



JOY UNIVERSITY
semper paratus

School of Computational Intelligence

Department of Engineering & Technology

B.Sc. (Robotics Programmes) – I Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Mathematics - 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.		Environmental Science	3	0	0	3	3
6.		Foundation of Microprocessor, Electronics & Instrumentation	4	0	0	4	4
7.		Electronics & Instrumentation Laboratory	0	0	3	3	2
8.		Fundamentals of Computing Lab	0	0	3	3	2
9.		Engineering Physics Laboratory	0	0	2	2	1
		TOTAL	18	1	8	27	24

B.Sc. (Robotics Programmes) – II Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Mathematics - II	3	1	0	4	4
2.		Fabrication Processes & CNC Machines	3	0	0	3	3
3.		Digital Signals, System and Its Processing	3	0	0	3	3
4.		Introduction to Artificial Intelligence	3	0	0	3	3
5.		Economics for Engineers	3	0	0	3	3
6.		Practical Approach of Engineering Realization	0	0	3	3	2
7.		Computer Aided Design & Solid Modelling Laboratory	1	0	2	3	2
8.		Artificial Intelligence Laboratory	0	0	2	2	1
9.		Entrepreneurship and Innovation	1	0	2*	3*	2
		TOTAL	17	1	8	26	23

*Alternate Week.

B.Sc. (Robotics Programmes) – III Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Introduction to Robotics	3	0	0	3	3
2.		Computer Architecture	3	0	0	3	3
3.		Numerical Method & Optimization Techniques	3	0	0	3	3
4.		Database Management System	3	0	0	3	3
5.		Machine Design	3	0	0	3	3
6.		Control Systems	3	0	0	3	3
7.		Control Systems Laboratory	0	0	2	2	1
8.		Computer Architecture Laboratory	0	0	2	2	1
9.		Database Management System Laboratory	0	0	2	2	1
		TOTAL	18	0	6	24	21

B.Sc. (Robotics Programmes) – IV Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Kinematics and Dynamics for Robot	3	1	0	4	4
2.		Computer Networks	3	0	0	3	3
3.		Microcontroller & Embedded Systems	3	0	0	3	3
4.		Motion Planning & Control Technologies	3	0	0	3	3
5.		Professional Ethics	3	0	0	3	3
6.		Kinematic & Dynamics Laboratory for Robot	0	0	3	3	2
7.		Microcontroller & Embedded Systems Laboratory	0	0	3	3	2
8.		Computer Networks Laboratory	0	0	2	2	1
		TOTAL	15	1	8	24	21

B.Sc. (Robotics Programmes) – V Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		IoT & Machine Learning for Robotics	3	0	0	3	3
2.		Vision Systems and Intelligence	3	0	0	3	3
3.		Elective-I	3	0	0	3	3
4.		Machine Learning & IoT Practical	0	0	3	3	2
5.		Robotic Programming, Vision and Intelligence Laboratory	0	0	2	2	1
6.		Project-I	0	0	12	12	6
7.		Industrial Internship	0	0	0	0	2
		TOTAL	9	0	17	26	20

Elective: I

Cloud Computing
 Principle of Cloud Robotics
 Development in Drone Technology
 Computer Vision and Deep Learning
 Mobile Robotics
 Underwater Robotics

B.Sc. (Robotics Programmes) – VI Semester

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.		Data Structure for Robotics and Automation	3	0	0	3	3
2.		Elective-II	3	0	0	3	3
3.		Elective-III	3	0	0	3	3
4.		Data Structure Practice	0	0	3	3	2
5.		Project-II	3	0	16	16	8
TOTAL			12	0	9	28	19

Elective: II

Advanced Artificial Intelligence & IoT in Robotics
 Parallel Computing for Artificial Intelligence & Machine Learning
 Advanced Image Processing
 Human Computer Interaction
 Theory & Application of Humanoid Robotics

Elective- III

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	23
Semester- III	21
Semester- IV	21
Semester- V	20
Semester- VI	19
Total	128