# SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY
# (UGC – AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NAAC with 'A' Grade
Kondapur, Ghatkesar, Medchal-Malkajgiri Dist., - 501 301

## B.Tech - CSI (COMPUER SECIENCE AND INFORMATION TECHNOLOGY)

**Course Structure (SCET - R25)**

**Applicable From 2025-26 Admitted Batch**

**I YEAR I SEMESTER**

| S. No. | Course Code | Course Name | Course Area | Periods per week | | | Credits | Scheme of Examination Maximum Marks | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | Internal (CIE) | External (SEE) | Total |
| 1 | 25MA101BS | Matrices and Calculus | BS | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 2 | 25PH102BS | Advanced Engineering Physics | BS | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 3 | 25CS103ES | Programming for Problem Solving | ES | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 4 | 25EE104ES | Basic Electrical Engineering | ES | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 5 | 25ME105ES | Engineering Drawing and Computer Aided Drafting | ES | 2 | 0 | 2 | 3 | 40 | 60 | 100 |
| 6 | 25PH106BS | Advanced Engineering Physics Laboratory | BS | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 7 | 25CS107ES | Programming for Problem Solving Lab | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 8 | 25EE108ES | Basic Electrical Engineering Lab | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 9 | 25CS109ES | Python Programming Laboratory | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| | | Induction program | | | | | | | | |
| **TOTAL** | | | | **14** | **1** | **10** | **20** | **360** | **540** | **900** |

**I YEAR II SEMESTER**

| S. No. | Course Code | Course Name | Course Area | Periods per week | | | Credits | Scheme of Examination Maximum Marks | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | Internal (CIE) | External (SEE) | Total |
| 1 | 25MA201BS | Ordinary Differential Equations and Vector Calculus | BS | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 2 | 25CH202BS | Engineering Chemistry | BS | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 3 | 25CS203ES | Data Structure | ES | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 4 | 25EC204ES | Electronic Devices and Circuits | ES | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 5 | 25EN205HS | English for Skill Enhancement | HS | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 6 | 25CH206BS | Engineering Chemistry Lab | BS | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 7 | 25CS207ES | Data Structure Lab | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 8 | 25EN208HS | English Language and communication skills Lab | HS | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 9 | 25ME209ES | Engineering Workshop | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| 10 | 25CS210ES | IT Workshop | ES | 0 | 0 | 2 | 1 | 40 | 60 | 100 |
| **TOTAL** | | | | **15** | **0** | **10** | **20** | **400** | **600** | **1000** |

## II YEAR I SEMESTER

| S.No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | 25MA301BS | Mathematical and Statistical Foundations | 3 | 0 | 0 | 3 |
| 2. | 25IT302PC | Computer Organization and Microprocessor | 3 | 0 | 0 | 3 |
| 3. | 25IT303PC | Java Programming | 3 | 0 | 0 | 3 |
| 4. | 25IT304PC | Operating Systems | 3 | 0 | 0 | 3 |
| 5. | 25IT305PC | Introduction to IoT | 3 | 0 | 0 | 3 |
| 6. | 25MA306PC | Computational Mathematics Lab | 0 | 0 | 2 | 1 |
| 7. | 25IT307PC | Java Programming Lab | 0 | 0 | 2 | 1 |
| 8. | 25IT308PC | Operating Systems Lab | 0 | 0 | 2 | 1 |
| 9. | 25IT309PC | Internet of Things Lab | 0 | 0 | 2 | 1 |
| 10. | 25IT310SD | Data Visualization-R Programming/Power BI/ Tableau/Google Chart | 0 | 0 | 2 | 1 |
| | | **Total Credits** | **15** | **0** | **10** | **20** |

## II YEAR II SEMESTER

| S.No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | 25CS401PC | Discrete Mathematics | 3 | 0 | 0 | 3 |
| 2. | 25IT402PC | Data Communications and Computer Networks | 3 | 0 | 0 | 3 |
| 3. | 25IT403PC | Formal Languages and Automata Theory | 3 | 0 | 0 | 3 |
| 4. | 25IT404PC | Database Management Systems | 3 | 0 | 0 | 3 |
| 5. | 25IT405PC | Web Programming | 3 | 0 | 0 | 3 |
| 6. | 25MS406HS | Innovation and Entrepreneurship | 2 | 0 | 0 | 2 |
| 7. | 25IT407PC | Computer Networks lab | 0 | 0 | 2 | 1 |
| 8. | 25IT408PC | Database Management Systems Lab | 0 | 0 | 2 | 1 |
| 9. | 25IT409PC | Web Programming Lab | 0 | 0 | 2 | 1 |
| 10. | 25IT410SD | Node JS/ React JS/ Django, UI Design - Flutter | 0 | 0 | 2 | 1 |
| 11. | 25VA400HS | Indian Knowledge System | 1 | 0 | 0 | 1 |
| | | **Total Credits** | **18** | **0** | **08** | **22** |

**III YEAR I SEMESTER (27 Hours)**

| S. No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | 25CI501PC | Machine Learning | 3 | 0 | 0 | 3 |
| 2. | 25CI502PC | Algorithm Design and Analysis | 3 | 0 | 0 | 3 |
| 3. | 25CI503PC | Mobile Application Development | 3 | 0 | 0 | 3 |
| 4. | | Professional Elective-I | 3 | 0 | 0 | 3 |
| 5. | | Open Elective-I | 2 | 0 | 0 | 2 |
| 6. | 25CI504PC | Machine Learning Laboratory | 0 | 0 | 2 | 1 |
| 7. | 25CI505PC | Algorithm Design and Analysis Laboratory | 0 | 0 | 2 | 1 |
| 8. | 25CI505PC | Mobile Application Development Laboratory | 0 | 0 | 2 | 1 |
| 9. | 25CI506PC | Field Based Research Project | 0 | 0 | 4 | 2 |
| 10. | 25CI507SD | Full Stack Development | 0 | 0 | 2 | 1 |
| 11. | 25VA500HS/ 25VA501HS | Gender Sensitization*/Human Values and Professional Ethics* | 1 | 0 | 0 | 0.5+0.5 |
| | | **Total Credits** | **15** | **0** | **12** | **21** |

***Note: For the courses Gender Sensitization and Human Values and Professional Ethics** - one hour of instruction will be conducted on alternate weeks. For example, if a one-hour class for Gender Sensitization is conducted this week, then a one-hour class for Human Values and Professional Ethics will be conducted in the following week.

**III YEAR II SEMESTER (25 Hours)**

| S. No | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | 25CI601PC | Software Engineering | 3 | 0 | 0 | 3 |
| 2. | 25CI602PC | Compiler Design | 3 | 0 | 0 | 3 |
| 3. | 25MS603HS | Business Economics and Financial Analysis | 3 | 0 | 0 | 3 |
| 4. | | Professional Elective-II | 3 | 0 | 0 | 3 |
| 5. | | Open Elective-II | 2 | 0 | 0 | 2 |
| 6. | 25CI604PC | Software Engineering Laboratory | 0 | 0 | 2 | 1 |
| 7. | 25CI605PC | Compiler Design Laboratory | 0 | 0 | 2 | 1 |
| 8. | 25CI606PC | Development Operations (DevOps) Laboratory | 0 | 0 | 2 | 1 |
| 9. | 25EN607HS | English for Employability Skills Lab | 0 | 0 | 2 | 1 |
| 10. | 25CI608SD | Big data-Spark | 0 | 0 | 2 | 1 |
| 11. | 25VA600ES | Environmental Science | 1 | 0 | 0 | 1 |
| | | **Total Credits** | **15** | **0** | **10** | **20** |

**IV YEAR I SEMESTER (25 Hours)**

| S. No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | 25CI701PC | Information Security | 3 | 0 | 0 | 3 |
| 2. | 25CI702PC | Deep Learning | 3 | 0 | 0 | 3 |
| 3. | 25MS703HS | Fundamentals of Management | 3 | 0 | 0 | 3 |
| 4. | | Professional Elective-III | 3 | 0 | 0 | 3 |
| 5. | | Professional Elective-IV | 3 | 0 | 0 | 3 |
| 6. | | Open Elective – III | 2 | 0 | 0 | 2 |
| 7. | 25CI704PC | Information Security Laboratory | 0 | 0 | 2 | 1 |
| 8. | 25CI705PC | Deep Learning Laboratory | 0 | 0 | 2 | 1 |
| 9. | 25CI706PC | Industry Oriented Mini Project/ Internship | 0 | 0 | 4 | 2 |
| | | **Total Credits** | **17** | **0** | **08** | **21** |

**IV YEAR II SEMESTER (48 Hours)**

| S. No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1. | | Professional Elective – V | 3 | 0 | 0 | 3 |
| 2. | | Professional Elective – VI | 3 | 0 | 0 | 3 |
| 3. | 25CI801PC | Project Work | 0 | 0 | 42 | 14 |
| | | **Total Credits** | **6** | **0** | **42** | **20** |

| Professional Electives | | | | | | |
|---|---|---|---|---|---|---|
| | **PE1** | **PE2** | **PE3** | **PE4** | **PE5** | **PE6** |
| **1** | Distributed system | Cloud computing | Distributed database | Scalable architecture for Large Applications | High Performance Computing | Human Computer Interaction |
| **2** | Artificial Intelligence | Data analytics | Data mining | Data engineering with python | Reinforcement Learning | Generative AI |
| **3** | Number theory& Cryptography | Web security | Vulnerability assessments & Penetration Testing | Secure coding principles | Blockchain technology | Digital forensics |
| **4** | Internet of Things | Embedded Systems | Robotic Process Automation | Quantum Computing | Web of Things | Augmented Reality and Virtual Reality |
| **5** | Mobile Application Security | Cyber Laws | Vulnerability Assessment & Penetration Testing | Digital Water Marking and Steganography | Natural Language Processing | Green Computing |

## OPEN ELECTIVES

**Open Elective-I:**

| | |
|---|---|
| 1 | Object Oriented Programming through Java |
| 2 | Mathematics for Machine Learning |

**Open Elective-II:**

| | |
|---|---|
| 1 | Artificial Intelligence |
| 2 | Internet of Things |

**Open Elective-III:**

| | |
|---|---|
| 1 | Embedded Systems |
| 2 | Natural Language Processing |