00
MREN 178	Data Structures and Algorithms	4.00
APSC 101	Engineering Design & Practice	3.50
APSC 102	Experimentation	2.00
APSC 111	Physics I	3.30
APSC 112	Physics II	3.30
APSC 131	Chemistry of Engineering Materials and Processes	3.30
APSC 143	Introduction to Computer Programming for Engineers	3.30
APSC 162	Engineering Graphics	2.50
APSC 171	Calculus I	3.30
APSC 172	Calculus II	3.30
APSC 174	Introduction To Linear Algebra	3.30
APSC 182	Applied Engineering Mechanics	1.70
APSC 199	English Proficiency for Engineers	0.20
Total Units		**41.00**

Second Year 2023-2024

Code	Title	Units
MREN 203	Mechatronics and Robotics Design II	4.00
MREN 223	Signals and Systems	4.00
MREN 230	Thermodynamics and Heat Transfer	3.75
MREN 241	Fluid Mechanics and Fluid Power	3.75
ELEC 221	Electric Circuits	4.25
ELEC 252	Electronics I	4.25
ELEC 271	Digital Systems	4.00
ELEC 274	Computer Architecture	4.00
MECH 221	Solid Mechanics I	3.50
MTHE 228	Complex Analysis	3.50
MECH 229	Kinematics and Dynamics	3.50
MTHE 237	Differential Equations for Engineering Science	3.50
Total Units		**46.00**

Third Year 2024-2025

Code	Title	Units
APSC 221	Economic And Business Practice	3.00
MREN 303	Mechatronics and Robotics Design III	4.00
MREN 318	Sensors and Electric Actuators	4.25
MREN 320	Introduction to Industrial Automation	3.50
MREN 348	Introduction to Robotics	4.00
ELEC 326	Probability & Random Processes	3.50
ELEC 371	Microprocessor Interfacing and Embedded Systems	4.00
ELEC 372	Numerical Methods and Optimization	3.50
ELEC 353	Electronics II	4.25
ELEC 373	Computer Networks	3.50
MECH 350	Automatic Control	3.50
Plus choose one (1) Complementary Studies course		3.00
Total Units		**44.00**

Fourth Year 2025-2026

Code	Title	Units
MREN 403	Mechatronics and Robotics Design IV	8.00
MREN 410	Intelligent Machines and Autonomous Systems	3.50
Two Complementary Studies courses		
Three Free Technical Electives (Any FEAS course at the 200, 300 or 400 level (timetable permitting), or permission of the program)		
Five Primary Technical Electives (recommended Concentrations below):		
Automation		
ELEC 431	Power Electronics	
ELEC 436	Electric Machines and Control	
ELEC 474	Machine Vision	
MECH 423	Introduction To Microsystems	
MECH 455	Computer Integrated Manufacturing	
Robotics		
ELEC 436	Electric Machines and Control	
ELEC 444	Modeling and Computer Control of Mechatronic Systems	
ELEC 472	Artificial Intelligence	
ELEC 474	Machine Vision	
MECH 455	Computer Integrated Manufacturing	
Biomedical		
ELEC 408	Biomedical Signal and Image Processing	
MECH 393	Biomechanical Product Developm	
MECH 394	Frontiers in Biomechanical Engineering	
MECH 495	Ergonomics And Design	

MECH 496	Musculoskeletal Biomechanics

Intelligent Systems

ELEC 421	Digital Signal Processing: Filters and System Design
ELEC 425	Machine Learning and Deep Learning
ELEC 472	Artificial Intelligence
ELEC 474	Machine Vision
CMPE 325	Human-Computer Interaction