



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: DIGITAL ELECTRONICS (201)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES  | BT Level     |
|--------|--|--------------|
| C201.1 | Understand the fundamentals of semiconductor devices and their characteristics                         | 2-Understand |
| C201.2 | Analyze and design basic analog circuits using diodes, transistors, and amplifiers                     | 5-Evaluate   |
| C201.3 | Apply Boolean algebra and logic simplification techniques to design digital circuits                   | 3-Apply      |
| C201.4 | Design combinational and sequential logic circuits for real-time applications                          | 5-Evaluate   |
| C201.5 | Demonstrate awareness of electronic system applications and communicate technical concepts effectively | 3-Apply      |

#### CO-PO MAPPING

| CO             | PO1      | PO2        | PO3      | PO4         | PO5        | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12     | PSO1       | PSO2     | PSO3       |
|----------------|----------|------------|----------|-------------|------------|-----|-----|-----|-----|------|------|----------|------------|----------|------------|
| C201.1         | 3        | 2          | 3        | 3           | 2          |     |     |     |     |      |      | 2        |            | 3        | 2          |
| C201.2         | 3        | 3          | 3        |             |            |     |     |     |     |      |      | 2        |            | 3        | 3          |
| C201.3         | 3        | 3          |          | 3           | 2          |     |     |     |     |      |      | 2        |            | 3        | 2          |
| C201.4         | 3        | 3          | 3        | 3           | 3          |     |     |     |     |      |      | 2        | 2          | 3        | 2          |
| C201.5         | 3        | 3          | 3        | 2           |            |     |     |     |     |      |      | 2        | 3          | 3        | 2          |
| <b>Average</b> | <b>3</b> | <b>2.8</b> | <b>3</b> | <b>2.75</b> | <b>2.3</b> |     |     |     |     |      |      | <b>2</b> | <b>2.5</b> | <b>3</b> | <b>2.2</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: DATA STRUCTURES (C202)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level     |
|--------|---|--------------|
| C202.1 | Understand basic data structures like arrays, linked lists, stacks, and queues                  | 2-Understand |
| C202.2 | Apply operations such as insertion, deletion, and traversal on linear and non-linear structures | 3-Apply      |
| C202.3 | Implement searching, sorting, and hashing techniques for efficient data access                  | 3-Apply      |
| C202.4 | Design and analyze algorithms for trees and graphs  | 4-Analyze    |
| C202.5 | Demonstrate problem-solving skills and teamwork through programming assignments and projects    | 3-Apply      |

#### CO-PO MAPPING

| CO             | PO1        | PO2        | PO3        | PO4        | PO5        | PO6        | PO7 | PO8 | PO9        | PO10 | PO11       | PO12       | PSO1       | PSO2       | PSO3       |
|----------------|------------|------------|------------|------------|------------|------------|-----|-----|------------|------|------------|------------|------------|------------|------------|
| C202.1         | 3          | 2          | 3          | 3          | 2          | 2          |     |     | 3          |      | 3          | 3          | 3          | 3          | 2          |
| C202.2         | 2          | 3          | 2          | 3          | 2          | 3          |     |     | 2          |      | 2          | 2          | 3          | 3          | 2          |
| C202.3         | 3          | 3          | 2          | 2          | 3          | 2          |     |     | 3          |      | 2          | 3          | 3          | 3          | 2          |
| C202.4         | 3          | 3          | 2          | 3          | 3          | 3          |     |     | 2          |      | 2          | 3          | 3          | 3          | 2          |
| C202.5         | 2          | 3          | 3          | 3          | 2          | 2          |     |     | 2          |      | 2          | 3          | 2          | 2          | 3          |
| <b>Average</b> | <b>2.6</b> | <b>2.8</b> | <b>2.4</b> | <b>2.8</b> | <b>2.4</b> | <b>2.4</b> |     |     | <b>2.4</b> |      | <b>2.2</b> | <b>2.8</b> | <b>2.8</b> | <b>2.8</b> | <b>2.2</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: COMPUTER ORIENTED STATISTICAL METHODS (C203)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level  |
|--------|---|-----------|
| C203.1 | Understand probability concepts and apply them to real-world problems                             | 3-Apply   |
| C203.2 | Analyze discrete and continuous probability distributions including Binomial, Poisson, and Normal | 4-Analyze |
| C203.3 | Apply statistical methods such as hypothesis testing and estimation                               | 3-Apply   |
| C203.4 | Use correlation and regression techniques for data analysis                                       | 3-Apply   |
| C203.5 | Implement statistical algorithms using computational tools and interpret results                  | 4-Analyze |

#### CO-PO MAPPING

| CO             | PO1      | PO2      | PO3        | PO4        | PO5      | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12       | PSO1     | PSO2       | PSO3 |
|----------------|----------|----------|------------|------------|----------|-----|-----|-----|-----|------|------|------------|----------|------------|------|
| C203.1         | 3        | 3        | 3          | 3          | 3        |     |     |     |     |      |      | 3          | 3        | 3          |      |
| C203.2         | 3        | 3        | 3          | 3          | 3        |     |     |     |     |      |      | 3          | 3        | 3          |      |
| C203.3         | 3        | 3        |            |            |          |     |     |     |     |      |      | 2          | 3        | 2          |      |
| C203.4         | 3        | 3        | 2          | 2          |          |     |     |     |     |      |      | 3          | 3        | 2          |      |
| C203.5         | 3        | 3        | 2          | 2          |          |     |     |     |     |      |      | 3          | 3        | 3          |      |
| <b>Average</b> | <b>3</b> | <b>3</b> | <b>2.5</b> | <b>2.5</b> | <b>3</b> |     |     |     |     |      |      | <b>2.8</b> | <b>3</b> | <b>2.6</b> |      |



**Department of Information Technology**

**II B. Tech I Semester**

**SUBJECT: Computer Organization and Microprocessor (C204)**

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level     |
|--------|---|--------------|
| C204.1 | Understand the basic structure and operation of digital computers             | 2-Understand |
| C204.2 | Analyze instruction sets and their impact on processor design                 | 4-Analyze    |
| C204.3 | Design and evaluate arithmetic and logic units                                | 5-Evaluate   |
| C204.4 | Explore control unit design including microprogramming and hardwired control  | 2-Understand |
| C204.5 | Understand memory organization, I/O systems, and multiprocessor architectures | 2-Understand |

**CO-PO MAPPING**

| CO             | PO1      | PO2        | PO3        | PO4        | PO5        | PO6 | PO7 | PO8 | PO9 | PO10 | PO11       | PO12     | PSO1       | PSO2     | PSO3       |
|----------------|----------|------------|------------|------------|------------|-----|-----|-----|-----|------|------------|----------|------------|----------|------------|
| C204.1         | 3        | 2          | 2          | 2          | 3          |     |     |     |     |      | 2          | 2        | 2          | 3        | 2          |
| C204.2         | 3        | 3          | 3          | 2          | 2          |     |     |     |     |      | 2          | 2        | 2          | 3        | 2          |
| C204.3         | 3        | 3          | 3          | 3          | 2          |     |     |     |     |      | 2          | 2        | 3          | 3        | 2          |
| C204.4         | 3        | 3          | 3          | 3          | 3          |     |     |     |     |      | 2          | 2        | 3          | 3        | 3          |
| C204.5         | 3        | 3          | 3          | 3          | 3          |     |     |     |     |      | 3          | 2        | 3          | 3        | 2          |
| <b>Average</b> | <b>3</b> | <b>2.8</b> | <b>2.8</b> | <b>2.6</b> | <b>2.6</b> |     |     |     |     |      | <b>2.2</b> | <b>2</b> | <b>2.6</b> | <b>3</b> | <b>2.2</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: Introduction to IoT (C205)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level     |
|--------|---|--------------|
| C205.1 | Understand IoT architecture, enabling technologies, and communication protocols | 2-Understand |
| C205.2 | Analyze sensor networks, embedded systems, and data acquisition techniques      | 4-Analyze    |
| C205.3 | Apply cloud integration and data analytics in IoT systems                       | 3-Apply      |
| C205.4 | Design IoT applications for smart cities, healthcare, and industrial automation | 5-Evaluate   |
| C205.5 | Demonstrate teamwork, documentation, and ethical responsibility in IoT projects | 3-Apply      |

#### CO-PO MAPPING

| CO             | PO1        | PO2        | PO3        | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1       | PSO2       | PSO3       |
|----------------|------------|------------|------------|-----|-----|-----|-----|-----|-----|------|------|------|------------|------------|------------|
| C205.1         | 3          | 2          | 3          |     |     |     |     |     |     |      |      |      | 2          | 3          | 3          |
| C205.2         | 3          | 3          | 2          |     |     |     |     |     |     |      |      |      | 3          | 3          | 2          |
| C205.3         | 3          | 3          | 2          |     |     |     |     |     |     |      |      |      | 3          | 3          |            |
| C205.4         | 3          | 3          | 2          |     |     |     |     |     |     |      |      |      | 3          | 3          |            |
| C205.5         | 2          | 3          | 3          |     |     |     |     |     |     |      |      |      | 2          | 2          | 3          |
| <b>Average</b> | <b>2.8</b> | <b>2.8</b> | <b>2.4</b> |     |     |     |     |     |     |      |      |      | <b>2.6</b> | <b>2.8</b> | <b>2.7</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: Digital Electronics Lab (C206)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level   |
|--------|---|------------|
| C206.1 | Demonstrate practical knowledge of electronic components and circuits               | 3-Apply    |
| C206.2 | Design and implement analog circuits such as amplifiers and oscillators             | 5-Evaluate |
| C206.3 | Construct and test digital circuits including logic gates, flip-flops, and counters | 3-Apply    |
| C206.4 | Apply troubleshooting techniques and interpret experimental data                    | 4-Analyze  |
| C206.5 | Exhibit teamwork, communication, and safety practices in lab environments           | 3-Apply    |

#### CO-PO MAPPING

| CO             | PO1        | PO2        | PO3        | PO4        | PO5        | PO6        | PO7 | PO8 | PO9      | PO10 | PO11 | PO12       | PSO1     | PSO2     | PSO3       |
|----------------|------------|------------|------------|------------|------------|------------|-----|-----|----------|------|------|------------|----------|----------|------------|
| C206.1         | 3          | 2          | 2          | 2          | 1          | 2          |     |     | 2        |      |      | 2          | 1        | 3        | 2          |
| C206.2         | 3          | 3          | 3          | 2          | 2          | 1          |     |     | 2        |      |      | 2          | 2        | 3        | 2          |
| C206.3         | 3          | 3          | 3          | 3          | 2          | 2          |     |     | 2        |      |      | 2          | 2        | 3        | 2          |
| C206.4         | 3          | 3          | 3          | 3          | 3          | 2          |     |     | 2        |      |      | 3          | 2        | 3        | 2          |
| C206.5         | 2          | 3          | 3          | 3          | 3          | 1          |     |     | 2        |      |      | 3          | 3        | 3        | 3          |
| <b>Average</b> | <b>2.8</b> | <b>2.8</b> | <b>2.8</b> | <b>2.6</b> | <b>2.2</b> | <b>1.6</b> |     |     | <b>2</b> |      |      | <b>2.4</b> | <b>2</b> | <b>3</b> | <b>2.2</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: DATA STRUCTURES LAB (C207)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES  | BT Level   |
|--------|--|------------|
| C207.1 | Implement linear data structures such as arrays, stacks, and queues            | 3-Apply    |
| C207.2 | Apply linked lists for dynamic memory management and manipulation              | 3-Apply    |
| C207.3 | Develop programs using trees and graphs for hierarchical and networked data    | 5-Evaluate |
| C207.4 | Implement searching, sorting, and hashing techniques for efficient data access | 3-Apply    |
| C207.5 | Demonstrate teamwork, debugging, and documentation skills in lab assignments   | 3-Apply    |

#### CO-PO MAPPING

| CO             | PO1      | PO2      | PO3        | PO4        | PO5        | PO6        | PO7 | PO8 | PO9        | PO10 | PO11       | PO12       | PSO1     | PSO2     | PSO3       |
|----------------|----------|----------|------------|------------|------------|------------|-----|-----|------------|------|------------|------------|----------|----------|------------|
| C207.1         | 3        | 3        | 2          | 2          | 2          | 2          |     |     | 3          |      | 2          | 2          | 3        | 3        | 2          |
| C207.2         | 3        | 3        | 3          | 3          | 2          | 2          |     |     | 2          |      | 3          | 2          | 3        | 3        | 2          |
| C207.3         | 3        | 3        | 3          | 3          | 2          | 2          |     |     | 2          |      | 3          | 3          | 3        | 3        | 2          |
| C207.4         | 3        | 3        | 3          | 3          | 3          | 2          |     |     | 2          |      | 2          | 3          | 3        | 3        | 2          |
| C207.5         | 3        | 3        | 3          | 3          | 3          | 3          |     |     | 3          |      | 2          | 3          | 3        | 3        | 3          |
| <b>Average</b> | <b>3</b> | <b>3</b> | <b>2.8</b> | <b>2.8</b> | <b>2.4</b> | <b>2.2</b> |     |     | <b>2.4</b> |      | <b>2.4</b> | <b>2.6</b> | <b>3</b> | <b>3</b> | <b>2.2</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: Internet of Things Lab (208)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES   | BT Level   |
|--------|---|------------|
| C208.1 | Understand to configure Raspberry Pi  | 3-Apply    |
| C208.2 | Design and implement various embedded system.                                     | 5-Evaluate |
| C208.3 | Implement communication protocol.   | 3-Apply    |
| C208.4 | Implement MQ Telemetry Transport protocol   | 3-Apply    |
| C208.5 | Develop program using Python Scripting Language which is used in many IoT devices | 5-Evaluate |

#### CO-PO MAPPING

| CO             | PO1         | PO2        | PO3        | PO4        | PO5        | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1       | PSO2       | PSO3        |
|----------------|-------------|------------|------------|------------|------------|-----|-----|-----|-----|------|------|------|------------|------------|-------------|
| C208.1         | 3           | 2          | 3          | 2          | 3          |     |     |     |     |      |      |      | 2          | 3          | 2           |
| C208.2         |             | 3          | 2          | 2          | 2          |     |     |     |     |      |      |      | 3          | 3          |             |
| C208.3         | 2           | 3          | 2          | 2          | 2          |     |     |     |     |      |      |      | 3          | 3          | 2           |
| C208.4         | 3           | 3          | 2          | 2          | 3          |     |     |     |     |      |      |      | 3          | 3          | 3           |
| C208.5         | 3           | 2          | 3          | 3          | 2          |     |     |     |     |      |      |      | 2          | 2          | 2           |
| <b>Average</b> | <b>2.75</b> | <b>2.6</b> | <b>2.4</b> | <b>2.2</b> | <b>2.4</b> |     |     |     |     |      |      |      | <b>2.6</b> | <b>2.8</b> | <b>2.25</b> |



**Department of Information Technology**

**II B. Tech I Semester**

**SUBJECT: DATA VISUALIZATION - R PROGRAMMING/ POWER BI (C209)**

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES  | BT Level     |
|--------|--|--------------|
| C209.1 | Understand the fundamentals of data visualization and the role of tools like R and Power BI.           | 2-Understand |
| C209.2 | Apply R programming techniques to manipulate, analyze, and visualize datasets.                         | 3-Apply      |
| C209.3 | Create interactive dashboards and reports using Power BI for business and engineering applications.    | 5-Evaluate   |
| C209.4 | Interpret visual data representations to support decision-making and communicate insights effectively. | 4-Analyze    |
| C209.5 | Demonstrate teamwork, documentation, and ethical responsibility in data visualization projects.        | 3-Apply      |

**CO-PO MAPPING**

| CO             | PO1        | PO2         | PO3        | PO4        | PO5      | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12     | PSO1       | PSO2       | PSO3        |
|----------------|------------|-------------|------------|------------|----------|-----|-----|-----|-----|------|------|----------|------------|------------|-------------|
| C209.1         | 3          |             | 2          | 2          |          |     |     |     |     |      |      | 2        | 2          | 3          |             |
| C209.2         | 3          | 3           | 3          | 2          | 2        |     |     |     |     |      |      | 2        | 3          | 2          | 2           |
| C209.3         | 3          | 2           | 2          | 2          | 2        |     |     |     |     |      |      | 2        | 3          | 2          | 2           |
| C209.4         | 2          | 2           | 2          | 2          | 2        |     |     |     |     |      |      | 2        | 2          | 3          | 2           |
| C209.5         | 3          | 2           | 2          | 1          | 2        |     |     |     |     |      |      | 2        |            |            | 3           |
| <b>Average</b> | <b>2.8</b> | <b>2.25</b> | <b>2.2</b> | <b>1.8</b> | <b>2</b> |     |     |     |     |      |      | <b>2</b> | <b>2.5</b> | <b>2.5</b> | <b>2.25</b> |



## Department of Information Technology

### II B. Tech I Semester

#### SUBJECT: GENDER SENSITIZATION LAB(C210)

After going through this course, the students will be able to

| S. No. | COURSE OUTCOMES  | BT Level     |
|--------|--|--------------|
| C210.1 | Develop awareness of gender roles and social constructs                    | 2-Understand |
| C210.2 | Understand the impact of gender on personal and professional relationships | 2-Understand |
| C210.3 | Analyze gender-based discrimination and inequalities in various contexts   | 4-Analyze    |
| C210.4 | Demonstrate sensitivity and empathy in communication and behavior          | 3-Apply      |
| C210.5 | Engage in group discussions and activities promoting gender equality       | 3-Apply      |

#### CO-PO MAPPING

| CO             | PO1 | PO2 | PO3 | PO4 | PO5 | PO6        | PO7        | PO8      | PO9 | PO10       | PO11 | PO12     | PSO1 | PSO2 | PSO3       |
|----------------|-----|-----|-----|-----|-----|------------|------------|----------|-----|------------|------|----------|------|------|------------|
| C210.1         |     |     |     |     |     | 2          | 2          | 3        |     | 2          |      | 3        |      |      | 2          |
| C210.2         |     |     |     |     |     | 2          | 3          | 3        |     | 2          |      | 3        |      |      | 2          |
| C210.3         |     |     |     |     |     | 3          | 2          | 3        |     | 2          |      | 3        |      |      | 3          |
| C210.4         |     |     |     |     |     | 3          | 2          | 3        |     | 3          |      | 3        |      |      | 2          |
| C210.5         |     |     |     |     |     | 3          | 2          | 3        |     | 3          |      | 3        |      |      | 3          |
| <b>Average</b> |     |     |     |     |     | <b>2.6</b> | <b>2.2</b> | <b>3</b> |     | <b>2.4</b> |      | <b>3</b> |      |      | <b>2.4</b> |