

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Mechatronics Engineering (20)**  
**BE 1st To 8th Semester Exam Scheme & Subject Code**

**EVALUATION SCHEME**

University Exam (Theory) (E)		University Exam (Practical) (E)		Continuous Evaluation Process(M)		Practical (I)	
MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
70	23	X	50% of X	20	8	10	4
				30	12	X	50% of X

**NOTE :**

X = Marks of the Particular Subject.

Continuous Evaluation(M) 20/8 and Practical (I) 10/4 scheme apply up to April 2009

Continuous Evaluation(M) 30/12 and Practical X/ 50% of X scheme apply from April 2009 onward.

University Exam (Practical) (E) Component is applicable only in 7th & 8th Semester.

**1st Year**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
110001	Chemistry	3	0	2	5	70	—	30	50	150	20
110002	Communication Skills	1	0	2	3	70	—	30	50	150	20
110003	Computer Programming & Utilization (Revised)	2	0	4	6	70	—	30	50	150	20
110004	Elements of Civil Engineering (Revised)	4	0	2	6	70	—	30	50	150	20
110005	Elements of Electrical Engineering	4	0	2	6	70	—	30	50	150	20
110006	Elements of Mechanical Engineering	4	0	2	6	70	—	30	50	150	20
110007	Environmental Studies	3	0	0	3	70	—	30	50	150	20
110008 OR 110014	Maths-I (entry year 2008-10 having backlog)OR Calculus (entry year 2011-12)	3	2	0	5	70	—	30	50	150	20

110009 OR 110015	Maths-II (entry year 2008-10 having backlog) OR Vector Calculus and Linear Algebra (entry year 2011-12)	3	2	0	5	70	—	30	50	150	20
110010	Mechanics of Solids (Revised)	3	0	2	5	70	—	30	50	150	20
110011	Physics	3	0	2	5	70	—	30	50	150	20
110012	Workshop	0	0	4	4	0	—	0	100	100	20
110013	Engineering Graphics	2	0	4	6	70	—	30	50	150	20
	<b>TOTAL</b>	<b>35</b>	<b>4</b>	<b>26</b>	<b>65</b>						

### Semester III

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
130001/ 130002	Mathematics-3 / Advanced Engineering Mathematics (New)	3	2	0	5	70	—	30	50	150	20
131904	Material Science and Metallurgy	4	0	2	6	70	—	30	50	150	20
132001	Industrial Drafting	2	0	2	4	70	—	30	50	150	20
131101	Basic Electronics	4	0	2	6	70	—	30	50	150	20
130701	Digital Logic Design	4	0	2	6	70	—	30	50	150	20
132002	Simulation and Design Tools	0	0	3	3	0	—	0	100	100	20
	<b>TOTAL</b>	<b>17</b>	<b>2</b>	<b>11</b>	<b>30</b>						

### Semester IV

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
140001	Mathematics-4	3	2	0	5	70	—	30	50	150	20
140002	Management-1	2	0	0	2	70	—	30	50	150	20
141701	Control Theory	4	0	2	6	70	—	30	50	150	20
141903	Engineering Thermodynamics	4	1	0	5	70	—	30	50	150	20
142001	Kinematics And Dynamics Of Machines	4	0	2	6	70	—	30	50	150	20
142002	Institute Elective-1(Basic Mechatronics)	4	0	2	6	70	—	30	50	150	20
	<b>TOTAL</b>	<b>21</b>	<b>3</b>	<b>6</b>	<b>30</b>						

**Semester-V**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
150001	Management - II	2	0	0	2	70	—	30	50	150	20
152001	Electro Mechanical Energy Conversion	3	0	2	5	70	—	30	50	150	20
152002	Manufacturing Technology - I	4	0	2	6	70	—	30	50	150	20
152003	Fluid Mechanics & Machines	4	0	2	6	70	—	30	50	150	20
152004	Object Oriented Programming in c++	3	0	2	5	70	—	30	50	150	20
152005	Quantitative Techniques in Management (Institute Elective - II)	4	2	0	6	70	—	30	50	150	20
	<b>TOTAL</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>30</b>						

**Semester VI**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
162001	Design of Mechanisms - I	4	0	2	6	70	—	30	50	150	20
162002	Micro Processors & Micro Controllers	4	0	2	6	70	—	30	50	150	20
162003	Control of Electric Drives	4	0	2	6	70	—	30	50	150	20
162004	Hydraulic and Pneumatic Systems	4	0	2	6	70	—	30	50	150	20
162005	Electromechanical Measurements & Instruments.	4	0	2	6	70	—	30	50	150	20
	<b>TOTAL</b>	<b>20</b>	<b>0</b>	<b>10</b>	<b>30</b>						

**Semester VII**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
172001	Microcontrollers and Embedded Systems	3	0	2	5	70	30	30	20	150	20
172002	Automated Manufacturing - I	3	0	2	5	70	30	30	20	150	20
172003	Manufacturing Technology - II	3	0	2	5	70	30	30	20	150	20
172004	Production Optimization Techniques	3	2	0	5	70	30	30	20	150	20
172005	Robotics (Department Elective - I)	4	0	2	6	70	30	30	20	150	20
172006	Computer Aided Design for Mechatronics (Department Elective - I)	4	0	2	6	70	30	30	20	150	20
172007	Modern Control Systems (Department Elective - I)	4	0	2	6	70	30	30	20	150	20
170001	Project - I	0	0	4	4	0	100	0	50	150	20
	<b>TOTAL</b>	<b>16</b>	<b>2</b>	<b>12</b>	<b>30</b>						

**Semester VIII**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	University Exam (Theory) (E)	University Exam (Practical) (E)	Continuous Evaluation Process (M)	Practical (I)	Total Marks	Branch Code
		Theory	Tutorial	Practical							
182001	Programmable Logic Controllers	3	0	2	5	70	30	30	20	150	20
182002	Automated Manufacturing II	3	0	2	5	70	30	30	20	150	20
182003	Quality Assurance and Reliability	3	0	0	3	70	0	30	50	150	20
182004	Design of Mechanisms II	3	0	0	3	70	0	30	50	150	20
182005	Project II	0	0	8	8	0	100	0	50	150	20
182006	Machine Vision (Department Elective - II)	4	0	2	6	70	30	30	20	150	20
182007	Theory of Mechanisms(Department Elective - II)	4	0	2	6	70	30	30	20	150	20
182008	MEMS & Nano Technology (Department Elective - II)	4	0	2	6	70	30	30	20	150	20
	<b>TOTAL</b>	<b>16</b>	<b>0</b>	<b>14</b>	<b>30</b>						