

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Mechanical Engineering (19)**  
**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         | 19          |
| 110002              | Communication Skills   | 1                      | 0        | 2         | 3       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110003              | Computer Programming & Utilization (Revised)                                   | 2                      | 0        | 4         | 6       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110004              | Elements of Civil Engineering (Revised)  | 4                      | 0        | 2         | 6       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110005              | Elements of Electrical Engineering   | 4                      | 0        | 2         | 6       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110006              | Elements of Mechanical Engineering   | 4                      | 0        | 2         | 6       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110007              | Environmental Studies  | 3                      | 0        | 0         | 3       | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 110008 OR<br>110014 | Maths-I (entry year 2008-10 having backlog)OR<br>Calculus (entry year 2011-12) | 3                      | 2        | 0         | 5       | 70                           | —                               | 30                                | 50            | 150         | 19          |

|                     |   |           |          |           |           |    |   |    |     |     |    |
|---------------------|---|-----------|----------|-----------|-----------|----|---|----|-----|-----|----|
| 110009 OR<br>110015 | Maths-II (entry year 2008-10 having backlog) OR<br>Vector Calculus and Linear Algebra (entry year<br>2011-12) | 3         | 2        | 0         | 5         | 70 | — | 30 | 50  | 150 | 19 |
| 110010              | Mechanics of Solids (Revised)   | 3         | 0        | 2         | 5         | 70 | — | 30 | 50  | 150 | 19 |
| 110011              | Physics   | 3         | 0        | 2         | 5         | 70 | — | 30 | 50  | 150 | 19 |
| 110012              | Workshop  | 0         | 0        | 4         | 4         | 0  | — | 0  | 100 | 100 | 19 |
| 110013              | Engineering Graphics  | 2         | 0        | 4         | 6         | 70 | — | 30 | 50  | 150 | 19 |
| <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<br>Exam<br>(Theory)<br>(E) | University<br>Exam<br>(Practical)<br>(E) | Continuous<br>Evaluation<br>Process<br>(M) | Practical<br>(I) | Total<br>Marks | Branch<br>Code |
|-------------------|---|------------------------|----------|-----------|-----------|---------------------------------------|--|--|------------------|----------------|----------------|
|                   |   | Theory                 | Tutorial | Practical |           |                                       |  |  |                  |                |                |
| 130001/<br>130002 | Mathematics-3 / Advanced Engineering<br>Mathematics (New) | 3                      | 2        | 0         | 5         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 131901            | Electrical Machines and Electronics                       | 3                      | 1        | 0         | 4         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 131902            | Machine Design & Industrial Drafting                      | 4                      | 0        | 2         | 6         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 131904            | Material Science and Metallurgy                           | 4                      | 0        | 2         | 6         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 131903            | Manufacturing Process-1                                   | 4                      | 0        | 2         | 6         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 130101            | Fluid Mechanics   | 3                      | 0        | 2         | 5         | 70                                    | —  | 30   | 50               | 150            | 19             |
| <b>TOTAL</b>      |   | <b>21</b>              | <b>3</b> | <b>8</b>  | <b>32</b> |                                       |  |  |                  |                |                |

### Semester IV

| Subject Code | Subject Name   | Teaching Scheme(Hours) |          |           | Credits   | University<br>Exam<br>(Theory)<br>(E) | University<br>Exam<br>(Practical)<br>(E) | Continuous<br>Evaluation<br>Process<br>(M) | Practical<br>(I) | Total<br>Marks | Branch<br>Code |
|--------------|--|------------------------|----------|-----------|-----------|---------------------------------------|--|--|------------------|----------------|----------------|
|              |  | Theory                 | Tutorial | Practical |           |                                       |  |  |                  |                |                |
| 140001       | Mathematics-4  | 3                      | 2        | 0         | 5         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 140002       | Management-1   | 2                      | 0        | 0         | 2         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 141901       | Mechanical Measurement & Metrology                         | 4                      | 0        | 2         | 6         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 141902       | Kinematics Of Machines                                     | 3                      | 1        | 0         | 4         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 141903       | Engineering Thermodynamics                                 | 4                      | 1        | 0         | 5         | 70                                    | —  | 30   | 50               | 150            | 19             |
| 141904       | Institute Elective-1(Non – Conventional Energy<br>Sources) | 4                      | 0        | 2         | 6         | 70                                    | —  | 30   | 50               | 150            | 19             |
| <b>TOTAL</b> |  | <b>20</b>              | <b>4</b> | <b>4</b>  | <b>28</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         | 19          |
| 151901       | Manufacturing Processes - II                             | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 151902       | Theory of Machines                                       | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 151903       | Fluid Power Engineering                                  | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 151904       | Power Plant Engineering                                  | 3                      | 0        | 0         | 3         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 151905       | Machine Design-I   | 4                      | 0        | 2         | 6         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 151906       | Conventional Power Engineering (Institute Elective - II) | 4                      | 0        | 2         | 6         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| <b>TOTAL</b> |  | <b>22</b>              | <b>0</b> | <b>10</b> | <b>32</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 |           |                              |                                 |                                   |               |             |             |
| 161901       | Dynamics of Machinery       | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161902       | Internal Combustion Engines | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161903       | Computer Aided Design       | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161904       | Alternate Energy Sources    | 3                      | 0        | 0         | 3         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161905       | Control Engineering         | 3                      | 0        | 0         | 3         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161906       | Heat and Mass Transfer      | 3                      | 0        | 2         | 5         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| 161907       | Industrial Engineering      | 3                      | 0        | 0         | 3         | 70                           | —                               | 30                                | 50            | 150         | 19          |
| <b>TOTAL</b> |                             | <b>21</b>              | <b>0</b> | <b>8</b>  | <b>29</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 |           |                              |                                 |                                   |               |             |             |
| 171901       | Operation Research  | 4                      | 2        | 0         | 6         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171902       | Automobile Engineering  | 3                      | 0        | 2         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171903       | Computer Integrated Manufacturing                             | 3                      | 0        | 2         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171904       | Product Design and Value Engineering                          | 3                      | 2        | 0         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171905       | Industrial Tribology (Department Elective - I)                | 3                      | 2        | 0         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171906       | Quality and Reliability Engineering (Department Elective - I) | 3                      | 2        | 0         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171907       | Energy Conservation and Management(Department Elective - I)   | 3                      | 2        | 0         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 171908       | Software Engineering (Department Elective - I)                | 3                      | 2        | 0         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 170001       | Project - I   | 0                      | 0        | 4         | 4         | 0                            | 100                             | 0                                 | 50            | 150         | 19          |
|              | <b>TOTAL</b>  | <b>16</b>              | <b>6</b> | <b>8</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 |           |                              |                                 |                                   |               |             |             |
| 181901       | Refrigeration And Air-conditioning                                   | 3                      | 0        | 2         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181902       | Machine Design II  | 3                      | 1        | 0         | 4         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181903       | Production Technology  | 3                      | 0        | 2         | 5         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181904       | Thermal Engineering  | 3                      | 0        | 0         | 3         | 70                           | 0                               | 30                                | 50            | 150         | 19          |
| 181905       | Industrial Safety & Maintenance Engineering (Department Elective II) | 3                      | 1        | 0         | 4         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181906       | Gas Dynamics(Department Elective II)                                 | 3                      | 1        | 0         | 4         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181907       | Automobile Body Engineering(Department Elective II)                  | 3                      | 1        | 0         | 4         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181908       | Machine Tool Design(Department Elective II)                          | 3                      | 1        | 0         | 4         | 70                           | 30                              | 30                                | 20            | 150         | 19          |
| 181909       | Project II   | 0                      | 0        | 8         | 8         | 0                            | 100                             | 0                                 | 50            | 150         | 19          |
|              | <b>TOTAL</b>   | <b>15</b>              | <b>2</b> | <b>12</b> | <b>29</b> |                              |                                 |                                   |               |             |             |