# JERUSALEM COLLEGE OF ENGINEERING
**(An Autonomous Institution)**
## Approved by AICTE & Affiliated to Anna University
## Accredited by NAAC with 'A' Grade
### Chennai – 600 100



## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

# CURRICULUM

## REGULATION 2023
## CHOICE BASED CREDIT SYSTEM

# JERUSALEM COLLEGE OF ENGINEERING
### (AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
### B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS
### REGULATION 2023
### CHOICE BASED CREDIT SYSTEM
### I TO VIII SEMESTERS CURRICULUM AND SYLLABI

### COURSE SUMMARY SHEET

| S.No | Category | Credits as per Semester | | | | | | | | Total Credits |
|------|----------|----|----|-----|----|----|----|-----|------|---------------|
|      |          | I  | II | III | IV | V  | VI | VII | VIII |               |
| 1 | HS | 4 | 4 | 2 | 2 | - | - | 1 | - | 13 |
| 2 | BS | 10 | 9 | 3 | 3 | 3 | - | - | - | 28 |
| 3 | ES | 8 | 3 | - | - | - | - | - | - | 11 |
| 4 | PC | - | 5 | 15 | 12 | 13 | 12 | - | 10 | 67 |
| 5 | PE | - | - | - | 3 | 3 | 6 | 6 | - | 18 |
| 6 | OE | - | - | - | 3 | 3 | 3 | 3 | - | 12 |
| 7 | EEC | - | 2 |  | 3 | 2 | 3 | 3 | - | 13 |
| TOTAL | | 22 | 23 | 20 | 26 | 24 | 24 | 13 | 10 | 162 |

# JERUSALEM COLLEGE OF ENGINEERING
### (AN AUTONOMOUS INSTITUTION AFFILIATED ANNA UNIVERSITY, CHENNAI)
## B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS
## REGULATION 2023
## CHOICE BASED CREDIT SYSTEM
## I TO VIII SEMESTERS CURRICULUM AND SYLLABI

## SEMESTER 1

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JHS2121 | English for Communicative Competence | I | HS | 4 | 2 | 0 | 2 | 3 |
| 2 | JGE2102 | Heritage of Tamils | T | HS | 1 | 1 | 0 | 0 | 1 |
| 3 | JMA2121 | Matrices and Calculus | I | BS | 4 | 2 | 0 | 2 | 3 |
| 4 | JPH2101 | Engineering Physics 1 | T | BS | 3 | 3 | 0 | 0 | 3 |
| 5 | JCY2101 | Engineering Chemistry | T | BS | 3 | 3 | 0 | 0 | 3 |
| 6 | JGE2101 | Basic Engineering | T | ES | 3 | 3 | 0 | 0 | 3 |
| 7 | JCS2121 | Programming in C | I | ES | 5 | 3 | 0 | 2 | 4 |
| 8 | JPC2111 | Engineering Physics and Chemistry Laboratory | P | BS | 2 | 0 | 0 | 2 | 1 |
| 9 | JGE2111 | Basic Engineering Laboratory | P | ES | 2 | 0 | 0 | 2 | 1 |
| | | TOTAL | | | 27 | 17 | 0 | 10 | 22 |

## SEMESTER 2

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JHS2221 | English for Science and Technology | I | HS | 4 | 2 | 0 | 2 | 3 |
| 2 | JGE2202 | Tamils and Technology | T | HS | 1 | 1 | 0 | 0 | 1 |
| 3 | JMA2221 | Statistics for Engineers | I | BS | 4 | 2 | 0 | 2 | 3 |
| 4 | JPH2201 | Engineering Physics 2 | T | BS | 3 | 3 | 0 | 0 | 3 |
| 5 | JCY2201 | Environmental Science and Sustainability | T | BS | 2 | 2 | 0 | 0 | 2 |
| 6 | JGE2221 | Engineering Graphics | I | ES | 4 | 2 | 0 | 2 | 3 |
| 7 | JCS2201 | Python Programming | T | PC | 3 | 3 | 0 | 0 | 3 |
| 8 | JPC2211 | Engineering Physics and Environmental Science Laboratory | P | BS | 2 | 0 | 0 | 2 | 1 |
| 9 | JCS2211 | Python Programming Laboratory | P | PC | 4 | 0 | 0 | 4 | 2 |
| 10 | JGE2241 | Gaming and Crafts studio | P | EEC | 4 | 0 | 0 | 4 | 2 |
| | | TOTAL | | | 31 | 15 | 0 | 16 | 23 |

# B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS
## REGULATION 2023
## SEMESTER 3

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JMA2302 | Mathematical Foundations for Computer Science | T | BS | 4 | 2 | 2 | 0 | 3 |
| 2 | | Data Structures and Algorithms | T | PC | 3 | 3 | 0 | 0 | 3 |
| 3 | | Introduction to Business systems | T | PC | 3 | 3 | 0 | 0 | 3 |
| 4 | | Object Oriented Programming | T | PC | 3 | 3 | 0 | 0 | 3 |
| 5 | | Digital Principles and Computer Organization | I | PC | 5 | 3 | 0 | 2 | 4 |
| 6 | JNC2361 | Non-Credit Mandatory Course 1 | T | NCM | 3 | 3 | 0 | 0 | - |
| 7 | | Business Communication Laboratory 1 | P | HS | 4 | 0 | 0 | 4 | 2 |
| 8 | | Object Oriented Programming Laboratory | P | PC | 4 | 0 | 0 | 4 | 2 |
| 9 | JPT2041 | Soft Skill and Aptitude | P | EEC | 2 | 0 | 0 | 2 | * |
| | | TOTAL | | | 31 | 17 | 2 | 12 | 20 |

**\*Only Internal Assessment**

## SEMESTER 4

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JMA2402 | Applied Linear Algebra | T | BS | 4 | 2 | 2 | 0 | 3 |
| 2 | | Database Management systems | T | PC | 3 | 3 | 0 | 0 | 3 |
| 3 | | Operating systems | I | PC | 5 | 3 | 0 | 2 | 4 |
| 4 | | Fundamentals of Management | T | PC | 3 | 3 | 0 | 0 | 3 |
| 5 | - | Professional Elective 1 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 6 | - | Open Elective 1 | T | OE | 3 | 3 | 0 | 0 | 3 |
| 7 | | Database Management systems Laboratory | P | PC | 4 | 0 | 0 | 4 | 2 |
| 8 | | Business Communication Laboratory 2 | P | HS | 4 | 0 | 0 | 4 | 2 |
| 9 | JPT2041 | Soft Skills and Aptitude | P | EEC | 2 | 0 | 0 | 2 | 1 |
| 10 | JGE2442 | Advanced IT Infrastructure Laboratory | P | EEC | 4 | 0 | 0 | 4 | 2 |
| | | TOTAL | | | 35 | 17 | 2 | 16 | 26 |

# SEMESTER 5

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JMA2501 | Optimization Techniques | T | BS | 4 | 2 | 2 | 0 | 3 |
| 2 | | Computer networks | T | PC | 3 | 3 | 0 | 0 | 3 |
| 3 | | Object Oriented Software Engineering | I | PC | 5 | 3 | 0 | 2 | 4 |
| 4 | | Automata Theory and Compiler Design | I | PC | 5 | 3 | 0 | 2 | 4 |
| 5 | - | Professional Elective 2 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 6 | - | Open Elective 2 | T | OE | 3 | 3 | 0 | 0 | 3 |
| 7 | | Computer networks Laboratory | P | PC | 4 | 0 | 0 | 4 | 2 |
| 8 | JPT2042 | Technical Skills and Aptitude | P | EEC | 2 | 0 | 0 | 2 | * |
| 9 | JGE2542 | MERN STACK Development Laboratory | P | EEC | 4 | 0 | 0 | 4 | 2 |
| | | TOTAL | | | 33 | 17 | 2 | 14 | 24 |

**\*Only Internal Assessment**

# SEMESTER 6

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JCW2601 | Financial Cost and Accounting | T | PC | 3 | 3 | 0 | 0 | 3 |
| 2 | JCW2602 | Business Analytics | T | PC | 3 | 3 | 0 | 0 | 3 |
| 3 | | Data and information security | I | PC | 5 | 3 | 0 | 2 | 4 |
| 4 | - | Professional Elective 3 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 5 | - | Professional Elective 4 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 6 | - | Open Elective 3 | T | OE | 3 | 3 | 0 | 0 | 3 |
| 7 | JCW2611 | Business Analytics Laboratory | P | PC | 4 | 0 | 0 | 4 | 2 |
| 8 | JPT2042 | Technical Skills and Aptitude | P | EEC | 2 | 0 | 0 | 2 | 1 |
| 9 | JGE2642 | Computational Intelligence Laboratory | P | EEC | 4 | 0 | 0 | 4 | 2 |
| | | TOTAL | | | 30 | 18 | 0 | 12 | 24 |

## SEMESTER 7

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | - | Professional Elective 5 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 2 | - | Professional Elective 6 | T | PE | 3 | 3 | 0 | 0 | 3 |
| 3 | - | Open Elective 4 | T | OE | 3 | 3 | 0 | 0 | 3 |
| 4 | JNC2761 | Non-Credit Mandatory Course 2 | T | NCM | 3 | 3 | 0 | 0 | - |
| 5 | JHS2741 | Entrepreneurship for Engineers | P | HS | 2 | 0 | 0 | 2 | 1 |
| 6 | JCW2741 | Comprehension and Technical Seminar | P | EEC | 2 | 0 | 0 | 2 | 1 |
| 7 | JCW2742 | Internship | P | EEC | - | - | - | 4** | 2 |
| **TOTAL** | | | | | **16** | **12** | **0** | **8** | **13** |

**\*\* Internship of one month must be undertaken in industry through semester 4, 5 and 6 leading to 2 credit in semester 7**

## SEMESTER 8

| S. No | COURSE CODE | COURSE TITLE | T/P/I | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|
| 1 | JCW2831 | Project Work | P | PC | 20 | 0 | 0 | 20 | 10 |
| **TOTAL** | | | | | **20** | **0** | **0** | **20** | **10** |

# OPEN ELECTIVES

## OPEN ELECTIVES – I

| S.NO | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| 1. | JCW1101 | Object Oriented Programming Concepts | OE | 3 | 3 | 0 | 0 | 3 |
| 2. | JCW1102 | Basics of Business system | OE | 4 | 2 | 0 | 2 | 3 |

## OPEN ELECTIVES – II

| S.No | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| 1. | JCW1103 | Web Technology | OE | 3 | 3 | 0 | 0 | 3 |
| 2. | JCW1104 | Basics of Ethical Hacking | OE | 3 | 3 | 0 | 0 | 3 |

## OPEN ELECTIVES – III

| S.No | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| 1. | JCW1105 | Essentials of Software Project Management | OE | 3 | 3 | 0 | 0 | 3 |
| 2. | JCW1106 | Fundamentals of Big Data | OE | 3 | 3 | 0 | 0 | 3 |

## OPEN ELECTIVES – IV

| S.No. | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| 1. | JCW1107 | Basics of Block Chain | OE | 3 | 3 | 0 | 0 | 3 |
| 2. | JCW1108 | Computer Graphics Fundamentals | OE | 3 | 3 | 0 | 0 | 3 |