

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 | 2 | 1 | 2 | 50 | 25 | 50 | 125 |
| 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 |
| | Total | | 22 | 14 | 2 | 12 | 450 | 50 | 300 | 800 |
| | Total Contact Hours per Week | | | 28 | | | | | | |

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 Logic 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 |
| | Total | | 24 | 18 | 2 | 8 | 600 | 50 | 200 | 850 |
| | Total Contact Hours per Week | | | 28 | | | | | | |

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 206 | 2 | 0 | 0 | 4 | 0 | 0 | 100 | 100 |
| | Total | | 22 | 15 | 1 | 12 | 500 | 25 | 300 | 825 |
| | Total Contact Hours per Week | | | 28 | | | | | | |

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

Semester - 7

| Sr. No | Course | Code | Credit | Teaching Scheme | | | Examination Scheme | | | Total |
|--------|----------------------------------|--------|--------|-----------------|---|----|--------------------|---|-----|-------|
| | | | | L | T | P | L | T | P | |
| 1 | Image Processing | EC 701 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 2 | Analog VLSI Design | EC 702 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 3 | Fiber Optic Communication | EC 703 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 4 | Elective 5 | | 3 | 3 | 0 | 0 | 100 | 0 | 0 | 100 |
| 5 | Project Preliminaries | EC 705 | 2 | 0 | 0 | 4 | 0 | 0 | 100 | 100 |
| 6 | Technical Writing & Presentation | EC 706 | 3 | 2 | 0 | 2 | 100 | 0 | 50 | 150 |
| | Total | | 20 | 14 | 0 | 12 | 500 | 0 | 300 | 800 |
| | Total Contact Hours per Week | | | 26 | | | | | | |

Semester - 8

| Sr. No | Course | Code | Credit | Teaching Scheme | | | Examination Scheme | | | Total |
|--------|------------------------------|--------|--------|-----------------|---|----|--------------------|---|-----|-------|
| | | | | L | T | P | L | T | P | |
| 1 | Artificial Intelligence | CS 801 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 2 | Electronic System Design | EC 802 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 3 | RF & Microwave Communication | EC 803 | 4 | 3 | 0 | 2 | 100 | 0 | 50 | 150 |
| 4 | Project | EC 804 | 6 | 0 | 0 | 12 | 0 | 0 | 300 | 300 |
| 5 | Elective 6 | | 3 | 3 | 0 | 0 | 100 | 0 | 0 | 100 |
| 6 | Elective 7 | | 3 | 3 | 0 | 0 | 100 | 0 | 0 | 100 |
| | Total | | 24 | 15 | 0 | 18 | 500 | 0 | 450 | 950 |
| | Total Contact Hours per Week | | | 33 | | | | | | |

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| Electives | | | |
|--------------------------------|---|--------------------------------|---|
| 7th Semester | | 8th Semester | |
| E-5 | <ul style="list-style-type: none"> • Processor Architecture (EC 751) • Digital VLSI Subsystem Design (EC 752) • Network Security, Cyber Crime & Forensic (CS 751) • Evolutionary Computation (CS 752) | E-6 | <ul style="list-style-type: none"> • Speech Processing (EC 861) • Robotics (EC 862) • Convex Optimization (CS 861) • Building Large Scale Enterprise Solution and Project Management (CS 803) |
| | | E-7 | <ul style="list-style-type: none"> • Computer Vision (EC 871) • Analog VLSI Subsystem Design (EC 872) • Quantum Computing (CS 871) • Hardware Accelerator for Advanced Computing (CS 872) • IoT Architecture & Sensor Network (CS 873) |