

**Indian Institute of Information Technology, Surat**  
**Curriculum: B.Tech. (ECE) Electronics and Communication Engineering**

**Semester-1**

| Sr. No | Course                                  | Code   | Credit    | Teaching Scheme |          |           | Examination Scheme |           |            | Total      |
|--------|---|--------|-----------|-----------------|----------|-----------|--------------------|-----------|------------|------------|
|        |   |        |           | L               | T        | P         | L                  | T         | P          |            |
| 1      | Fundamentals of Computers & Programming | CS 101 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 2      | English & Communication Skills          | AL 102 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 3      | Engineering Physics                     | AS 103 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 4      | Electrical Networks                     | EE 104 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 5      | Engineering Mathematics                 | AS 105 | 4         | 3               | 1        | 0         | 100                | 25        | 0          | 125        |
| 6      | ICT Workshop - I                        | EC 106 | 2         | 0               | 0        | 4         | 0                  | 0         | 100        | 100        |
|        | <b>Total</b>                            |        | <b>22</b> | <b>15</b>       | <b>1</b> | <b>12</b> | <b>500</b>         | <b>25</b> | <b>300</b> | <b>825</b> |
|        | <b>Total Contact Hours per Week</b>     |        |           | <b>28</b>       |          |           |                    |           |            |            |

**Semester - 2**

| Sr. No | Course                              | Code   | Credit    | Teaching Scheme |          |          | Examination Scheme |           |            | Total      |
|--------|-------------------------------------|--------|-----------|-----------------|----------|----------|--------------------|-----------|------------|------------|
|        |                                     |        |           | L               | T        | P        | L                  | T         | P          |            |
| 1      | Data Structure and Algorithm        | CS 201 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 2      | Electronic Devices & Circuits       | EC 202 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 3      | Engineering Mechanics               | AE 203 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 4      | Digital Design                      | EC 204 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 5      | Discrete Mathematics                | AS 205 | 4         | 3               | 1        | 0        | 100                | 25        | 0          | 125        |
| 6      | Signals and Systems                 | EC 206 | 4         | 3               | 1        | 0        | 100                | 25        | 0          | 125        |
|        | <b>Total</b>                        |        | <b>24</b> | <b>18</b>       | <b>2</b> | <b>8</b> | <b>600</b>         | <b>50</b> | <b>200</b> | <b>850</b> |
|        | <b>Total Contact Hours per Week</b> |        |           | <b>28</b>       |          |          |                    |           |            |            |

**Semester-3**

| Sr. No | Course                               | Code   | Credit    | Teaching Scheme |          |           | Examination Scheme |           |            | Total      |
|--------|--------------------------------------|--------|-----------|-----------------|----------|-----------|--------------------|-----------|------------|------------|
|        |                                      |        |           | L               | T        | P         | L                  | T         | P          |            |
| 1      | Computer Architecture & Organisation | CS 301 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 2      | Microprocessor & Interfacing         | EC 302 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 3      | Communication Engineering            | EC 303 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 4      | Electronic Circuits                  | EC 304 | 4         | 3               | 0        | 2         | 100                | 0         | 50         | 150        |
| 5      | Probability & Statistical Analysis   | AS 305 | 4         | 3               | 1        | 0         | 100                | 25        | 0          | 125        |
| 6      | ICT Workshop - II                    | CS 306 | 2         | 0               | 0        | 4         | 0                  | 0         | 100        | 100        |
|        | <b>Total</b>                         |        | <b>22</b> | <b>15</b>       | <b>1</b> | <b>12</b> | <b>500</b>         | <b>25</b> | <b>300</b> | <b>825</b> |
|        | <b>Total Contact Hours per Week</b>  |        |           | <b>28</b>       |          |           |                    |           |            |            |

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**Semester-4**

| Sr. No | Course                       | Code   | Credit | Teaching Scheme |   |    | Examination Scheme |   |     | Total |
|--------|------------------------------|--------|--------|-----------------|---|----|--------------------|---|-----|-------|
|        |                              |        |        | L               | T | P  | L                  | T | P   |       |
| 1      | Operating System             | CS 401 | 4      | 3               | 0 | 2  | 100                | 0 | 50  | 150   |
| 2      | Computer Networks            | CS 402 | 4      | 3               | 0 | 2  | 100                | 0 | 50  | 150   |
| 3      | Analog Circuits              | EC 403 | 4      | 3               | 0 | 2  | 100                | 0 | 50  | 150   |
| 4      | Digital Communication        | EC 404 | 4      | 3               | 0 | 2  | 100                | 0 | 50  | 150   |
| 5      | Microcontrollers             | EC 405 | 4      | 3               | 0 | 2  | 100                | 0 | 50  | 150   |
| 6      | Electromagnetics             | EC 406 | 3      | 3               | 0 | 0  | 100                | 0 | 0   | 100   |
|        | Total                        |        | 23     | 18              | 0 | 10 | 600                | 0 | 250 | 850   |
|        | Total Contact Hours per Week |        |        | 28              |   |    |                    |   |     |       |

**Semester-5**

| Sr. No | Course                          | Code   | Credit | Teaching Scheme |   |   | Examination Scheme |   |     | Total |
|--------|---------------------------------|--------|--------|-----------------|---|---|--------------------|---|-----|-------|
|        |                                 |        |        | L               | T | P | L                  | T | P   |       |
| 1      | Control Systems                 | EE 501 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 2      | Digital Integrated Circuits     | EC 502 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 3      | Digital Signal Processing       | EC 503 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 4      | Economics & Business Management | AE 504 | 3      | 3               | 0 | 0 | 100                | 0 | 0   | 100   |
| 5      | Elective 1                      |        | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 6      | Elective 2                      |        | 3      | 3               | 0 | 0 | 100                | 0 | 0   | 100   |
|        | Total                           |        | 22     | 18              | 0 | 8 | 600                | 0 | 200 | 800   |
|        | Total Contact Hours per Week    |        |        | 26              |   |   |                    |   |     |       |

**Semester-6**

| Sr. No | Course                           | Code   | Credit | Teaching Scheme |   |   | Examination Scheme |   |     | Total |
|--------|----------------------------------|--------|--------|-----------------|---|---|--------------------|---|-----|-------|
|        |                                  |        |        | L               | T | P | L                  | T | P   |       |
| 1      | Introduction to Machine Learning | CS 601 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 2      | Digital VLSI Design              | EC 602 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 3      | Web Engineering                  | CS 603 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 4      | Embedded Systems                 | EC 604 | 4      | 3               | 0 | 2 | 100                | 0 | 50  | 150   |
| 5      | Elective 3                       |        | 3      | 3               | 0 | 0 | 100                | 0 | 0   | 100   |
| 6      | Elective 4                       |        | 3      | 3               | 0 | 0 | 100                | 0 | 0   | 100   |
|        | Total                            |        | 22     | 18              | 0 | 8 | 600                | 0 | 200 | 800   |
|        | Total Contact Hours per Week     |        |        | 26              |   |   |                    |   |     |       |

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| <b>Electives</b>               |   |  |                                |  |
|--------------------------------|---|--|--------------------------------|--|
| <b>5<sup>th</sup> Semester</b> |   |  | <b>6<sup>th</sup> Semester</b> |  |
| <b>E-1</b>                     | <ul style="list-style-type: none"> <li>• Hardware Description Languages (EC 511)</li> <li>• Numerical Methods using Python (CS 511)</li> <li>• Probabilistic Graphical Model (CS 512)</li> </ul>  |  | <b>E-3</b>                     | <ul style="list-style-type: none"> <li>• Mathematical Optimization (CS 631)</li> <li>• Cloud Computing &amp; Big Data Infrastructure (CS 632)</li> <li>• Introduction to Game Design (CS 633)</li> </ul> |
| <b>E-2</b>                     | <ul style="list-style-type: none"> <li>• Sensors &amp; Instrumentation (EC 521)</li> <li>• Fuzzy &amp; Neural Networks (CS 521)</li> <li>• Human Computer Interface (CS 522)</li> <li>• Object Oriented Programming (CS 524)</li> </ul> |  | <b>E-4</b>                     | <ul style="list-style-type: none"> <li>• Information Theory &amp; Coding (EC 641)</li> <li>• MEMS (EC 642)</li> <li>• Augmented &amp; Virtual Reality (CS 641)</li> </ul>                                |

**Semester - 7**

| Sr. No | Course                              | Code   | Credit    | Teaching Scheme |          |          | Examination Scheme |           |            | Total      |
|--------|-------------------------------------|--------|-----------|-----------------|----------|----------|--------------------|-----------|------------|------------|
|        |                                     |        |           | L               | T        | P        | L                  | T         | P          |            |
| 1      | Artificial Intelligence             | CS 701 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 2      | Internet of Things                  | EC 702 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 3      | Image Processing & Computer Vision  | EC 703 | 4         | 3               | 0        | 2        | 100                | 0         | 50         | 150        |
| 4      | Innovation & Entrepreneurship       | AE 704 | 4         | 3               | 1        | 0        | 100                | 25        | 0          | 125        |
| 5      | Elective 5                          |        | 3         | 3               | 0        | 0        | 100                | 0         | 0          | 100        |
| 6      | Elective 6                          |        | 3         | 3               | 0        | 0        | 100                | 0         | 0          | 100        |
|        | <b>Total</b>                        |        | <b>22</b> | <b>18</b>       | <b>1</b> | <b>6</b> | <b>600</b>         | <b>25</b> | <b>150</b> | <b>775</b> |
|        | <b>Total Contact Hours per Week</b> |        |           | <b>25</b>       |          |          |                    |           |            |            |

**Semester- 8**

| Sr. No | Course                              | Code   | Credit | Teaching Scheme |   |   | Examination Scheme |   |   | Total |
|--------|-------------------------------------|--------|--------|-----------------|---|---|--------------------|---|---|-------|
|        |                                     |        |        | L               | T | P | L                  | T | P |       |
| 1      | B.Tech. Project                     | EC 801 | 24     | 0               | 0 | - | 0                  | 0 | - | -     |
|        | <b>Total</b>                        |        |        |                 |   |   |                    |   |   |       |
|        | <b>Total Contact Hours per Week</b> |        |        |                 |   |   |                    |   |   |       |

| <b>Electives</b>               |   |  |            |   |
|--------------------------------|---|--|------------|---|
| <b>7<sup>th</sup> Semester</b> |   |  |            |   |
| <b>E-5</b>                     | <ul style="list-style-type: none"> <li>• Block-Chain and Ledger (CS 751)</li> <li>• Wireless Communication (EC 751)</li> <li>• Analog VLSI Design (EC 752)</li> </ul> |  | <b>E-6</b> | <ul style="list-style-type: none"> <li>• Computer Ethics &amp; Public Policy (CS 761)</li> <li>• Web 2.0 (CS 762)</li> <li>• VLSI Testing &amp; Verification (EC 761)</li> <li>• Electronic System Design (EC 762)</li> </ul> |