



SIR PADAMPAT SINGHANIA UNIVERSITY

Udaipur

SCHOOL OF ENGINEERING

Course Curriculum of 4-Year B.Tech. Programme

in

Mechanical Engineering (Specialization in Automation and Robotics)

(Batch- 2020-24)

Credit Structure

B.Tech. Core		B.Tech Elective	
Category	Credits	Category	Credits
Departmental Core Subjects	149	Departmental Electives	16
Basic Sciences Subjects	38	Open Electives	6
Skill Enhancement Subjects	05		
Total	192	Total	22
		Grand Total	214

Distribution of Total Credits & Contact Hours in all Semesters

S. No.	Semester Number	Credits/Semester	Contact hours/week
1	I	28	34
2	II	28	35
3	III	27	33
4	IV	25	28
5	V	27	32
6	VI	25	30
7	VII	27	29
8	VIII	27	35
Total		214	--

Course Structure: B.Tech.2020-24

Semester - I

S. No.	Course Code	Course Title	L	T	P	Credit(s)
1	CE-1001	Engineering Mechanics	5	0	1	6
2	EC-1001	Basic Electrical Engineering	4	0	1	5
3	ME-1001	Basic Workshop Practice – I	0	0	2	2
4	MA-1001	Applied Mathematics – I	4	1	0	5
5	PH-1001	Applied Physics – I	3	0	1	4
6	CH-1001	Applied Chemistry – I	3	0	1	4
7	CH-1002	Environmental Studies	2	0	0	2
Total Credits						28
8	EP-1999	Endeavour Project (Beyond the Syllabus)				
Total Contact hours/week						34

Semester - II

S. No.	Course Code	Course Title	L	T	P	Credit(s)
1	CS-1001	Structured Programming Approach	4	0	1	5
2	ME-1002	Engineering Drawing Lab	3	0	2	5
3	ME-1003	Basic Workshop Practice – II	0	0	2	2
4	MA-1002	Applied Mathematics – II	4	1	0	5
5	PH-1002	Applied Physics – II	3	0	1	4
6	CH-1003	Applied Chemistry – II	3	0	1	4
7	HU-1003	Communication Skills	2	1	0	3
Total Credits						28
8	EP-1999	Endeavour Project (Beyond the Syllabus)				3
Total Contact hours/week						35

Semester - III

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-2001	Thermodynamics	4	0	0	4
2	RE-2002	Strength of Materials	4	0	0	4
3	RE-2003	Strength of Material	0	0	1	1
4	RE-2004	Production Process	4	0	0	4
5	RE-2005	Machine Shop Practice	0	0	2	2
6	RE-2006	Computer Aided Machine Drawing	0	0	3	3
7	RE-2007	Power Electronics & Motors	3	0	0	3
8	CE-2008	Power Electronics & Motors	0	0	1	1
9	MA-2002	Advanced Engineering Mathematics – I	4	1	0	5
Total Credits						27
10	EP-2999	Endeavour Project (Beyond the Syllabus)				
Total Contact hours/week						33

Semester - IV

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-2020	Fluid Mechanics	4	0	0	4
2	RE-2021	Fluid Mechanics Lab	0	0	1	1
3	RE-2022	Applied Thermal Engineering	4	0	0	4
4	RE-2023	Kinematics of Machinery	4	0	0	4
5	RE-2024	Kinematics of Machinery Lab	0	0	1	1
6	RE-2025	Data Base and Information Retrieval	0	0	2	2
7	RE-2026	Industrial Electronics	3	0	0	3
8	RE-2027	Industrial Electronics Lab	0	0	1	1
9	MA-2006	Advance Engineering Mathematics – II	4	1	0	5
Total Credits						25
11	EP-2999	Endeavour Project (Beyond the Syllabus)				3
Total Contact hours/week						28

Semester - V

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-3001	Robotics Engineering and Application	4	0	0	4
2	RE-3002	Digital Image Processing and Machine Vision	4	0	0	4
3	RE-3003	Mechanical Measurements and Control	4	0	0	4
4	RE-3304	Mechanical Measurements and Control Lab	0	0	1	1
5	RE-3005	Dynamics of Machinery	4	0	0	4
6	RE-3006	Dynamics of Machinery Lab	0	0	1	1
7	RE-3007	Materials Technology Lab	0	0	1	1
8	RE-3008	Manufacturing Sciences Lab	0	0	1	1
9	RE-31XX	Department Level Optional Course – I	4	0	0	4
10	RE-3009	Computer Programming Practice	0	0	1	1
11	HU-3001	Business Communication & Ethics	1	1	0	2
Total Credits						27
10	EP-3999	Endeavour Project (Beyond the Syllabus)				
Total Contact hours/week						32

Semester - VI

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-3020	Mechatronics	4	0	0	4
2	RE-3021	Mechatronics Lab	0	0	1	1
3	RE-3023	Machine Design – I	4	0	0	4
4	RE-3024	Machine Design - I Lab	0	0	1	1
5	RE-3025	Industrial Automation	4	0	0	4
6	RE-3026	Automation Lab	0	0	1	1
7	RE-3027	Artificial Intelligence and Expert System	4	0	0	4
8	RE-3028	Finite Element Analysis Lab	0	0	1	1
9	RE-3029	Robot Programming Lab	0	0	1	1
10	RT-31XX	Department Level Optional Course –II	4	0	0	4
Total Credits						25
11	EP-3999	Endeavour Project (Beyond the Syllabus)				3
Total Contact hours/week						30

Semester - VII

S. No.	Course Code	Course Title	L	T	P	Credit(s)
1.	RE-4001	Design of Transmission Systems	4	0	0	4
2.	RE-4002	PLC and Data Acquisition System	4	0	0	4
3.	RE-4003	Microprocessor Based System Design	4	0	0	4
4.	RE-4004	Embedded System Laboratory	0	0	1	1
5.	RE-4005	CAD/CAM/CAE	0	0	1	1
6.	RT-41XX	Department Level Optional Course –III	4	0	0	4
7.	RT-4100	Minor Project	0	0	3	3
8.	RT-4200	Summer Internship	-	-	-	3
9.	XX-XXXX	University Level Optional Course – I	3	0	0	3
Total Credits						27
10	EP-4999	Endeavour Project (Beyond the Syllabus)				
Total Contact hours/week						29

Semester - VIII

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-4020	Flexible Manufacture and System	4	0	0	4
2	RE-4021	Flexible Manufacture and System Lab	0	0	1	1
3	RE-4022	Electronics & Instrumentation	4	0	0	4
4	RE-4023	Electronics & Instrumentation Lab	0	0	1	1
5	RE-4024	Industrial Engineering and Management	4	0	0	4
6	RT-4300	Major Project	0	0	6	6
7	RT-41XX	Department Level Optional Course – IV	4	0	0	4
8	XX-XXXX	University Level Optional Course – II	3	0	0	3
Total Credits						27
9	EP-4999	Endeavour Project (Beyond the Syllabus)				3
Total Contact hours/week						35

List of Departmental Elective(s) - I

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-3101	Materials Design	4	0	0	4
2	RE-3102	Microprocessors & Microcontrollers	4	0	0	4

List of Departmental Elective(s) - II

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-3103	Neural Network and FUZZY System	4	0	0	4
2	RE-3104	Fluid Power Control	4	0	0	4

List of Departmental Elective(s) - III

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-4101	Sensors and Signal	4	0	0	4
2	RE-4102	Programming Industrial Automation Systems	4	0	0	4

List of Departmental Elective(s) - IV

S. No	Course Code	Course Title	L	T	P	Credit(s)
1	RE-4103	Rapid Prototyping	4	0	0	4
2	RE-4104	Digital Signal Processors and its Applications	4	0	0	4

List of University Level Optional Course(s) - I

S. No.	Course Code	Course Title	L	T	P	Credit
1	CE-4151	Disaster Management & Mitigation Measures	3	0	0	3
2	CS-4151	Management Information System	3	0	0	3
3	CS-4152	Cyber Security & Laws	3	0	0	3
4	EC-4151	Design of Experiments	3	0	0	3
5	EC-4152	Energy Audit & Management	3	0	0	3
6	EC-4153	Development Engineering	3	0	0	3
7	ME-4151	Product Lifecycle Management	3	0	0	3
8	ME-4152	Reliability Engineering	3	0	0	3
9	ME-4153	Operation Research	3	0	0	3

List of University Level Optional Course(s) - II

S. No.	Course Code	Course Title	L	T	P	Credit
1	BM-4151	Finance Management	3	0	0	3
2	BM-4152	Entrepreneurship Development & Management	3	0	0	3
3	BM-4153	Human Resource Management	3	0	0	3
4	BM-4154	Professional Ethics & CSR	3	0	0	3
5	CE-4152	Environment Management	3	0	0	3
6	CS-4153	Research Methodology	3	0	0	3
7	CS-4154	Digital Business Management	3	0	0	3
8	EC-4154	IPR & Patenting	3	0	0	3
9	ME-4154	Project Management	3	0	0	3

Detailed Syllabus is Under Construction

