# SCHEME OF INSTRUCTION

NBKR INSTITUTE OF SCIENCE & TECHNOLOGY: VIDYANAGAR (AUTONOMOUS)

**COMPUTER SCIENCE & ENGINEERING – OVERALL SCHEME OF INSTRUCTION (With effect from the academic year( 2023-24) R23**

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| **S.No** | **II B.Tech CSE** | **II B.Tech CSE (DS)** | **II B.Tech CSE (AI&ML)** |
|  | **II sem** | **L** | **T** | **P** | **C** | **II sem** | **L** | **T** | **P** | **C** | **II sem** | **L** | **T** | **P** | **C** |
|  1 | Managerial Economics and Financial Analysis 23BS22T4 | 2 | 0 | 0 | 2 | Optimization Techniques23ES22T2 | 2 | 0 | 0 | 2 | Optimization Techniques23ES22T2 | 2 | 0 | 0 | 2 |
| 2 | Probability & Statistics23BS22T2 | 3 | 0 | 0 | 3 | Statistical methods for Data science 23BS22T3 | 3 | 0 | 0 | 3 | Probability & Statistics23BS22T2 | 3 | 0 | 0 | 3 |
| 3 | Operating Systems23CS22T1 | 3 | 0 | 0 | 3 | Data Engineering23CD22T1 | 3 | 0 | 0 | 3 | Machine Learning23CA22T1 | 3 | 0 | 0 | 3 |
| 4 | Database Management Systems 23AD22T1 | 3 | 0 | 0 | 3 | Database Management Systems23CS22T2 | 3 | 0 | 0 | 3 | Database Management Systems23AD22T1 | 3 | 0 | 0 | 3 |
| 5 | Software Engineering23CS22T2 | 3 | 0 | 0 | 3 | Digital Logic and Computer Organization 23AD22T2 | 3 | 0 | 0 | 3 | Digital Logic and ComputerOrganization 23IT21T1 | 3 | 0 | 0 | 3 |
| 6 | Operating Systems Lab23CS22P1 | 0 | 0 | 3 | 1.5 | Data Engineering Lab23CD22P1 | 0 | 0 | 3 | 1.5 | Machine Learning Lab 23CA22P1 | 0 | 0 | 3 | 1.5 |
| 7 | Database Management Systems Lab 23CS22P2 | 0 | 0 | 3 | 1.5 | Database Management Systems Lab 23CS22P2 | 0 | 0 | 3 | 1.5 | Database Management Systems Lab 23CS22P2 | 0 | 0 | 3 | 1.5 |
| 8 | Full Stack Development-123CS22SC | 0 | 1 | 2 | 2 | Exploratory Data Analysis with Python 23CD22SC | 0 | 1 | 2 | 2 | Full Stack Development-123CS22SC | 0 | 1 | 2 | 2 |
| 9 | Design Thinking & Innovation23ES22T1 | 1 | 0 | 2 | 2 | Design Thinking & Innovation23ES22T1 | 1 | 0 | 2 | 2 | Design Thinking & Innovation 23ES22T1 | 1 | 0 | 2 | 2 |
|  | **TOTAL** | **15** | **1** | **10** | **21** | **TOTAL** | 15 | 1 | 10 | 21 | **TOTAL** | 15 | 1 | 10 | 21 |
| **S.No** | **III B.Tech CSE****II sem R-20** | **L** | **T** | **P** | **C** |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| 1 | Machine Learning Applications 20CS3201 | 3 | 0 | 0 | 3 |  |  |  |  |  |  |  |  |  |  |
| 2 | Internet of Things 20IT3201 | 3 | 0 | 0 | 3 |  |  |  |  |  |  |  |  |  |  |
| 3 | Cryptography and Network Security 20IT3202 | 3 | 0 | 0 | 3 |  |  |  |  |  |  |  |  |  |  |
| 4 | Cloud Computing 20IT32J1 | 3 | 0 | 0 | 3 |  |  |  |  |  |  |  |  |  |  |
| 5 | Software Project Management 20IT32E1 | 3 | 0 | 0 | 3 |  |  |  |  |  |  |  |  |  |  |
| 6 | Cryptography and Network Security Laboratory 20IT32P2 | 0 | 0 | 3 | 1.5 |  |  |  |  |  |  |  |  |  |  |
| 7 | Machine Learning Applications Laboratory 20CS32P1 | 0 | 0 | 3 | 1.5 |  |  |  |  |  |  |  |  |  |  |
| 8 | Internet of Things Laboratory 20IT32P1 | 0 | 0 | 3 | 1.5 |  |  |  |  |  |  |  |  |  |  |
| 9 | Advanced Aptitude and Reasoning Skills 20MC3201 | 2 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  |  |
| 10 | Mobile App Development 20IT32SC | 1 | 0 | 2 | 2 |  |  |  |  |  |  |  |  |  |  |
|  | **TOTAL** | **18** | **0** | **11** | **21.5** |  |  |  |  |  |  |  |  |  |  |

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|  **CSE III B.Tech II sem (R20)** |  **CSE III B.Tech II sem (R20)** |  **CSE III B.Tech II sem (R20)** |
| ***JOB ORIENTED ELECTIVE – I***[20IT32J1- Cloud Computing](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Job-oriented%20Elective%20%20I/20IT32J1%20-%20CLOUD%20COMPUTING.docx)      [20IT32J2- Software Testing Tools](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Job-oriented%20Elective%20%20I/20IT32J2%20-%20SOFTWARE%20TESTING%20TOOLS.docx) | ***PROFESSIONAL ELECTIVE – II***[20AD32E1- Natural Language Processing.](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20AD32E1%20-%20NATURAL%20LANGUAGE%20PROCESSING.docx)[20IT32E1- Software Project Management](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E1%20-%20SOFTWARE%20PROJECT%20MANAGEMENT.docx)[20IT32E2- Software Architecture](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E2%20-%20SOFTWARE%20ARCHITECTURE.docx)[20IT32E3- Social Information Networks](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E3%20-%20SOCIAL%20INFORMATION%20NETWORKS.docx) | ***SKILL-ORIENTED COURSES***[20IT32SC- Mobile App Development Laboratory](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Skill-oriented%20Course/20IT32SC%20-%20MOBILE%20APP%20DEVELOPMENT%20LABORATORY.docx) |

**OPEN ELECTIVEs offered by CSE to other Departments**

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| **EEE III B.Tech II sem (R20)** |
| [20CS32O1- Software Engineering](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/EEE/32/OPEN%20ELECTIVE-II/20CS32O1%20-%20SOFTWARE%20ENGINEERING.docx)[20CS32O2- Operating Systems](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/EEE/32/OPEN%20ELECTIVE-II/20CS32O2%20-%20OPERATING%20SYSTEMS.docx)   |

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|  **IT and AI&DS III B.Tech II sem (R20)** |  **IT and AI&DS III B.Tech II sem (R20)** |  **IT and AI&DS III B.Tech II sem (R20)** |
| ***JOB ORIENTED ELECTIVE – I***[20IT32J1- Cloud Computing](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Job-oriented%20Elective%20%20I/20IT32J1%20-%20CLOUD%20COMPUTING.docx)      [20IT32J2- Software Testing Tools](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Job-oriented%20Elective%20%20I/20IT32J2%20-%20SOFTWARE%20TESTING%20TOOLS.docx) | ***PROFESSIONAL ELECTIVE – II***[20AD32E1- Natural Language Processing.](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20AD32E1%20-%20NATURAL%20LANGUAGE%20PROCESSING.docx)[20IT32E1- Software Project Management](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E1%20-%20SOFTWARE%20PROJECT%20MANAGEMENT.docx)[20IT32E2- Software Architecture](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E2%20-%20SOFTWARE%20ARCHITECTURE.docx)[20IT32E3- Social Information Networks](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Professional%20Elective%20%20II/20IT32E3%20-%20SOCIAL%20INFORMATION%20NETWORKS.docx) | ***SKILL-ORIENTED COURSES***[20IT32SC- Mobile App Development Laboratory](http://192.168.45.222/Syllabi/2020%20Regulations/B.Tech/CSE/32/Skill-oriented%20Course/20IT32SC%20-%20MOBILE%20APP%20DEVELOPMENT%20LABORATORY.docx) |