

**B. Tech. Degree**  
IN  
**COMPUTER SCIENCE AND ENGINEERING**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**SYLLABUS  
FOR  
CREDIT BASED CURRICULUM**

**NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY  
KARAİKAL – 609609  
INDIA**

### THIRD SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>                    | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|--|----------|----------|----------|-----------|
| MA203                | Discrete Mathematics                   | 3        | 0        | 0        | 3         |
| CS201                | Data Structures                        | 3        | 0        | 0        | 3         |
| CS203                | Computer Organization and Architecture | 3        | 0        | 0        | 3         |
| CS205                | Object Oriented Programming            | 3        | 0        | 0        | 3         |
| CS207                | Digital Computer Fundamentals          | 3        | 0        | 0        | 3         |
| CS209                | Data Communication & Networks          | 3        | 0        | 0        | 3         |
| CS211                | Data Structures Laboratory             | 0        | 0        | 3        | 2         |
| CS213                | Object Oriented Programming Laboratory | 0        | 0        | 3        | 2         |
| <b>TOTAL CREDITS</b> |  |          |          |          | <b>22</b> |

### FOURTH SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>                            | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|--|----------|----------|----------|-----------|
| MA204                | Probability Theory                             | 3        | 0        | 0        | 3         |
| CS202                | Software Engineering                           | 3        | 0        | 0        | 3         |
| CS204                | Automata and Formal Languages                  | 3        | 0        | 0        | 3         |
| CS206                | Design and Analysis of Algorithms              | 3        | 0        | 0        | 3         |
| CS208                | Microprocessor and Microcontrollers            | 3        | 0        | 0        | 3         |
| CS210                | Computer Networks Laboratory                   | 0        | 0        | 3        | 2         |
| CS212                | Algorithms Laboratory                          | 0        | 0        | 3        | 2         |
| CS214                | Microprocessor and Microcontrollers Laboratory | 0        | 0        | 3        | 2         |
| <b>TOTAL CREDITS</b> |  |          |          |          | <b>21</b> |

### FIFTH SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>                   | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|---------------------------------------|----------|----------|----------|-----------|
| CS301                | Database Management System            | 3        | 0        | 0        | 3         |
| CS303                | Operating Systems                     | 3        | 0        | 0        | 3         |
| CS305                | Web Technology                        | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 1                            | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 2                            | 3        | 0        | 0        | 3         |
| CS10XX               | Global Elective 1                     | 3        | 0        | 0        | 3         |
| CS307                | Database Management System Laboratory | 0        | 0        | 3        | 2         |
| CS309                | Operating Systems Laboratory          | 0        | 0        | 3        | 2         |
| <b>TOTAL CREDITS</b> |                                       |          |          |          | <b>22</b> |

### SIXTH SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>                  | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|--------------------------------------|----------|----------|----------|-----------|
| CS302                | Principles of Compiler Design        | 3        | 0        | 0        | 3         |
| CS304                | UNIX System Programming              | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 3                           | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 4                           | 3        | 0        | 0        | 3         |
| CS10XX               | Global Elective 2                    | 3        | 0        | 0        | 3         |
| HM302                | Professional Ethics and Human Values | 2        | 0        | 0        | 2         |
| CS306                | Compiler Design Laboratory           | 0        | 0        | 3        | 2         |
| CS308                | UNIX System Programming Laboratory   | 0        | 0        | 3        | 2         |
| <b>TOTAL CREDITS</b> |                                      |          |          |          | <b>21</b> |

### SEVENTH SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>               | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|-----------------------------------|----------|----------|----------|-----------|
| HM401                | Industrial Economics & Management | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 5                        | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 6                        | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 7                        | 3        | 0        | 0        | 3         |
| CS10XX               | Global Elective 3                 | 3        | 0        | 0        | 3         |
| CS497                | Project Work Phase – I            | 0        | 0        | 0        | 2         |
| <b>TOTAL CREDITS</b> |                                   |          |          |          | <b>17</b> |

### EIGHTH SEMESTER

| <b>CODE</b>          | <b>COURSE TITLE</b>   | <b>L</b> | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------------|-----------------------|----------|----------|----------|-----------|
| CS5XX                | Elective 8            | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 9            | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 10           | 3        | 0        | 0        | 3         |
| CS5XX                | Elective 11           | 3        | 0        | 0        | 3         |
| CS498                | Project Work Phase–II | 0        | 0        | 0        | 4         |
| <b>TOTAL CREDITS</b> |                       |          |          |          | <b>16</b> |

### Summary

| <b>Semester</b> | <b>III</b> | <b>IV</b> | <b>V</b>  | <b>VI</b> | <b>VII</b> | <b>VIII</b> | <b>Total</b> |
|-----------------|------------|-----------|-----------|-----------|------------|-------------|--------------|
| <b>Credits</b>  | <b>22</b>  | <b>21</b> | <b>22</b> | <b>21</b> | <b>17</b>  | <b>16</b>   | <b>119</b>   |

## **LIST OF DEPARTMENT ELECTIVES**

### **LIST OF ELECTIVE FOR FIFTH SEMESTER (TWO)**

1. CS501 Graph Theory
2. CS503 Wireless Adhoc Networks
3. CS505 Programming with C++
4. CS507 Artificial Intelligence
5. CS509 Computer Graphics and Vision

### **LIST OF ELECTIVE FOR SIXTH SEMESTER (TWO)**

1. CS502 Object Oriented Analysis and Design
2. CS504 Software Testing
3. CS506 Advanced Computer Architecture
4. CS508 Mobile Computing
5. CS510 Distributed Systems

### **LIST OF ELECTIVE FOR SEVENTH SEMESTER (THREE)**

1. CS511 Internet of Things
2. CS513 Mobile Application Development
3. CS515 Network Programming
4. CS517 Python Programming
5. CS519 Design and Analysis of Parallel Algorithms
6. CS521 Functional Programming Languages
7. CS523 Computer and Network Security
8. CS525 Knowledge Engineering
9. CS527 Data Warehousing and Data Mining

### **LIST OF ELECTIVE FOR EIGHTH SEMESTER (FOUR)**

1. CS512Advanced Database Management Systems
2. CS514Machine Learning and Soft Computing
3. CS516Big Data Analytics
4. CS518R Programming
5. CS520Cross Platform Application Development
6. CS522 Management Information Systems
7. CS524 Real Time Systems
8. CS526 Enterprise Resource Planning
9. CS528 Natural Language Processing
10. CS530Cloud Computing

### **LIST OF GLOBAL ELECTIVES (Offered for students other than CSE)**

1. CS1001 Cloud Computing
2. CS1002 Mobile Communication
3. CS1003 Information Security
4. CS1004 Introduction to Data Structures
5. CS1005 Operating System Concepts
6. CS1006 Object Oriented Programming with C++
7. CS1007 Web of Things
8. CS1008 Computer Networks