JOY UNIVERSITY

semper paratus

School of Computational Intelligence

Department of Engineering & Technology

B.Tech (All Engineering Programmes) – I Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Mathematics for Engineers- I	3	1	0	4	4
2.		Applied Physics for Engineers	3	0	0	3	3
3		Communication Skills in English	2	0	0	2	2
4.		Fundamentals of Computer Programming	3	0	0	3	3
5.		Mechanics for Engineers	3	0	0	3	3
6.		Foundation of Electrical, Electronics & Instrumentation Engineering	3	0	0	3	3
7.		Engineering Graphics & Visualization	2	0	3	5	3
7.		Fundamentals of Computing Lab	0	0	3	3	2
9.		Engineering Physics Laboratory	0	0	2	2	1
		TOTAL	**19**	**1**	**8**	**28**	**24**

B.Tech (Mechatronics Programmes) – II Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Mathematics for Engineers- II	3	1	0	4	4
2.		Environmental Science	3	0	0	3	3
3.		Introduction to Artificial Intelligence	3	0	0	3	3
4.		Thermodynamics & Its Engineering Application	3	0	0	3	3
5.		Modern Biology for Engineers	2	0	0	2	2
6.		Economics for Engineers	3	0	0	3	3
7.		Electrical, Electronics & Instrumentation Engineering Laboratory	0	0	3	3	2
8.		Practical Approach of Engineering Realization	0	0	3	3	2
9.		Artificial Intelligence Laboratory	0	0	2	2	1
10.		Entrepreneurship and Innovation	1	0	2*	3*	2
		TOTAL	**18**	**1**	**9**	**28**	**25**

****Alternate Week.***

B.Tech (Mechatronics Programmes) – III Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Engineering Materials and its Application	3	0	0	3	3
2.		Numerical Techniques and Statistics	3	0	0	3	3
3.		Fabrication and Machining Processes	4	0	0	4	4
4.		Fluid Mechanics & Thermal Engineering	3	0	0	3	3
5.		Electrical Actuators and Drives	3	0	0	3	3
6.		Stress Analysis & Machine Design	3	1	0	4	4
7.		Manufacturing Processes & Solid Mechanics Laboratory	0	0	3	3	2
8.		Thermal and Fluid Laboratory	0	0	3	3	2
9.		Electrical Drives & Actuators Laboratory	0	0	2	2	1
		TOTAL	**19**	**1**	**8**	**28**	**25**

B.Tech (Mechatronics Programmes) – IV Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Computer Aided Design & Analysis	3	0	0	3	3
2.		Kinematics and Dynamics of Mechanisms	3	0	0	3	3
3.		Data Structure and Algorithm	3	0	0	3	3
4.		Elements of Digital Electronics & Microprocessors	3	0	0	3	3
5.		Measurements and Instrumentation	2	0	0	2	2
6.		Digital Signals, System and Its Processing	2	0	0	2	2
7.		Measurements and Instrumentation Laboratory	0	0	2	2	1
8.		Computer Aided Design & Analysis Laboratory	0	0	2	2	1
9.		Dynamics and Measurements Laboratory	0	0	2	2	1
10.		Data Structure and Algorithm Practice	0	0	2	2	1
		TOTAL	**16**	**0**	**8**	**24**	**20**

B.Tech (Mechatronics Programmes) – V Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Microcontroller & Embedded Systems for Mechatronics	3	0	0	3	3
2.		Intelligent Systems & Automatic Control (IOT)	3	0	0	3	3
3.		Sensors and Transducers in Engineering	3	0	0	3	3
4.		Power Electronics and Drives	3	0	0	3	3
5.		PLC & Circuit Design	4	0	0	4	4
6.		Elective-I	3	0	0	3	3
7.		Power Electronics and Drives Laboratory	0	0	3	3	2
8.		Sensors and Control Systems Laboratory	0	0	2	2	1
9.		Embedded Systems & Microcontroller Laboratory	0	0	2	2	1
10.		PLC & Circuit Design Laboratory	0	0	3	3	2
		TOTAL	**19**	**0**	**10**	**29**	**25**

Elective: I

Quality Control and Metrology
Digital Manufacturing Systems
Advanced Control Systems
Operating System & Application
Engineering System Modeling & Simulation
Design for Manufacture & Assembly
Digital Image Processing

B.Tech (Mechatronics Programmes) – VI Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Robotics, Automation & CNC Machines	3	1	0	4	4
2.		Mechatronics System Design & Integration	3	0	0	3	3
3.		Machine Learning & Image Processing for Mechatronics System	3	0	0	3	3
4.		Elective- II	3	0	0	3	3
5.		Elective- III	3	0	0	3	3
6.		Mechatronics System Design & Integration Laboratory	0	0	2	2	1
7.		Machine Learning & Image Processing Laboratory	0	0	3	3	2
8.		Internship	0	0	0	0	1
		TOTAL	**15**	**1**	**5**	**21**	**20**

Elective: II

Micro Electro Mechanical System
Electric and Hybrid Vehicles
Advanced Computer Integrated Systems
Vision Systems and Intelligence
Additive Manufacturing
Science & Technology of Welding and Joining
Rapid Manufacturing
Mechanical Vibrations and Noise Control
Autonomous Mobile Robots
Principle of Underwater Robotics
Principle of Cloud Robotics

Elective- III

Monitoring of Rotating Elements
Cyber Security for Automation Systems
Advanced Control Theory
Modern Driver Assistance System
Smart and Intelligent Vehicles Mobility
Development in Drone Technology
Artificial Intelligence in Robotics & Automation
Motion Control Technologies
Advanced Image Processing

B.Tech (Mechatronics Programmes) – VII Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Artificial Neural Network & Fuzzy System	3	0	0	3	3
2.		Industrial Engineering & Operation Research	3	0	0	3	3
3.		Elective-IV	3	0	0	3	3
4.		Seminar	0	0	3	3	1
5.		Project- I	0	0	12	12	6
		TOTAL	**9**	**0**	**15**	**24**	**16**

Elective-IV

Human Computer Interaction
Principles of Software Design
Computer Vision and Deep Learning
UAV System Design
Optimization Techniques in Engineering
Intelligent Machines
Radar and Remote Sensing
Computer Vision and Augmented Reality
Theory & Application of Humanoid Robotics
Condition Monitoring and Fault Diagnostics

B.Tech (Mechatronics Programmes) – VIII Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Professional Ethics and Constitution of India	3	0	0	3	3
2.		Industrial Engineering and Management	3	0	0	3	3
3.		Elective- V	3	0	0	3	3
4.		Project-2	0	0	16	16	8
		TOTAL	**9**	**0**	**16**	**25**	**17**

Elective- V

Fundamentals of Accounting
Introductory course for Taxation
Marketing of Social and Digital Media
Organizational Behaviour
Intellectual Property Rights
Entrepreneurship Development
Fundamentals of Cognitive Science
Overview of Cyber Security

Credit Summary

Semesters	Credits
Semester- I	24
Semester- II	25
Semester- III	25
Semester- IV	20
Semester- V	25
Semester- VI	20
Semester- VII	16
Semester VIII	17
Total	172