School of Engineering
Department of Mechanical Engineering
B. Tech in Mechatronics Engineering

GALGOTIAS UNIVERSITY

Program Structure: B. Tech Mechatronics

		Semester-1						
Sl. No.	**Course Code**	**Subject Name**	**Course Type**	**L**	**T**	**P**		**C**
1	G2UA120B	Basic Electrical and Electronics Engineering	B	3	0	1		4
2	L1UB120T	YOGA	T	2	0	0		0
3	G3UB101B	Engineering design and prototyping	B	3	0	1		4
4	C1UC122B	Engineering Mathematics-I	B	3	0	1		4
5	E2UC102C	Programming for problem solving	C	2	0	2		4
6	C1UB129T	Chemical and biological materials	T	3	0	0		3
				16	**0**	**5**		**19**
		Semester-2						
Sl. No.	**Course Code**	**Subject Name**	**Course Type**	**L**	**T**	**P**	**S**	**C**
1	C1UD124B	Semiconductor and Optoelectronics devices	B	3	0	1		4
2	G3UB201T	Engineering Mechanics	T	3	1	0		4
3	O1UA104B	Communication skill for engineers	B	2	0	1		3
4	C1UB120T	Environment Impact analysis	T	0	0	0		0
5	C1UC222B	Engineering Mathematics II	B	3	0	1		4
6	New Course	Introduction to AI&ML	C	3	0	2		5
7	G3UB201B	Engineering workshop	C	1	0	2	1	3
				15	**1**	**7**	**1**	**23**

		Semester 3						
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	G3UB301T	Applied Engineering Mechanics	T	2	1	0		3
2	New Course	Introduction to Mechatronics	T	2	1	0		3
3	New Course	Additive Manufacturing	B	3	0	2		4
4	G3UB304B	Material Science	B	2	0	2		3
5	C1UC321T	Functions of Complex Variables and Transforms	T	3	0	0		3
6	GIUA306B	Design thinking-I	T	1	0	1		0
	K1UC320B	Communication competency and aptitude building-1	B	1	0	1		2
7	G3UB305B	Machine Drawing with Solid Works	C	2	0	2	1	4
		Total		**16**	**2**	**8**	**1**	**22**

Semester 4								
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	G3UB401B	Mechanics of Material	B	2	1	2		4
2	New Course	Fluid Mechanics/Hydraulics	B	2	1	2		5
3	New Course	Theory of Machines	B	3	0	2		4
4	G2UA403T	Sensors and transducers	T	3	0	0		3
5	O1UA421B	Communication competency and Aptitude Building 2	B	1	0	1		2
6	New Course	Data Structure Algorithms	B	3	0	2		4
7	C1UC424B	Numerical methods	B	2	0	1		3
8	G3UA601B	Design Thinking-II	B	1	0	1		0
		Total		**16**	**2**	**7**		**25**
Semester 5								
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	New Course	Digital Signal Processing	B	3	1	2		5
2	New Course	Digital Electronics	C	3	0	2		4
3	New Course	Microprocessors and Microcontrollers	T	3	0	2		4

4	New Course	Control Systems	T	2	1	0		3
5	GIUA306B	Design thinking-I	B	1	0	1		0
6	G3UB506T	CAM, and Automation	T	2	0	0		2
7	New Course	Embedded Systems	T	3	0	0		3
8	K1UC523B	Communication Competency and Aptitude Building -III	I	1	0	2		2
		Total		**18**	**2**	**9**		**23**
Semester 6								
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	New Course	Power Electronics & Drives	B	3	1	2		5
2	New Course	Digital Manufacturing Systems	T	3	0	0		3
3	New Course	Digital Image Processing	T	3	0	0		3
4	G3UB603B	Robotics and Automation (minor-5)	B	3	0	1		4
5	New Course	Optimization Techniques	T	3	0	0		3
6	New Course	Advanced Control Systems	B	3	0	2		4
7	G3UA601B	Design Thinking-II	B	1	0	1		0
8	O1UA602B	Soft Skill - 6 (Campus to Corporate)	B	1	0	2		2
		Total		**20**	**1**	**8**		**24**
Semester 7								
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	New Course	Industrial Automation	B	3	0	2		4
2	Will be provided by ERP	Elective 1	T	3	0	0		3
3	Will be provided by ERP	Elective 2	T	3	0	0		3
4	Will be provided by ERP	Elective 3	T	3	0	0		3
9	G1UA705R	Summer Internship		0	0	0		2

10	G3UC704R	Capstone Project- Phase I/Industrial Internship Domain 5		-	-	-		3
		Total		**12**	**1**	**16**		**18**
			Semester 8					
Sl. No.	**Course Code**	**Course Title**	**Course Type**	**L**	**T**	**P**		**C**
1	Will be provided by ERP	Capstone Project- Phase II		-	-	-		9
		Total						**9**
Total Program Credit						**163**		

Elective Course Baskets

		Minor Elective Courses - Streamwise						
Sl No		**Mechatronics**		**L**	**T**	**P**		**C**
1	Will be provided by ERP	Sensors and Actuators	T	3	0	0		3
2	New Course	Signal Systems & Signal Processing	T	3	0	0		3
3	Will be provided by ERP	Design of Mechatronics System	T	3	0	0		3
4	New Course	Introduction to bio mechatronics	T	3	0	0		3
5	Will be provided by ERP	Computer Integrated Manufacturing	T	3	0	0		3
6	Will be provided by ERP	Robotics: Analysis and Systems	T	3	0	0		3
7	Will be provided by ERP	Drives and Control system for Automation	T	3	0	0		3
8	New Course	Industrial Automation and Control	T	3	0	0		3
9	New Course	Artificial Intelligence for Mechatronics Systems	T	3	0	0		3

11	Will be provided by ERP	Design of Mechanisms and Manipulators	T	3	0	0		3
12	Will be provided by ERP	Mechanical Vibrations	T	3	0	0		3
13	New Course	Autonomous Vehicles	T	3	0	0		3
14	Will be provided by ERP	Flexible Manufacturing Systems	T	3	0	0		3
15	New Course	Automotive Electronics	T	3	0	0		3
16	New Course	Machine Vision	T	3	0	0		3
17	New Course	Micro-Electro-Mechanical Systems	T	3	0	0		3
18	New Course	Modelling and Simulation of Mechatronics Systems	T	3	0	0		3

Sl No		**Smart Manufacturing & 3D Machining**		**L**	**T**	**P**		**C**
1	Will be provided by ERP	Introduction to product design & digital drawing	T	3	0	0		3
2	Will be provided by ERP	Fracture Mechanics	T	3	0	0		3
3	Will be provided by ERP	Advanced Welding Technology	T	3	0	0		3
4	Will be provided by ERP	Solid modelling & additive manufacturing	T	3	0	0		3
5	Will be provided by ERP	Sensors and Controls	T	3	0	0		3
6	Will be provided by ERP	CNC machine tools	T	3	0	0		3
7	Will be provided by ERP	Entrepreneurship and Management Functions	T	3	0	0		3
8	Will be provided by ERP	Mechanical Metallurgy	T	3	0	0		3

9	Will be provided by ERP	Optimization Techniques and Applications	T	3	0	0		3
10	Will be provided by ERP	Plastic Technology	T	3	0	0		3