



# **KINGSTON ENGINEERING COLLEGE**

**(An Autonomous Institution)**

**(Approved by AICTE & COA, New Delhi, Affiliated to Anna University, Chennai)  
Chittoor Main Road, Christianpet,  
Katpadi, Vellore-632059**

## **DEPARTMENT OF INFORMATION TECHNOLOGY**

### **AUTONOMOUS CURRICULUM**

### **REGULATION 2026**

***Academic Year 2026-27 onwards***



## **INSTITUTE VISION**

To be a pioneer in engineering and management education by providing amicable ambience and being a centre for learning thereby perpetuating versatile professionals in engineering and management suitable for industry, higher education and research.

## **INSTITUTE MISSION**

- Developing, nurturing and building professionals with technical, research and managerial expertise, intellectual proficiency, right attitude and moral ethics.
- Building infrastructure that earmarks the institution to be the most preferred educational destination and provides the right ambience for creative and innovative teaching - learning process.
- Enabling learners to broaden their horizon and helping to meet global challenges.

## **QUALITY POLICY**

To establish and implement a robust quality system at Kingston Engineering College, encircling teaching, learning, research, and self-reliance, focusing on core and support functions to ensure accountability to stakeholders through continuous improvement and sustenance towards promoting holistic academic excellence.

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## **B. Tech – INFORMATION TECHNOLOGY**

### **REGULATION – 2026**

### **CHOICE BASED CREDIT SYSTEM**

#### **VISION**

To provide quality education to the students and impart IT excellence by building strong academic environment and to enable the essential skills in the innovators and entrepreneurs making them as proficient professionals for industrial consultancy.

#### **MISSION**

**M1:** Developing innovative, competent computer engineers through planning, in-depth analysis, and hands-on problem solving in the quest for the students to work with emerging technologies.

**M2:** Inculcating a learning environment and upgrade the knowledge of students through value-based education and promotes the academic excellence.

**M3:** Providing a leadership and ethical values for effective deliberate and tactical planning to cater the needs of the Society and to Prepare students for professional career and higher studies and promoting innovative research and education programs in the IT field.

#### **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

1. Demonstrate technical competence with analytical and critical thinking to understand and meet the diversified requirements of industry, academia and research.
2. Exhibit technical leadership, team skills and entrepreneurship skills to provide business solutions to real world problems.
3. Work in multi-disciplinary industries with social and environmental responsibility, work ethics and adaptability to address complex engineering and social problems.
4. Pursue lifelong learning, use cutting edge technologies and involve in applied research to design optimal solutions.

#### **PROGRAM OUTCOMES (POs)**

**1. Engineering Knowledge:** Apply math, science, and engineering fundamentals to complex problems.

**2. Problem Analysis:** Identify and analyze complex problems using research and sustainability principles.

**3. Design Solutions:** Design systems and processes considering health, safety, cost, culture, and environment.

**4. Investigations:** Use experiments, modelling, and data analysis to reach valid conclusions.

**5. Engineering Tools:** Apply modern tools for modelling and problem-solving, recognizing their limits.

**6. Society and Environment:** Assess societal, legal, and environmental impacts of engineering solutions.

**7. Ethics:** Commit to ethics, human values, diversity, and legal compliance.

**8. Teamwork:** Work effectively as an individual and in multidisciplinary teams.

**9. Communication:** Communicate clearly in reports, presentations, and documentation across diverse groups.

**10. Management and Finance:** Apply management and economic principles in projects and teamwork.

**11. Lifelong Learning:** Engage in continuous learning, adapt to new technologies, and think critically.

### PROGRAM SPECIFIC OUTCOMES (PSOs)

After the successful completion of the program, the graduates will be able to:

1. Design and develop efficient and sustainable Information System for Societal and Industrial applications.
2. Acquire skills in pace with rapid advancements in the field of Information Technology for development of innovative solutions in real world problems.
3. Exhibit research aptitude, work effectively in multidisciplinary teams and uphold ethical practices.

### MAPPING OF PEOs WITH POs

A broad relation between the Program Educational Objectives and the Program Outcomes is given in the following table.

| PROGRAM<br>EDUCATIONAL<br>OBJECTIVES (PEOs) | PROGRAM OUTCOMES (POs) |   |   |   |   |   |   |   |   |    |    |
|---------------------------------------------|------------------------|---|---|---|---|---|---|---|---|----|----|
|                                             | 1                      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| I                                           | 3                      | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1  | 2  |
| II                                          | 2                      | 2 | 3 | 1 | 2 | 1 | 2 | 3 | 3 | 3  | 2  |
| III                                         | 1                      | 2 | 2 | 1 | 1 | 3 | 3 | 3 | 2 | 2  | 2  |
| IV                                          | 2                      | 2 | 2 | 3 | 3 | 1 | 1 | 1 | 1 | 1  | 3  |

1 - Low, 2 - Medium, 3 - High, '-' - No Correlation

## MAPPING OF PSOs WITH POs

A broad relation between the Program Specific Outcomes and the Program Outcomes is given in the following table.

| PROGRAM SPECIFIC OUTCOMES (PSOs) | PROGRAM OUTCOMES (POs) |   |   |   |   |   |   |   |   |    |    |
|----------------------------------|------------------------|---|---|---|---|---|---|---|---|----|----|
|                                  | 1                      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| <b>I</b>                         | 2                      | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 1  | 2  |
| <b>II</b>                        | 2                      | 3 | 2 | 2 | 3 | 1 | 1 | 2 | 1 | 1  | 3  |
| <b>III</b>                       | 1                      | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 2 | 1  | 3  |

1 - Low, 2 - Medium, 3 - High, '-' - No Correlation

## SUSTAINABLE DEVELOPMENT GOALS (SDG)



## B. Tech – INFORMATION TECHNOLOGY

### REGULATION – 2026

### CURRICULUM SEMESTER I to VIII

### CHOICE BASED CREDIT SYSTEM

(For the Students admitted from the Academic Year 2026-27)

| Semester I                              |             |                                                |             |                 |           |          |           |           |           |
|-----------------------------------------|-------------|------------------------------------------------|-------------|-----------------|-----------|----------|-----------|-----------|-----------|
| S. No                                   | Course Code | Course Name                                    | Course Type | Contact Periods | L         | T        | P         | C         | SDG       |
| <b>Theory Course</b>                    |             |                                                |             |                 |           |          |           |           |           |
| 1                                       | HS26101     | Heritage of Tamil                              | HS          | 1               | 1         | 0        | 0         | 1         | 4,11,17   |
| 2                                       | MA26101     | Matrices and Calculus                          | BS          | 4               | 3         | 1        | 0         | 4         | 4,9,11,12 |
| <b>Lab Integrated Theory Course</b>     |             |                                                |             |                 |           |          |           |           |           |
| 3                                       | HS26102     | English for Interpersonal Communication-I      | HS          | 3               | 1         | 0        | 2         | 2         | 4,8,16    |
| 4                                       | EC26C01     | Digital Principles and System Design           | ES          | 5               | 3         | 0        | 2         | 4         | 7,9,11,12 |
| 5                                       | CS26C01     | Programming in C                               | ES          | 5               | 3         | 0        | 2         | 4         | 4,8,9     |
| 6                                       | PH26C01     | Physics for Computer Science                   | BS          | 4               | 2         | 0        | 2         | 3         | 7,8,9,12  |
| <b>Practical Course</b>                 |             |                                                |             |                 |           |          |           |           |           |
| 7                                       | CS26C11     | Engineering Foundation Laboratory (CSE & ECE)  | ES          | 2               | 0         | 0        | 2         | 1         | 4,8,9,12  |
| <b>Employability Enhancement Course</b> |             |                                                |             |                 |           |          |           |           |           |
| 8                                       | PD26S01     | Digital Professional Skills                    | EE          | 2               | 0         | 0        | 2         | 1         | 4,8,9     |
| <b>Mandatory Course</b>                 |             |                                                |             |                 |           |          |           |           |           |
| 9                                       | MC26101     | Student Induction Program                      | MC          | 3 weeks         | 0         | 0        | 0         | 0         | 4         |
| 10                                      | MC26102     | Foreign Language – Level I (Japanese / German) | MC          | 2               | 0         | 0        | 2         | 1         | 4,8,17    |
| 11                                      | MC26103     | Physical Education I                           | MC          | 2               | 0         | 0        | 2         | 0         | 3,4,5     |
| <b>Audit Course</b>                     |             |                                                |             |                 |           |          |           |           |           |
| 12                                      | AC26101     | NSS/ YRC/ SDG/ Club Activities                 | AC          | 1 week          | -         | -        | -         | 0         | 3,11,17   |
| <b>TOTAL</b>                            |             |                                                |             | <b>30</b>       | <b>13</b> | <b>1</b> | <b>16</b> | <b>21</b> | <b>-</b>  |

| Semester II                      |              |                                                  |             |                 |    |   |    |    |             |
|----------------------------------|--------------|--------------------------------------------------|-------------|-----------------|----|---|----|----|-------------|
| S. No                            | Subject Code | Subject Name                                     | Course Type | Contact Periods | L  | T | P  | C  | SDG         |
| Theory Course                    |              |                                                  |             |                 |    |   |    |    |             |
| 1                                | HS26201      | Tamil and Technology                             | HS          | 1               | 1  | 0 | 0  | 1  | 11          |
| 2                                | MA26201      | Linear Algebra                                   | BS          | 4               | 3  | 1 | 0  | 4  | 4,8,9       |
| 3                                | HS26202      | Universal Human Values-II: Understanding Harmony | HS          | 3               | 3  | 0 | 0  | 3  | 3,4,16      |
| Lab Integrated Theory Course     |              |                                                  |             |                 |    |   |    |    |             |
| 4                                | HS26203      | English for Interpersonal Communication-II       | HS          | 3               | 1  | 0 | 2  | 2  | 4,8,9       |
| 5                                | CS26201      | Data Structures                                  | ES          | 5               | 3  | 0 | 2  | 4  | 4,8,9,12    |
| 6                                | CS26C02      | Python Programming                               | ES          | 5               | 3  | 0 | 2  | 4  | 4,8,9       |
| 7                                | CH26C01      | Chemistry for Engineers                          | BS          | 4               | 2  | 0 | 2  | 3  | 6,7,9,12,13 |
| Practical Course                 |              |                                                  |             |                 |    |   |    |    |             |
| 8                                | ME26C11      | Engineering Foundation Laboratory (Mech)         | ES          | 2               | 0  | 0 | 2  | 1  | 4, 8, 9, 12 |
| Employability Enhancement Course |              |                                                  |             |                 |    |   |    |    |             |
| 9                                | PD26S02      | Professional Excellence and Career Development   | EE          | 2               | 0  | 0 | 2  | 1  | 3, 4, 8,16  |
| Mandatory Course                 |              |                                                  |             |                 |    |   |    |    |             |
| 10                               | MC26201      | Foreign Language- Level II (Japanese/German)     | MC          | 2               | 0  | 0 | 2  | 1  | 4,8,17      |
| 11                               | MC26202      | Physical Education II                            | MC          | 2               | 0  | 0 | 2  | 0  | 3,4,5       |
| Audit Course                     |              |                                                  |             |                 |    |   |    |    |             |
| 12                               | AC26201      | NSS/ YRC/ SDG/ Club Activities                   | AC          | 1 Week          | -  | - | -  | 0  | 3,11,17     |
| TOTAL                            |              |                                                  |             | 33              | 16 | 1 | 16 | 24 | -           |

| Semester III                     |              |                                                 |             |                 |    |   |    |    |                  |
|----------------------------------|--------------|-------------------------------------------------|-------------|-----------------|----|---|----|----|------------------|
| S. No                            | Subject Code | Subject Name                                    | Course Type | Contact Periods | L  | T | P  | C  | SDG              |
| Theory Course                    |              |                                                 |             |                 |    |   |    |    |                  |
| 1                                | MA26C01      | Discrete Mathematics                            | BS          | 4               | 3  | 1 | 0  | 4  | 4, 9, 11, 12, 16 |
| 2                                | CS26301      | Operating Systems                               | PC          | 4               | 3  | 1 | 0  | 4  | 4,8,9            |
| Lab Integrated Theory Course     |              |                                                 |             |                 |    |   |    |    |                  |
| 3                                | CS26302      | Programming in Java                             | PC          | 5               | 3  | 0 | 2  | 4  | 4,8,9            |
| 4                                | CS26303      | Algorithms                                      | PC          | 5               | 3  | 0 | 2  | 4  | 4,8,9            |
| Practical Course                 |              |                                                 |             |                 |    |   |    |    |                  |
| 5                                | CS26311      | Operating Systems Laboratory                    | PC          | 2               | 0  | 0 | 2  | 1  | 4,8,9            |
| 6                                | IT26301      | Design Thinking and Idea Innovation             | ES          | 4               | 2  | 0 | 2  | 3  | 4,9              |
| Employability Enhancement Course |              |                                                 |             |                 |    |   |    |    |                  |
| 7                                | IT26S01      | Employability Enhancement Skill – I             | EE          | 2               | 0  | 0 | 2  | 1  | 4,8              |
| 8                                | IT26S02      | Industry Certification Course-I                 | EE          | 2               | 0  | 0 | 2  | 1  | -                |
| Mandatory Course                 |              |                                                 |             |                 |    |   |    |    |                  |
| 9                                | MC26301      | Environmental and Sustainable Future            | MC          | 1               | 1  | 0 | 0  | 1  | 11,12, 13        |
| 10                               | MC26302      | Foreign Language- Level III (Japanese / German) | MC          | 2               | 0  | 0 | 2  | 1  | 4,8,17           |
| Audit Course                     |              |                                                 |             |                 |    |   |    |    |                  |
| 11                               | AC26301      | NSS/ YRC/ SDG/ Club Activities                  | AC          | 1 Week          | -  | - | -  | 0  | 3,11,17          |
| TOTAL                            |              |                                                 |             | 31              | 15 | 2 | 14 | 24 | -                |

| Semester IV                      |              |                                               |             |                 |    |   |    |    |                |
|----------------------------------|--------------|-----------------------------------------------|-------------|-----------------|----|---|----|----|----------------|
| S. No                            | Subject Code | Subject Name                                  | Course Type | Contact Periods | L  | T | P  | C  | SDG            |
| Theory Course                    |              |                                               |             |                 |    |   |    |    |                |
| 1                                | MA26C02      | Probability and Statistics                    | BS          | 4               | 3  | 1 | 0  | 4  | 3, 4, 8, 9, 13 |
| 2                                | -            | Open Elective - I                             | OE          | 3               | 3  | 0 | 0  | 3  | -              |
| 3                                | IT26401      | Software Engineering and Project Management   | PC          | 3               | 3  | 0 | 0  | 3  | 4,8            |
| Lab Integrated Theory Course     |              |                                               |             |                 |    |   |    |    |                |
| 4                                | CS26401      | Database Management Systems                   | PC          | 4               | 2  | 0 | 2  | 3  | 4,8,9          |
| 5                                | CS26402      | Computer Networks                             | PC          | 4               | 2  | 0 | 2  | 3  | 8,9,11         |
| 6                                | CS26403      | Artificial Intelligence and Machine Learning  | PC          | 5               | 3  | 0 | 2  | 4  | 3,8,9          |
| Practical Course                 |              |                                               |             |                 |    |   |    |    |                |
| 7                                | IT26411      | Innovation Design Laboratory                  | PC          | 4               | 0  | 0 | 4  | 2  | 4,9            |
| Employability Enhancement Course |              |                                               |             |                 |    |   |    |    |                |
| 8                                | IT26S03      | Employability Enhancement Skill – II          | EE          | 2               | 0  | 0 | 2  | 1  | 4,8            |
| 9                                | IT26S04      | Industry Oriented Course-I                    | EE          | 2               | 0  | 0 | 2  | 1  | -              |
| Mandatory Course                 |              |                                               |             |                 |    |   |    |    |                |
| 10                               | MC26401      | Foreign Language-Level IV (Japanese / German) | MC          | 2               | 0  | 0 | 2  | 1  | 4,8,17         |
| 11                               | MC26402      | Indian Constitution                           | MC          | 1               | 1  | 0 | 0  | 0  | 4,16           |
| Audit Course                     |              |                                               |             |                 |    |   |    |    |                |
| 12                               | AC26401      | NSS/ YRC/ SDG/ Club Activities                | AC          | 1 Week          | -  | - | -  | 0  | 3,11,17        |
| TOTAL                            |              |                                               |             | 34              | 17 | 1 | 16 | 25 | -              |

| Semester V                              |              |                                                             |             |                 |           |          |           |           |             |
|-----------------------------------------|--------------|-------------------------------------------------------------|-------------|-----------------|-----------|----------|-----------|-----------|-------------|
| S. No                                   | Subject Code | Subject Name                                                | Course Type | Contact Periods | L         | T        | P         | C         | SDG         |
| <b>Theory Course</b>                    |              |                                                             |             |                 |           |          |           |           |             |
| 1                                       | IT26501      | Full Stack Web Development                                  | PC          | 4               | 3         | 1        | 0         | <b>4</b>  | 4,8,9       |
| 2                                       | -            | Open Elective - II                                          | OE          | 3               | 3         | 0        | 0         | <b>3</b>  | -           |
| <b>Lab Integrated Theory Course</b>     |              |                                                             |             |                 |           |          |           |           |             |
| 3                                       | IT26C01      | Cloud Computing                                             | PC          | 4               | 2         | 0        | 2         | <b>3</b>  | 8,9,12      |
| 4                                       | -            | Professional Elective - I                                   | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | 4,8,9       |
| 5                                       | -            | Professional Elective - II                                  | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | 4,8,9       |
| <b>Practical Course</b>                 |              |                                                             |             |                 |           |          |           |           |             |
| 6                                       | IT26511      | Full Stack Web Development Lab                              | PC          | 2               | 0         | 0        | 2         | <b>1</b>  | 4,8,9       |
| 7                                       | IT26512      | Innovation Product Development-I Laboratory                 | PC          | 4               | 0         | 0        | 4         | <b>2</b>  | 4,8,9,12    |
| <b>Employability Enhancement Course</b> |              |                                                             |             |                 |           |          |           |           |             |
| 9                                       | IT26S05      | Career Readiness - I                                        | EE          | 2               | 0         | 0        | 2         | <b>1</b>  | 4,8         |
| <b>Mandatory Course</b>                 |              |                                                             |             |                 |           |          |           |           |             |
| 10                                      | MC26501      | Disaster Management                                         | MC          | 1               | 1         | 0        | 0         | <b>0</b>  | 12,13       |
| <b>Audit Course</b>                     |              |                                                             |             |                 |           |          |           |           |             |
| 11                                      | AC26501      | NSS/ YRC/ SDG/ Club Activities                              | AC          | 1 Week          | -         | -        | -         | <b>0</b>  | 3,11,17     |
| <b>TOTAL</b>                            |              |                                                             |             | <b>28</b>       | <b>13</b> | <b>1</b> | <b>14</b> | <b>20</b> | -           |
| <b>For Honours Degree</b>               |              |                                                             |             |                 |           |          |           |           |             |
| 1                                       |              | Multidisciplinary Project (Capstone Design Project-Level I) | EE          | 12              | 0         | 0        | 12        | <b>6</b>  | 4,8,9,11,12 |
| <b>(or)</b>                             |              |                                                             |             |                 |           |          |           |           |             |
| 1                                       |              | Honours Elective-I                                          | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | -           |
| 2                                       |              | Honours Elective-II                                         | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | -           |
| <b>For Minor Degree</b>                 |              |                                                             |             |                 |           |          |           |           |             |
| 1                                       |              | Minor Elective-I                                            | PC          | 3               | 3         | 0        | 0         | <b>3</b>  | -           |
| 2                                       |              | Minor Elective-II                                           | PC          | 3               | 3         | 0        | 0         | <b>3</b>  | -           |

**Semester VI**

| S. No                                   | Subject Code | Subject Name                                                  | Course Type | Contact Periods | L         | T        | P         | C         | SDG          |
|-----------------------------------------|--------------|---------------------------------------------------------------|-------------|-----------------|-----------|----------|-----------|-----------|--------------|
| <b>Theory Course</b>                    |              |                                                               |             |                 |           |          |           |           |              |
| 1                                       | -            | Management Elective                                           | HS          | 3               | 3         | 0        | 0         | <b>3</b>  | -            |
| 2                                       | IT26601      | Data Science and Analytics                                    | PC          | 3               | 3         | 0        | 0         | <b>3</b>  | 4,8,9        |
| 3                                       |              | Open Elective - III                                           | OE          | 3               | 3         | 0        | 0         | <b>3</b>  | -            |
| <b>Lab Integrated Theory Course</b>     |              |                                                               |             |                 |           |          |           |           |              |
| 4                                       |              | Professional Elective - III                                   | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | 4,8,9        |
| 5                                       |              | Professional Elective - IV                                    | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | 4,8,9        |
| 6                                       | EC26C02      | Microprocessors and Microcontrollers                          | PC          | 4               | 2         | 0        | 2         | <b>3</b>  | 4, 9         |
| <b>Practical Course</b>                 |              |                                                               |             |                 |           |          |           |           |              |
| 7                                       | IT26611      | Innovation Product Development-II Laboratory                  | EE          | 4               | 0         | 0        | 4         | <b>2</b>  | 4,8,9,12     |
| <b>Employability Enhancement Course</b> |              |                                                               |             |                 |           |          |           |           |              |
| 8                                       | IT26S06      | Career Readiness - II                                         | EE          | 2               | 0         | 0        | 2         | <b>1</b>  | 4,8          |
| 9                                       | IT26S07      | Industry-Oriented Course-II                                   | EE          | 2               | 0         | 0        | 2         | <b>1</b>  | -            |
| <b>Mandatory Course</b>                 |              |                                                               |             |                 |           |          |           |           |              |
| 10                                      | MC26601      | Introduction to Indian Knowledge System                       | MC          | 1               | 1         | 0        | 0         | <b>0</b>  | 4,11,12      |
| <b>Audit Course</b>                     |              |                                                               |             |                 |           |          |           |           |              |
| 11                                      | AC26601      | NSS/ YRC/ SDG/ Club Activities                                | AC          | 1 Week          | -         | -        | -         | <b>0</b>  | 3,11,17      |
| <b>TOTAL</b>                            |              |                                                               |             | <b>30</b>       | <b>16</b> | <b>0</b> | <b>14</b> | <b>22</b> | -            |
| <b>For Honours Degree</b>               |              |                                                               |             |                 |           |          |           |           |              |
| 1                                       |              | Multidisciplinary Project (Capstone Design Project- Level II) | EE          | 12              | 0         | 0        | 12        | <b>6</b>  | 4,8, 9,11,12 |
| <b>(or)</b>                             |              |                                                               |             |                 |           |          |           |           |              |
| 1                                       |              | Honours Elective-III                                          | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | -            |
| 2                                       |              | Honours Elective-IV                                           | PE          | 4               | 2         | 0        | 2         | <b>3</b>  | -            |
| <b>For Minor Degree</b>                 |              |                                                               |             |                 |           |          |           |           |              |
| 1                                       |              | Minor Elective-III                                            | PC          | 3               | 3         | 0        | 0         | <b>3</b>  | -            |
| 2                                       |              | Minor Elective-IV                                             | PC          | 3               | 3         | 0        | 0         | <b>3</b>  | -            |

| Semester VII                     |              |                                                               |             |                 |    |   |    |    |             |
|----------------------------------|--------------|---------------------------------------------------------------|-------------|-----------------|----|---|----|----|-------------|
| S. No                            | Subject Code | Subject Name                                                  | Course Type | Contact Periods | L  | T | P  | C  | SDG         |
| Theory Course                    |              |                                                               |             |                 |    |   |    |    |             |
| 1                                | HS26701      | Research and Publication Ethics                               | HS          | 3               | 2  | 1 | 0  | 3  | 4,9,16,17   |
| 2                                | IT26702      | Big Data Engineering                                          | PC          | 3               | 3  | 0 | 0  | 3  | 8,9,12      |
| Lab Integrated Theory Course     |              |                                                               |             |                 |    |   |    |    |             |
| 3                                |              | Professional Elective – V (Dept. Choice)                      | PE          | 4               | 2  | 0 | 2  | 3  | -           |
| 4                                | AD26C01      | Cryptography and Network Security                             | PC          | 5               | 3  | 0 | 2  | 4  | 8,9,16      |
| Practical Course                 |              |                                                               |             |                 |    |   |    |    |             |
| 5                                | IT26711      | Mini Project                                                  | EE          | 4 Weeks         | 0  | 0 | 4  | 2  | 4,8,9       |
| 6                                | IT26712      | Big Data Engineering Lab                                      | PC          | 4               | 0  | 0 | 4  | 2  | 8,9,12      |
| 7                                | IT26713      | Internship                                                    | EE          | 4               | 0  | 0 | 0  | 2  | -           |
| Employability Enhancement Course |              |                                                               |             |                 |    |   |    |    |             |
| 7                                | IT26S08      | Industry Readiness and Professional Excellence                | EE          | 2               | 0  | 0 | 2  | 1  | 4,8,9,12    |
| 8                                | IT26S09      | Industry Certification Course-II                              | EE          | 2               | 0  | 0 | 2  | 1  | -           |
| TOTAL                            |              |                                                               |             | 27              | 10 | 1 | 16 | 21 | -           |
| For Honours Degree               |              |                                                               |             |                 |    |   |    |    |             |
| 1                                | -            | Multidisciplinary Project (Capstone Design Project-Level III) | EE          | 12              | 0  | 0 | 12 | 6  | 4,8,9,11,12 |
| (or)                             |              |                                                               |             |                 |    |   |    |    |             |
| 1                                | -            | Honours Elective-V                                            | PE          | 4               | 2  | 0 | 2  | 3  | -           |
| 2                                | -            | Honours Elective-VI                                           | PE          | 4               | 2  | 0 | 2  | 3  | -           |
| For Minor Degree                 |              |                                                               |             |                 |    |   |    |    |             |
| 1                                | -            | Minor Elective-V                                              | PC          | 3               | 3  | 0 | 0  | 3  | -           |
| 2                                | -            | Minor Elective-VI                                             | PC          | 3               | 3  | 0 | 0  | 3  | -           |

### Semester VIII

| S. No            | Subject Code | Subject Name | Course Type | Contact Periods | L        | T        | P         | C        | SDG      |
|------------------|--------------|--------------|-------------|-----------------|----------|----------|-----------|----------|----------|
| Practical Course |              |              |             |                 |          |          |           |          |          |
| 1                | IT26811      | Project Work | PC          | 16              | 0        | 0        | 16        | 8        | 4,8,9    |
| <b>TOTAL</b>     |              |              |             | <b>16</b>       | <b>0</b> | <b>0</b> | <b>16</b> | <b>8</b> | <b>-</b> |

### Credit Distribution

| S. No        | Subject Area                          | Credit Per Semester |           |           |           |           |           |           |          | Credits Total | Percentage |
|--------------|---------------------------------------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|---------------|------------|
|              | Semester                              | I                   | II        | III       | IV        | V         | VI        | VII       | VIII     |               |            |
| 1            | Humanities and Social Science (HS)    | 3                   | 6         | 0         | 0         | 0         | 3         | 3         | 0        | 15            | 9.10       |
| 2            | Basic Science Course (BS)             | 7                   | 7         | 4         | 4         | 0         | 0         | 0         | 0        | 22            | 13.33      |
| 3            | Engineering Science Course (ES)       | 9                   | 9         | 3         | 0         | 0         | 0         | 0         | 0        | 21            | 12.73      |
| 4            | Employability Enhancement Course (EE) | 1                   | 1         | 2         | 2         | 1         | 4         | 6         | 0        | 17            | 10.30      |
| 5            | Open Elective (OE)                    | 0                   | 0         | 0         | 3         | 3         | 3         | 0         | 0        | 9             | 5.45       |
| 6            | Professional Course (PC)              | 0                   | 0         | 13        | 15        | 10        | 6         | 9         | 8        | 61            | 36.96      |
| 7            | Professional Elective (PE)            | 0                   | 0         | 0         | 0         | 6         | 6         | 3         | 0        | 15            | 9.10       |
| 8            | Mandatory Course (MC)                 | 1                   | 1         | 2         | 1         | 0         | 0         | 0         | 0        | 5             | 3.03       |
| 9            | Audit Course (AC)                     | 0                   | 0         | 0         | 0         | 0         | 0         | 0         | 0        | 0             | 0          |
| <b>Total</b> |                                       | <b>21</b>           | <b>24</b> | <b>24</b> | <b>25</b> | <b>20</b> | <b>22</b> | <b>21</b> | <b>8</b> | <b>165</b>    | <b>100</b> |

### Professional Elective Verticals

| Vertical I<br>Artificial<br>Intelligence &<br>Data Science | Vertical II<br>Cloud, DevOps &<br>Platform<br>Engineering | Vertical III<br>Software Product<br>Engineering | Vertical IV<br>Cyber Security &<br>Digital Trust | Vertical V<br>Emerging<br>Technologies &<br>Intelligent<br>Systems |
|------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------|
| Data Warehousing & Data Mining                             | DevOps                                                    | Web Development                                 | Cyber Security Essentials                        | Fundamentals of Blockchain Technology                              |
| Social Network Analysis                                    | Hybrid Cloud Technologies                                 | Mobile Application Development                  | Information System Audit                         | Embedded Systems & IoT                                             |
| Natural Language Processing                                | Site Reliability Engineering                              | C# and .NET Programming                         | Information Retrieval Techniques                 | AR/VR                                                              |
| Deep Learning                                              | AIOps                                                     | Software Testing                                | NoSQL Databases                                  | Fundamentals of Quantum Computing                                  |
| Generative AI and Applications                             | Basics of Edge Computing                                  | Compiler Design                                 | Prompt Engineering                               | Image and Video Analytics                                          |
| MLOps                                                      | Robotic Process Automation                                | Game Development                                | Agentic AI                                       | UI/UX Design                                                       |

#### Professional Elective / Honors Degree – Vertical I Artificial Intelligence & Data Science

| S. No | Subject Code | Subject Name                   | Course Type | Contact Periods | L | T | P | C | SDG          |
|-------|--------------|--------------------------------|-------------|-----------------|---|---|---|---|--------------|
| 1     | IT26AD1      | Data Warehousing & Data Mining | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12     |
| 2     | IT26AD2      | Social Network Analysis        | PC          | 5               | 3 | 0 | 2 | 3 | 9, 11, 16    |
| 3     | IT26AD3      | Natural Language Processing    | PC          | 5               | 3 | 0 | 2 | 3 | 4, 9, 10, 16 |
| 4     | IT26AD4      | Deep Learning                  | PC          | 5               | 3 | 0 | 2 | 3 | 3, 8, 9      |
| 5     | IT26AD5      | Generative AI and Applications | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9, 10  |
| 6     | IT26AD6      | MLOps                          | PC          | 5               | 3 | 0 | 2 | 3 | 8, 12        |

**Professional Elective / Honors Degree – Vertical II**  
**Cloud, DevOps & Platform Engineering**

| S. No | Subject Code | Subject Name                 | Course Type | Contact Periods | L | T | P | C | SDG       |
|-------|--------------|------------------------------|-------------|-----------------|---|---|---|---|-----------|
| 1     | IT26CD1      | DevOps                       | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12  |
| 2     | IT26CD2      | Hybrid Cloud Technologies    | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12  |
| 3     | IT26CD3      | Site Reliability Engineering | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 11  |
| 4     | IT26CD4      | AI/ops                       | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12  |
| 5     | IT26CD5      | Basics of Edge Computing     | PC          | 5               | 3 | 0 | 2 | 3 | 9, 11, 12 |
| 6     | IT26CD6      | Robotic Process Automation   | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12  |

**Professional Elective / Honors Degree – Vertical III**  
**Software Product Engineering**

| S. No | Subject Code | Subject Name                   | Course Type | Contact Periods | L | T | P | C | SDG          |
|-------|--------------|--------------------------------|-------------|-----------------|---|---|---|---|--------------|
| 1     | IT26SP1      | Web Development                | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9, 10  |
| 2     | IT26SP2      | Mobile Application Development | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 10, 11 |
| 3     | IT26SP3      | C# and .NET Programming        | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9         |
| 4     | IT26SP4      | Software Testing               | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12     |
| 5     | IT26SP5      | Compiler Design                | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9      |
| 6     | IT26SP6      | Game Development               | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9, 10  |

**Professional Elective / Honors Degree – Vertical IV**  
**Cyber Security & Digital Trust**

| S. No | Subject Code | Subject Name                     | Course Type | Contact Periods | L | T | P | C | SDG      |
|-------|--------------|----------------------------------|-------------|-----------------|---|---|---|---|----------|
| 1     | IT26CD1      | Cyber Security Essentials        | PC          | 5               | 3 | 0 | 2 | 3 | 9, 16    |
| 2     | IT26CD2      | Information System Audit         | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 16 |
| 3     | IT26CD3      | Information Retrieval Techniques | PC          | 5               | 3 | 0 | 2 | 3 | 4, 9, 10 |
| 4     | IT26CD4      | NoSQL Databases                  | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 12 |
| 5     | IT26CD5      | Prompt Engineering               | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9  |
| 6     | IT26CD6      | Agentic AI                       | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 16 |

**Professional Elective / Honors Degree – Vertical V**  
**Emerging Technologies & Intelligent Systems**

| S. No | Subject Code | Subject Name                          | Course Type | Contact Periods | L | T | P | C | SDG       |
|-------|--------------|---------------------------------------|-------------|-----------------|---|---|---|---|-----------|
| 1     | IT26ET1      | Fundamentals of Blockchain Technology | PC          | 5               | 3 | 0 | 2 | 3 | 8, 9, 16  |
| 2     | IT26ET2      | Embedded Systems & IoT                | PC          | 5               | 3 | 0 | 2 | 3 | 9, 11, 12 |
| 3     | IT26ET3      | AR/VR                                 | PC          | 5               | 3 | 0 | 2 | 3 | 4, 8, 9   |
| 4     | IT26ET4      | Fundamentals of Quantum Computing     | PC          | 5               | 3 | 0 | 2 | 3 | 4, 9      |
| 5     | IT26ET5      | Image and Video Analytics             | PC          | 5               | 3 | 0 | 2 | 3 | 3, 9, 11  |
| 6     | IT26ET6      | UI/UX Design                          | PC          | 5               | 3 | 0 | 2 | 3 | 4, 9, 10  |

### Open Elective Streams

**(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).**

#### List of Open Electives

| S. No | Course Code | Course Name                                            | Course Type | Contact Periods | L | T | P | C | SDG      |
|-------|-------------|--------------------------------------------------------|-------------|-----------------|---|---|---|---|----------|
| 1     | OE26C01     | Environment and Social Impact Assessment               | OE          | 3               | 3 | 0 | 0 | 3 | 11,13,15 |
| 2     | OE26C02     | Data Communication                                     | OE          | 3               | 3 | 0 | 0 | 3 | 9,17     |
| 3     | OE26C03     | Renewable energy Systems                               | OE          | 3               | 3 | 0 | 0 | 3 | 7,9,13   |
| 4     | OE26C04     | E-Vehicle                                              | OE          | 3               | 3 | 0 | 0 | 3 | 7,11,13  |
| 5     | OE26C05     | Holistic Nutrition                                     | OE          | 3               | 3 | 0 | 0 | 3 | 2,3      |
| 6     | OE26C06     | NGOs and Sustainable Development                       | OE          | 3               | 3 | 0 | 0 | 3 | 1,10,17  |
| 7     | OE26C07     | Fundamentals of Quantum Electronics                    | OE          | 3               | 3 | 0 | 0 | 3 | 4,9      |
| 8     | OE26C08     | Biotechnology in Health Care                           | OE          | 3               | 3 | 0 | 0 | 3 | 3,9      |
| 9     | OE26C09     | Space Science                                          | OE          | 3               | 3 | 0 | 0 | 3 | 4,9,13   |
| 10    | OE26C10     | Introduction to Industrial Engineering                 | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,12   |
| 11    | OE26C11     | Food, Nutrition and Health                             | OE          | 3               | 3 | 0 | 0 | 3 | 2,3      |
| 12    | OE26C12     | Introduction to Industrial Instrumentation and control | OE          | 3               | 3 | 0 | 0 | 3 | 9,12     |
| 13    | OE26C13     | Graph Theory                                           | OE          | 3               | 3 | 0 | 0 | 3 | 4,9      |
| 14    | OE26C14     | IT in Agricultural Systems                             | OE          | 3               | 3 | 0 | 0 | 3 | 2,9,15   |
| 15    | OE26C15     | Digital Payment Systems                                | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,10   |
| 16    | OE26C16     | Project Report Writing                                 | OE          | 3               | 3 | 0 | 0 | 3 | 4        |
| 17    | OE26C17     | English for Competitive Examinations                   | OE          | 3               | 3 | 0 | 0 | 3 | 4,8      |
| 18    | OE26C18     | Fundamentals of Aeronautical Engineering               | OE          | 3               | 3 | 0 | 0 | 3 | 9,11     |
| 19    | OE26C19     | Life Style Diseases                                    | OE          | 3               | 3 | 0 | 0 | 3 | 3        |
| 20    | OE26C20     | Operations Research                                    | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,12   |
| 21    | OE26C21     | Cost Management of Engineering Projects                | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,12   |
| 22    | OE26C22     | Industrial Nano technology                             | OE          | 3               | 3 | 0 | 0 | 3 | 3,9      |
| 23    | OE26C23     | Resource Management Techniques                         | OE          | 3               | 3 | 0 | 0 | 3 | 6,12,13  |
| 24    | OE26C24     | Fintech Regulation                                     | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,16   |
| 25    | OE26C25     | Introduction to Control Engineering                    | OE          | 3               | 3 | 0 | 0 | 3 | 9,12     |
| 26    | OE26C26     | Pharmaceutical Nanotechnology                          | OE          | 3               | 3 | 0 | 0 | 3 | 3,9      |
| 27    | OE26C27     | Aviation Management                                    | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,11   |
| 28    | OE26C28     | AI for Business and Society                            | OE          | 3               | 3 | 0 | 0 | 3 | 8,9,16   |
| 29    | OE26C29     | Soft Computing                                         | OE          | 3               | 3 | 0 | 0 | 3 | 4,9      |
| 30    | OE26C30     | Cyber Loss and Digital Forensics                       | OE          | 3               | 3 | 0 | 0 | 3 | 9,16     |

**Semester VI**

| S. No | Subject Code | Subject Name                       | Course Type | Contact Periods | L | T | P | C | SDG          |
|-------|--------------|------------------------------------|-------------|-----------------|---|---|---|---|--------------|
| 1     | HS26601      | Principles of Management           | HS          | 3               | 3 | 0 | 0 | 3 | 8, 9         |
| 2     | HS26602      | Total Quality Management           | HS          | 3               | 3 | 0 | 0 | 3 | 9, 12        |
| 3     | HS26603      | Strategic Management               | HS          | 3               | 3 | 0 | 0 | 3 | 8, 12, 17    |
| 4     | HS26608      | Supply Chain Management            | HS          | 3               | 3 | 0 | 0 | 3 | 8, 9, 12, 13 |
| 5     | HS26610      | Software Project Management        | HS          | 3               | 3 | 0 | 0 | 3 | 8, 9         |
| 6     | HS26611      | Essentials of Financial Management | HS          | 3               | 3 | 0 | 0 | 3 | 8, 9         |

### VERTICALS FOR MINOR DEGREE

| Vertical I<br>Fintech                       | Vertical II<br>Blockchain and Web3<br>Technologies                 | Vertical III<br>Intelligent Systems and<br>Applied AI    |
|---------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------|
| Introduction to Fintech                     | Foundations of<br>Blockchain Technology                            | Large Language Models                                    |
| Digital Banking and Payment<br>Technologies | Smart Contract<br>Development and<br>Decentralized<br>Applications | Conversational AI                                        |
| Programming for FinTech<br>Applications     | Cryptography and<br>Blockchain Security                            | Computer Vision and<br>Intelligent Perception<br>Systems |
| Financial Data Analytics                    | Web3 Development and<br>Decentralized Finance<br>(DeFi)            | Responsible AI and<br>Industry Applications              |
| FinTech Project / Internship                | Blockchain Project and<br>Industry Applications                    | Intelligence Systems<br>Project / Internship             |

#### Minor Degree – Vertical I FinTech

| S.<br>No | Subject<br>Code | Subject Name                                | Course<br>Type | Contact<br>Periods | L | T | P | C | SDG      |
|----------|-----------------|---------------------------------------------|----------------|--------------------|---|---|---|---|----------|
| 1        | IT26FT1         | Introduction to Fintech                     | PC             | 3                  | 3 | 0 | 0 | 3 | 8, 9, 10 |
| 2        | IT26FT2         | Digital Banking and<br>Payment Technologies | PC             | 3                  | 3 | 0 | 0 | 3 | 8, 9, 10 |
| 3        | IT26FT3         | Programming for<br>FinTech Applications     | PC             | 3                  | 3 | 0 | 0 | 3 | 8, 9     |
| 4        | IT26FT4         | Financial Data Analytics                    | PC             | 3                  | 3 | 0 | 0 | 3 | 8, 9, 12 |
| 5        | IT26FT5         | FinTech Project /<br>Internship             | PC             | 3                  | 3 | 0 | 0 | 6 | 8, 9, 17 |

### Minor Degree – Vertical II Blockchain and Web3 Technologies

| S. No | Subject Code | Subject Name                                              | Course Type | Contact Periods | L | T | P | C | SDG          |
|-------|--------------|-----------------------------------------------------------|-------------|-----------------|---|---|---|---|--------------|
| 1     | IT26BW1      | Foundations of Blockchain Technology                      | PC          | 3               | 3 | 0 | 0 | 3 | 8, 9, 16     |
| 2     | IT26BW2      | Smart Contract Development and Decentralized Applications | PC          | 3               | 3 | 0 | 0 | 3 | 8, 9, 16     |
| 3     | IT26BW3      | Cryptography and Blockchain Security                      | PC          | 3               | 3 | 0 | 0 | 3 | 9, 16        |
| 4     | IT26BW4      | Web3 Development and Decentralized Finance (DeFi)         | PC          | 3               | 3 | 0 | 0 | 3 | 8, 9, 10     |
| 5     | IT26BW5      | Blockchain Project and Industry Applications              | PC          | 3               | 3 | 0 | 0 | 6 | 8, 9, 16, 17 |

### Minor Degree – Vertical III Intelligent Systems and Applied AI

| S. No | Subject Code | Subject Name                                       | Course Type | Contact Periods | L | T | P | C | SDG          |
|-------|--------------|----------------------------------------------------|-------------|-----------------|---|---|---|---|--------------|
| 1     | IT26IA1      | Large Language Models                              | PC          | 3               | 3 | 0 | 0 | 3 | 4, 8, 9, 10  |
| 2     | IT26IA2      | Conversational AI                                  | PC          | 3               | 3 | 0 | 0 | 3 | 4, 9, 10, 16 |
| 3     | IT26IA3      | Computer Vision and Intelligent Perception Systems | PC          | 3               | 3 | 0 | 0 | 3 | 3, 9, 11     |
| 4     | IT26IA4      | Responsible AI and Industry Applications           | PC          | 3               | 3 | 0 | 0 | 3 | 8, 9, 10, 16 |
| 5     | IT26IA5      | Intelligence Systems Project / Internship          | PC          | 3               | 3 | 0 | 0 | 6 | 8, 9, 17     |

  
**Bos Chairman/IT**

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