



COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution)
(Affiliated to Anna University, Chennai & Approved by AICTE, New Delhi)
Established in 1956, A Unit of V.Rangasamy Naidu Educational Trust
CIVIL AERODROME POST, COIMBATORE-641 014, TAMILNADU, INDIA

Criteria 1 – Curricular Aspects

Key Indicator: 1.2 Academic Flexibility

1.2.1: Percentage of new courses introduced out of the total number of courses across all programmes offered during the last five years

Contents

| | | |
|----|--|----------------------|
| 1. | Summary of new courses introduced and offered courses across all the programmes in the last five years | Open |
| 2. | New Courses Highlighted in Syllabus | Open |
| 3. | Academic Council meeting | Open |
| 4. | Minutes of Board of Studies meeting | Open |

1.2.1 Percentage of new courses introduced out of the total number of courses across all programmes offered during the last five years

| Name of the programme | Name of the Course | Course Code | Year of introduction (during the last five years) |
|---|--|-------------|---|
| Year- 1 (2023-2024) | | | |
| BE Civil Engineering | Geo-Informatics Laboratory | 23CE523 | 2023- 2024 |
| BE Civil Engineering | Building Information Modelling Laboratory | 23CE623 | 2023- 2024 |
| BE Civil Engineering | Design and Drawing (Concrete & Steel) | 23CE722 | 2023- 2024 |
| BE Civil Engineering | Basics of Structural Dynamics | PEC | 2023- 2024 |
| BE Civil Engineering | Climate change and adaptation | PEC | 2023- 2024 |
| BE Civil Engineering | Marine Pollution and Control | PEC | 2023- 2024 |
| BE Civil Engineering | Instrumental Method of Analysis | PEC | 2023- 2024 |
| BE Civil Engineering | Air and Water Quality Modelling | PEC | 2023- 2024 |
| BE Civil Engineering | Irrigation Engineering | PEC | 2023- 2024 |
| BE Civil Engineering | Remote sensing and GIS | PEC | 2023- 2024 |
| BE Civil Engineering | Advanced Surveying | PEC | 2023- 2024 |
| BE Civil Engineering | Transportation Systems Planning & Management | PEC | 2023- 2024 |
| BE Civil Engineering | Transportation Economics and Finance | PEC | 2023- 2024 |
| BE Civil Engineering | Road Safety Engineering | PEC | 2023- 2024 |
| BE Civil Engineering | Professional Practices for Civil Engineers | PEC | 2023- 2024 |
| BE Civil Engineering | Building Information Modelling | PEC | 2023- 2024 |
| BE Civil Engineering | Ground Improvement Techniques | PEC | 2023- 2024 |
| BE Civil Engineering | Design of Deep Foundation | PEC | 2023- 2024 |
| BE Civil Engineering | Geo Environmental Engineering | PEC | 2023- 2024 |
| BE Civil Engineering | Slope Stability and Landslides | PEC | 2023- 2024 |
| BE Civil Engineering | Earth retaining Structures | PEC | 2023- 2024 |
| BE Civil Engineering | Foundations in Expansive Soils | PEC | 2023- 2024 |
| BE Civil Engineering | Advanced Foundation Engineering | PEC | 2023- 2024 |
| BE Civil Engineering | Reinforced Soil Structures | PEC | 2023- 2024 |
| BE Civil Engineering | Heritage of Tamil | 23FYH121 | 2023- 2024 |
| BE Civil Engineering | Tamil's & Technology | 23FYH222 | 2023- 2024 |
| BE Civil Engineering | Alternative Building Materials from Waste | OCC | 2023- 2024 |
| BE Civil Engineering | Sustainability in Construction | OCC | 2023- 2024 |
| BE Civil Engineering | Detailing of Steel Structures Using TEKLA | OCC | 2023- 2024 |
| BE Civil Engineering | Pre – Engineered Building Detailing | OCC | 2023- 2024 |
| BE Civil Engineering | Basic Plumbing | OCC | 2023- 2024 |
| BE Civil Engineering | Green Building Rating | OCC | 2023- 2024 |
| BE Civil Engineering | Drone Surveying | OCC | 2023- 2024 |
| BE Civil Engineering | Archaeology of India | OCC | 2023- 2024 |
| BE Civil Engineering | Retrofitting and Rehabilitation of Heritage Structures | OCC | 2023- 2024 |
| BE Civil Engineering | Soft Skills – II – Design Thinking | 23MC301 | 2023- 2024 |
| BE Civil Engineering | Community Service and Engineering | 23MC402 | 2023- 2024 |
| BE Civil Engineering | Seminar and Technical Writing | 23MC502 | 2023- 2024 |
| BE Civil Engineering | Hackathon | 23MC601 | 2023- 2024 |
| BE Mechanical Engineering | Advanced Solid State Joining | 19MEOC16 | 2023- 2024 |
| BE Mechanical Engineering | Design of Electric vehicle (Four wheeler) | 19MEOC17 | 2023- 2024 |
| BE Mechanical Engineering | Geometric Dimensioning and Tolerancing in Design | 19MEOC18 | 2023- 2024 |
| BE Mechanical Engineering | Heating Ventilation and Air-Conditioning System Design | 19MEOC19 | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | OOPS and C++ Laboratory | 23EE323 | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Human Values and Professional Ethics | 23MC321 | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Design Thinking | 23MC322 | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Induction Programme | 23MC301 | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Community Service and Engineering | MC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Power System Simulation Laboratory | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Seminar and Technical Writing | OCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Electric Vehicles | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Power and Energy Laboratory | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Electric Vehicle Laboratory | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | IoT Laboratory | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Hackathon | OCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Industrial Automation Laboratory | PCC | 2023- 2024 |
| B.E.Electrical and Electronics Engineering | Reverse Engineering and Product Realization Laboratory | PCC | 2023- 2024 |
| B.E.Electronics and Communication Engineering | Introduction to Machine Learning | 19ECE85 | 2023- 2024 |
| B.E.Electronics and Communication Engineering | Problem Solving Skills and Practices | 23EC122 | 2023- 2024 |
| B.E.Electronics and Communication Engineering | Electrical Engineering and Instrumentation Laboratory | 23EC121 | 2023- 2024 |
| B.E.Electronics and Communication Engineering | Devices and Circuits Laboratory | 23EC222 | 2023- 2024 |
| BE Computer Science Engineering | Front End Web Development | 19CSE03 | 2023- 2024 |
| BE Computer Science Engineering | DevOps | 19CSE08 | 2023- 2024 |
| BE Computer Science Engineering | Cloud Computing | 19CSE07 | 2023- 2024 |
| BE Computer Science Engineering | Open Source Systems and Software | 19CSE04 | 2023- 2024 |
| BE Computer Science Engineering | Cryptocurrency and Blockchain Technologies | 19CSE06 | 2023- 2024 |
| BE Computer Science Engineering | Deep Learning | 19CSE05 | 2023- 2024 |
| BE Computer Science Engineering | Cyber Security | 19CSE09 | 2023- 2024 |
| BE Computer Science Engineering | Heritage of Tamils | 23FYH121 | 2023- 2024 |
| BE Computer Science Engineering | Tamils and Technology | 23FYH222 | 2023- 2024 |
| BE Computer Science Engineering | Java Programming | 23CS314 | 2023- 2024 |
| BE Computer Science Engineering | Java Programming Laboratory | 23CS323 | 2023- 2024 |
| BE Computer Science Engineering | Design Thinking | 23MC322 | 2023- 2024 |
| BE Computer Science Engineering | Design and Analysis of Algorithm | | 2023- 2024 |
| BE Computer Science Engineering | Design and Analysis of Algorithm Laboratory | | 2023- 2024 |
| BE Computer Science Engineering | Web Technology Laboratory | | 2023- 2024 |
| BE Computer Science Engineering | Seminar And Technical Writing | | 2023- 2024 |
| BE Computer Science Engineering | Exploratory Data Analysis Laboratory | | 2023- 2024 |
| BE Computer Science Engineering | Hackathon | | 2023- 2024 |
| BE Computer Science Engineering | Network Security Laboratory | | 2023- 2024 |
| BE Computer Science Engineering | Big Data Analytics Laboratory | | 2023- 2024 |
| BE Computer Science Engineering | Digital Marketing | PE2 | 2023- 2024 |
| BE Computer Science Engineering | Enterprise Resource Management | PE3 | 2023- 2024 |
| BE Computer Science Engineering | Software Project Management | PE5 | 2023- 2024 |
| BE Computer Science Engineering | Recommender Systems | PE7 | 2023- 2024 |
| BE Computer Science Engineering | Engineering Economics and Management | PE8 | 2023- 2024 |
| BE Computer Science Engineering | Customer Relationship and Management | PE9 | 2023- 2024 |

| | | | |
|--|---|-----------|------------|
| BE Computer Science Engineering | Soft Computing | PE10 | 2023- 2024 |
| BE Computer Science Engineering | Multimedia and Animation | PE11 | 2023- 2024 |
| BE Computer Science Engineering | Knowledge Engineering | PE16 | 2023- 2024 |
| BE Computer Science Engineering | Robotic Process Automation | PE18 | 2023- 2024 |
| BE Computer Science Engineering | Quantum Computing | PE19 | 2023- 2024 |
| BE Computer Science Engineering | Cyber Security | PE20 | 2023- 2024 |
| BE Computer Science Engineering | Introduction to Customer Relationship Management | OE1 | 2023- 2024 |
| BE Computer Science Engineering | Fundamentals of Software Engineering | OE2 | 2023- 2024 |
| BE Computer Science Engineering | Internet Programming | OE3 | 2023- 2024 |
| BE Computer Science Engineering | Introduction to Data Warehousing and | OE4 | 2023- 2024 |
| BE Computer Science Engineering | Introduction to Embedded Systems | OE5 | 2023- 2024 |
| B.Tech.Chemical Engineering | Heat Power Engineering | 23CH211 | 2023- 2024 |
| B.Tech.Chemical Engineering | Introduction to Chemical Engineering | 23CH213 | 2023- 2024 |
| B.Tech Information Technology | COMPUTATIONAL THINKING | 23IT214 | 2023- 2024 |
| B.Tech Information Technology | PYTHON PROGRAMMING | 23IT213 | 2023- 2024 |
| B.Tech Information Technology | Design Thinking | 23MC322 | 2023- 2024 |
| B.Tech Information Technology | Data Mining | | 2023- 2024 |
| B.Tech Information Technology | Embedded Systems and IoT | | 2023- 2024 |
| B.Tech Information Technology | Embedded Systems and IoT Lab | | 2023- 2024 |
| B.Tech Information Technology | Data Mining Lab | | 2023- 2024 |
| B.Tech Information Technology | Open Source Systems Lab | | 2023- 2024 |
| B.Tech Information Technology | Artificial Intelligence Laboratory | | 2023- 2024 |
| B.Tech Information Technology | Data Visualization Laboratory | | 2023- 2024 |
| B.Tech Information Technology | Cyber-Physical Systems | | 2023- 2024 |
| B.Tech Information Technology | Full Stack Development | | 2023- 2024 |
| B.Tech Information Technology | Laboratory | | 2023- 2024 |
| B.Tech Information Technology | Big Data Analytics Laboratory | | 2023- 2024 |
| B.Tech Information Technology | DevOps Laboratory | | 2023- 2024 |
| B.Tech Information Technology | Image and Video Analytics | | 2023- 2024 |
| B.Tech Information Technology | for Extended Reality (XR) | | 2023- 2024 |
| B.Tech Information Technology | Cloud Native Application Development | | 2023- 2024 |
| B.Tech Information Technology | Full Stack Development | | 2023- 2024 |
| B.Tech Information Technology | Health Informatics | | 2023- 2024 |
| B.Tech Information Technology | Social Network Analysis | | 2023- 2024 |
| B.Tech Artificial Intelligence & Data Science | Design Thinking | 23MC322 | 2023- 2024 |
| B.Tech Artificial Intelligence & Data Science | Human Values Professional Ethics | 23MC321 | 2023- 2024 |
| M.Sc Software Systems | DevOps & Security Practices in IT | 20MSSOC1 | 2023- 2024 |
| M.Sc. Data Science | Operations Research | 21MDS51 | 2023- 2024 |
| M.Sc. Data Science | Deep Learning | 21MDS52 | 2023- 2024 |
| M.Sc. Data Science | Big Data Computing | 21MDS53 | 2023- 2024 |
| M.Sc. Data Science | Artificial Intelligence | 21MDS54 | 2023- 2024 |
| M.Sc. Data Science | Elective - I (Natural Language Processing) | 21MDS52 | 2023- 2024 |
| M.Sc. Data Science | Deep Learning Laboratory | 21MDS55 | 2023- 2024 |
| M.Sc. Data Science | Big Data Computing Laboratory | 21MDS56 | 2023- 2024 |
| M.Sc. Data Science | Elective Lab - I (Natural Language Processing Laboratory) | 21MDS52 | 2023- 2024 |
| M.Sc. Data Science | Communication Skills | 21MDS57 | 2023- 2024 |
| M.Sc. Data Science | Stochastic Models | 21MDS61 | 2023- 2024 |
| M.Sc. Data Science | Cloud Computing | 21MDS62 | 2023- 2024 |
| M.Sc. Data Science | Data Mining | 21MDS63 | 2023- 2024 |
| M.Sc. Data Science | Software Engineering | 21MDS64 | 2023- 2024 |
| M.Sc. Data Science | Elective- II (Business Intelligence) | 21MDS61 | 2023- 2024 |
| M.Sc. Data Science | Elective- II (Enterprise Computing) | 21MDS62 | 2023- 2024 |
| M.Sc. Data Science | Cloud Computing Laboratory | 21MDS65 | 2023- 2024 |
| M.Sc. Data Science | Data Mining and Visualization Laboratory | 21MDS66 | 2023- 2024 |
| M.Sc. Data Science | Elective Lab - II (Business Intelligence Laboratory) | 21MDS61 | 2023- 2024 |
| M.Sc. Data Science | Elective Lab - II (Enterprise Computing Laboratory) | 21MDS62 | 2023- 2024 |
| M.Sc. Data Science | Hackathon | 21MDS67 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Applied Statistics for Business Decisions | 22MDC31 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Financial Analysis and Reporting | 22MDC32 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Digital Marketing | 22MDC33 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Database Management Systems | 22MDC34 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Object Oriented Programming | 22MDC35 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Digital Marketing Laboratory | 22MDC36 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Database Management Systems Laboratory | 22MDC37 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Object Oriented Programming Laboratory | 22MDC38 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Predictive Analytics | 22MDC41 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Operations Research for Business | 22MDC42 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Financial Engineering | 22MDC43 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Advanced Data Structures and Algorithms | 22MDC44 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Artificial Intelligence | 22MDC45 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Predictive Analytics Laboratory | 22MDC46 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Financial Engineering Laboratory | 22MDC47 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Advanced Data Structures and Algorithms Laboratory | 22MDC48 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Personality Development | 22MDC49 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Full Stack Web Application Development | 17MDC53 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Full Stack Web Application Development Laboratory | 17MDC54 | 2023- 2024 |
| M. Sc. Decision and Computing Sciences | Advanced Data Structures and Algorithms Laboratory | 17MDC55 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | EXPLAINABLE AI | 19MAME20 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | FEDERATED LEARNING | 19MAME21 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | GENERATIVE ADVERSARIAL NETWORKS | 19MAME22 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | BLOCKCHAIN TECHNOLOGIES | 20MSSE04 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | GENERATIVE AI LAB | 19MAMEL07 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | SOFTWARE TESTING LAB | 19MAMEL08 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | SOFTWARE ENGINEERING | 19MAMOCO3 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | MACHINE LEARNING OPERATIONS LAB | 19MAMOCO4 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | INNOVATION,STARTUPS AND ENTREPREURSHIP | 19MAMOCO5 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | ECONOMICS OF BANKING AND FINANCE MARKETS | 19MAMON01 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | INTRODUCTION TO INDUSTRY 4.0 AND INDUSTRIAL INTERNET OF | 19MAMON02 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | ETHICAL HACKING | 19MAMON03 | 2023- 2024 |
| M.Sc. Artificial Intelligence and Machine Learning | AFFECTIVE COMPUTING | 19MAMON04 | 2023- 2024 |
| Master of Computer Applications | Object Oriented Programming with Java | 23MCA131 | 2023- 2024 |

| | | | |
|---|--|----------|------------|
| Master of Computer Applications | Advanced Machine Learning Techniques | 23MCA211 | 2023- 2024 |
| Master of Computer Applications | Agile Methods for Software Development | 23MCA212 | 2023- 2024 |
| Master of Computer Applications | Design and Analysis of Algorithms | 23MCA231 | 2023- 2024 |
| Master of Computer Applications | Full Stack Web Development Laboratory | 23MCA222 | 2023- 2024 |
| Master of Computer Applications | Soft skills – I | 23MCA223 | 2023- 2024 |
| MBA - MASTER OF BUSINESS ADMINISTRATION | BUSINESS SIMULATION LAB | 23MBA321 | 2023- 2024 |

| Year- 2 (2022-23) | | | |
|--|--|-----------|-----------|
| BE - Civil Engineering | Tamil's & Technology | 23FYH222 | 2022-2023 |
| BE - Civil Engineering | Human Value and Professional Ethics | 23MC302 | 2022-2023 |
| BE - Civil Engineering | Community Service and Engineering | 23MC402 | 2022-2023 |
| BE - Civil Engineering | Seminar and Technical Writing | 23MC502 | 2022-2023 |
| BE - Civil Engineering | Hackathon | 23MC601 | 2022-2023 |
| B.E. Mechanical Engineering | Fundamentals of Automotive Systems | 19MEE44 | 2022-2023 |
| B.E. Mechanical Engineering | The Joy of Computing using Python | 19MEE46 | 2022-2023 |
| B.E. Mechanical Engineering | Introduction to Aerospace Engineering - Flight | 19MEE47 | 2022-2023 |
| B.E. Mechanical Engineering | Work System Design | 19MEE48 | 2022-2023 |
| B.E. Mechanical Engineering | Classical Sociological Theory | 19MEE49 | 2022-2023 |
| B.E. Mechanical Engineering | Industrial Safety Engineering | 19MEE50 | 2022-2023 |
| B.E. Electrical and Electronics Engineering | Switched Mode Power Conversion | 19EEE41 | 2022-2023 |
| B.E. Electrical and Electronics Engineering | Utilization and Solar Energy | 19EEE42 | 2022-2023 |
| B.E. Electrical and Electronics Engineering | Wearable Sensors | 19EEE43 | 2022-2023 |
| B.E. Electrical and Electronics Engineering | Principles of Operating Systems | 19EEE44 | 2022-2023 |
| B.E. Electronics and Communication Engineering | PROBLEM SOLVING WITH ALGORITHMS AND DATA STRUCTURES | 19ECOC03 | 2022-2023 |
| B.E. Electronics and Communication Engineering | Engineers | 19ECOC02 | 2022-2023 |
| B.E. Electronics and Communication Engineering | Programming in C++ | 19ECOC05 | 2022-2023 |
| B.E. Electronics and Communication Engineering | Foundation skills for integrated product development | 19ECE54 | 2022-2023 |
| BE Computer Science Engineering | Introductio to Industry 4.0 and Industrial Internet of Things | 19MCSE31 | 2022-2023 |
| BE Computer Science Engineering | Cyber Security Tools Techniques Counter Measures | 19MCSE32 | 2022-2023 |
| BE Computer Science Engineering | Entrepreneurship (Nalaya Thiran) | 19ECI01 | 2022-2023 |
| B.Tech Information Technology | Internet of Things | 19IT72 | 2022-2023 |
| B.Tech Information Technology | Internet of Things Laboratory | 19ITL73 | 2022-2023 |
| B.Tech Information Technology | Mobile Application Development Laboratory | 19ITL74 | 2022-2023 |
| B.Tech. Chemical Engineering | Carbon Capture | 19CHE31 | 2022-2023 |
| B.Tech. Chemical Engineering | Material Science and Technology | 19CHE32 | 2022-2023 |
| B.Tech. Chemical Engineering | Bioprocess Technology | 19CHE33 | 2022-2023 |
| B.Tech. Chemical Engineering | Pilot Plant and Scaleup Methods | 19CHE34 | 2022-2023 |
| B.Tech. Chemical Engineering | Heritage of Tamil | OC | 2022-2023 |
| B.Tech. Chemical Engineering | Tamil and Technology | OC | 2022-2023 |
| MSc Decision and Computing Sciences | Managerial Communication Skills | 17MDC49 | 2022-2023 |
| MSc Decision and Computing Sciences | Personality Development | 17MDC58 | 2022-2023 |
| MSc Decision and Computing Sciences | Minor Project - Decision Tool Development | 17MDC95 | 2022-2023 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce I | 17MDC71 | 2022-2023 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce II | 17MDC101 | 2022-2023 |
| MSc Decision and Computing Sciences | Technical English | 22MDC11 | 2022-2023 |
| MSc Decision and Computing Sciences | Applied Algebra and Calculus | 22MDC12 | 2022-2023 |
| MSc Decision and Computing Sciences | Statistical Methods | 22MDC13 | 2022-2023 |
| MSc Decision and Computing Sciences | Principles of Management | 22MDC14 | 2022-2023 |
| MSc Decision and Computing Sciences | Problem Solving and Programming in C | 22MDC15 | 2022-2023 |
| MSc Decision and Computing Sciences | Mathematical and Statistical Computing Laboratory | 22MDC16 | 2022-2023 |
| MSc Decision and Computing Sciences | C Programming Laboratory | 22MDC17 | 2022-2023 |
| MSc Decision and Computing Sciences | Foundations of Computer Science Laboratory | 22MDC18 | 2022-2023 |
| MSc Decision and Computing Sciences | Employability Skills | 22MDC19 | 2022-2023 |
| MSc Decision and Computing Sciences | Professional English | 22MDCLE01 | 2022-2023 |
| MSc Decision and Computing Sciences | Probability Distributions and Applications | 22MDC21 | 2022-2023 |
| MSc Decision and Computing Sciences | Organisational Behavior | 22MDC22 | 2022-2023 |
| MSc Decision and Computing Sciences | Data Structures and Algorithms | 22MDC23 | 2022-2023 |
| MSc Decision and Computing Sciences | Computer Organisation and Operating Systems | 22MDC24 | 2022-2023 |
| MSc Decision and Computing Sciences | Applied Probability Laboratory | 22MDC25 | 2022-2023 |
| MSc Decision and Computing Sciences | Data Structures and Algorithms Laboratory | 22MDC26 | 2022-2023 |
| MSc Decision and Computing Sciences | Python Programming Laboratory | 22MDC27 | 2022-2023 |
| MSc Decision and Computing Sciences | English for Employability | 22MDC28 | 2022-2023 |
| MSc Decision and Computing Sciences | Advanced Machine Learning | 17MDCSE2 | 2022-2023 |
| MSc Data Science | Business Statistics | 21MDS31 | 2022-2023 |
| MSc Data Science | Discrete Structures and Automata Theory | 21MDS32 | 2022-2023 |
| MSc Data Science | Operating Systems | 21MDS33 | 2022-2023 |
| MSc Data Science | Database Systems | 21MDS34 | 2022-2023 |
| MSc Data Science | Data Structures and Algorithms II | 21MDS35 | 2022-2023 |
| MSc Data Science | Database Systems Laboratory | 21MDS36 | 2022-2023 |
| MSc Data Science | Data Structures and Algorithms Laboratory II | 21MDS37 | 2022-2023 |
| MSc Data Science | Web Technology Framework Laboratory | 21MDS38 | 2022-2023 |
| MSc Data Science | Multivariate Data Analysis | 21MDS41 | 2022-2023 |
| MSc Data Science | Graph Theory | 21MDS42 | 2022-2023 |
| MSc Data Science | Design and Analysis of Algorithms | 21MDS43 | 2022-2023 |
| MSc Data Science | Computer Networks | 21MDS44 | 2022-2023 |
| MSc Data Science | Machine Learning | 21MDS45 | 2022-2023 |
| MSc Data Science | Predictive Analytics Laboratory | 21MDS46 | 2022-2023 |
| MSc Data Science | Design and Analysis of Algorithms Laboratory | 21MDS47 | 2022-2023 |
| MSc Data Science | Machine Learning Laboratory | 21MDS48 | 2022-2023 |
| MSc Data Science | Personality Development | 21MDS49 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Java Programming | 19MAMOC02 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Explainable AI | 19MAME20 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Federated Learning | 19MAME21 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Generative Adversarial Networks | 19MAME22 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Blochain Technologies | 20MSSE04 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Generative AI Lab | 19MAMEL07 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Software Testing Laboratory | 19MAMEL08 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Software Engineering | 19MAMOC03 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Machine Learning Operations Lab | 19MAMOC04 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Innovation, Startups and Entrepreneurship | 19MAMOC05 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Economics of Banking and Finance Markets | 19MAMON01 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Introduction to Industry 4.0 and Industrial Internet of Things | 19MAMON02 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Ethical Hacking | 19MAMON03 | 2022-2023 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Affective Computing | 19MAMON04 | 2022-2023 |
| Master of Business Administration | Logistics and Supply Chain Management | 21MBAE68 | 2022-2023 |
| Master of Business Administration | B2B & B2C Sales & Marketing | 21MBAE66 | 2022-2023 |
| Master of Business Administration | Talent Acquisition and Management | 21MBAE51 | 2022-2023 |

| Year-3 (2021-22) | | | |
|---|---|-----------|-----------|
| BE Civil Engineering | Green Building Concepts and Practices | 19CEE21 | 2021-2022 |
| BE Civil Engineering | Intelligent Transport System | 19CEE32 | 2021-2022 |
| BE Civil Engineering | Python for Civil Engineers | 19CEOC05 | 2021-2022 |
| BE Civil Engineering | 3DPrinting of Civil Engineering Structures | 19CEOC06 | 2021-2022 |
| BE Civil Engineering | Sustainability in construction | 19CEOC09 | 2021-2022 |
| BE Civil Engineering | Introduction to Image Processing and GIS | 19CEOC10 | 2021-2022 |
| B.E. Mechanical Engineering | Smart Materials | 19MEE49 | 2021-2022 |
| B.E. Mechanical Engineering | Product Design and Manufacturing | 19ME45 | 2021-2022 |
| B.E. Mechanical Engineering | Fundamentals of Nuclear Power Generation | | 2021-2022 |
| B.E. Mechanical Engineering | Applied Ergonomics | | 2021-2022 |
| B.E. Mechanical Engineering | Innovation and Entrepreneurship | 19MEOC14 | 2021-2022 |
| B.E. Mechanical Engineering | 3D Scanning Technology | 19MEOC15 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Smart Grid | 19EE73 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Energy Audit in Thermal and Electrical Utilities | 19EEE19 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Automation, Renewable Energy & FPGA Laboratory | 19EEE29 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Deep Learning | 19EEE40 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Professional Competency | 19EEL75 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Project work phase I | 19EE76 | 2021-2022 |
| B.E.Electrical and Electronics Engineering | Project work phase II | 19EE81 | 2021-2022 |
| B.E.Electronics and Communication Engineering | COMMUNICATION SKILLS FOR ENGINEERING PROFESSIONALS | 19ECOC16 | 2021-2022 |
| B.E.Electronics and Communication Engineering | ENTREPRENEURSHIP AND MANAGEMENT FUNCTIONS | 19ECOC17 | 2021-2022 |
| B.E.Electronics and Communication Engineering | HMS Foundation course on Mobile App Development | 19ECOC02 | 2021-2022 |
| B.E.Electronics and Communication Engineering | Baseband Communication- Signal Generation and Analysis | 19ECOC23 | 2021-2022 |
| B.E.Electronics and Communication Engineering | RF Measurements | 19ECOC24 | 2021-2022 |
| B.E.Electronics and Communication Engineering | Employability and Personality Development skills II | 19HOC61 | 2021-2022 |
| BE Computer Science Engineering | Data Analytics and Decision Making (NPTEL) | - | 2021-2022 |
| BE Computer Science Engineering | Ethical Hacking(NPTEL) | - | 2021-2022 |
| BE Computer Science Engineering | Data Science | 19CSE01 | 2021-2022 |
| BE Computer Science Engineering | C++ Programming | 19CIOC01 | 2021-2022 |
| BE Computer Science Engineering | Applications of Probability | 19CIOC03 | 2021-2022 |
| BE Computer Science Engineering | User Interface Design | 19CIOC04 | 2021-2022 |
| BE Computer Science Engineering | Comprehensive Exam Training | 19CIOC06 | 2021-2022 |
| B.Tech Information Technology | Embedded Systems | 19CI53 | 2021-2022 |
| B.Tech Information Technology | Embedded Systems Laboratory | 19ITL52 | 2021-2022 |
| B.Tech Information Technology | Employability and Personal Development Skills-I | 19HOC51 | 2021-2022 |
| B.Tech Information Technology | Employability and Personal Development Skills-I | 19HOC61 | 2021-2022 |
| B.Tech Information Technology | Artificial Intelligence | 19CI61 | 2021-2022 |
| B.Tech Information Technology | Data Analytics and Artificial Intelligence Laboratory | 19ITL63 | 2021-2022 |
| B.Tech Information Technology | Cyber Security | 19ITE05 | 2021-2022 |
| B.Tech Information Technology | Entrepreneurship Skill Development | 19CIE07 | 2021-2022 |
| B.Tech Information Technology | Machine Learning | 19CS62 | 2021-2022 |
| B.Tech Information Technology | Full Stack Development | 19ITE15 | 2021-2022 |
| B.Tech Information Technology | Virtual and Augmented Reality | 19ITE16 | 2021-2022 |
| B.Tech Information Technology | Internet Technology and Software Engineering Laboratory | 19ITL64 | 2021-2022 |
| B.Tech. Chemical Engineering | Numerical Methods in Chemical Engineering | 19CH51 | 2021-2022 |
| B.Tech. Chemical Engineering | Entrepreneurship Development | 19CHL56 | 2021-2022 |
| B.Tech. Chemical Engineering | Internship-I | 19INT51 | 2021-2022 |
| B.Tech. Chemical Engineering | Internship-II | 19INT61 | 2021-2022 |
| B.Tech. Chemical Engineering | Employability and personality development skills-I | 19HOC51 | 2021-2022 |
| B.Tech. Chemical Engineering | Employability and personality development skills-II | 19HOC61 | 2021-2022 |
| M. E. Advanced Manufacturing Technology | Production Operation and Management | 19MMAE37 | 2021-2022 |
| M. E. Advanced Manufacturing Technology | Modeling and Analysis of Supply Chain Management | 19MMAE38 | 2021-2022 |
| M.E Communication Engineering | Deep Learning | 15MECE52 | 2021-2022 |
| MSc Decision and Computing Sciences | Managerial Communication Skills | 17MDC49 | 2021-2022 |
| MSc Decision and Computing Sciences | Personality Development | 17MDC58 | 2021-2022 |
| MSc Decision and Computing Sciences | Minor Project - Decision Tool Development | 17MDC95 | 2021-2022 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce I | 17MDC71 | 2021-2022 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce II | 17MDC101 | 2021-2022 |
| MSc Data Science | Algebra and Applications | 21MDS12 | 2021-2022 |
| MSc Data Science | Statistical Methods | 21MDS13 | 2021-2022 |
| MSc Data Science | Problem Solving and Programming in Python | 21MDS14 | 2021-2022 |
| MSc Data Science | Principles of Digital Electronics | 21MDS15 | 2021-2022 |
| MSc Data Science | Computing Laboratory I | 21MDS16 | 2021-2022 |
| MSc Data Science | Programming Laboratory in Python | 21MDS17 | 2021-2022 |
| MSc Data Science | Digital Electronics Laboratory | 21MDS18 | 2021-2022 |
| MSc Data Science | English for Employability | 21MDS19 | 2021-2022 |
| MSc Data Science | Language Elective | 21MDSLE01 | 2021-2022 |
| MSc Data Science | Calculus and Applications | 21MDS21 | 2021-2022 |
| MSc Data Science | Probability Distributions and Applications | 21MDS22 | 2021-2022 |
| MSc Data Science | Data Structures and Algorithms I | 21MDS23 | 2021-2022 |
| MSc Data Science | Object Oriented Programming | 21MDS24 | 2021-2022 |
| MSc Data Science | Computing Laboratory II | 21MDS25 | 2021-2022 |
| MSc Data Science | Data Structures and Algorithms Laboratory I | 21MDS26 | 2021-2022 |
| MSc Data Science | Object Oriented Programming Laboratory | 21MDS27 | 2021-2022 |
| MSc Data Science | Employability Skills | 21MDS28 | 2021-2022 |
| Master of Computer Applications | Basics of Robotics | 20MCAE109 | 2021-2022 |
| Master of Computer Applications | GPU and Parallel Programming | 20MCAE110 | 2021-2022 |
| Master of Computer Applications | Digital Image Processing | 20MCAE111 | 2021-2022 |
| Master of Computer Applications | Blockchain Technologies | 20MCAE112 | 2021-2022 |
| Master of Computer Applications | Single page web applications | 20MCAE113 | 2021-2022 |
| Master of Computer Applications | Digital Marketing | 20MCAE114 | 2021-2022 |
| Master of Computer Applications | Software Project Management | 20MCAE115 | 2021-2022 |
| Master of Computer Applications | Computer Vision | 20MCAE116 | 2021-2022 |
| Master of Computer Applications | Software Testing and Quality Assurance | 20MCAE117 | 2021-2022 |
| Master of Computer Applications | Open Source Ecosystem | 20MCAE118 | 2021-2022 |
| Master of Computer Applications | Enterprise Management and Computing | 20MCAE119 | 2021-2022 |
| Master of Computer Applications | Natural Language Processing | 20MCAE205 | 2021-2022 |
| Master of Computer Applications | Social Network Analysis | 20MCAE206 | 2021-2022 |
| Master of Computer Applications | Data Mining and Warehousing | 20MCAE304 | 2021-2022 |
| Master of Computer Applications | Ad Hoc Networks | 20MCAE305 | 2021-2022 |

| | | | |
|--|--|-----------|-----------|
| Master of Computer Applications | GPU and Parallel Programming Laboratory | 20MCAEL06 | 2021-2022 |
| Master of Computer Applications | Image Processing Laboratory | 20MCAEL07 | 2021-2022 |
| Master of Computer Applications | Web Frameworks Laboratory | 20MCAEL08 | 2021-2022 |
| Master of Computer Applications | Natural Language Processing Laboratory | 20MCAEL09 | 2021-2022 |
| Master of Computer Applications | Social Network Analysis Laboratory | 20MCAEL10 | 2021-2022 |
| Master of Computer Applications | Networks Programming Laboratory | 20MCAEL11 | 2021-2022 |
| Master of Computer Applications | Digital Marketing Laboratory | 20MCAEL12 | 2021-2022 |
| Master of Computer Applications | Devops Essentials | 20MCAOC02 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Advanced Machine Learning | 19MAM51 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Artificial Neural Networks | 19MAM52 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Knowledge Based Systems | 19MAM53 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | AI Systems Engineering | 19MAM54 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Distributed and Cloud Computing | 19MAM55 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Advanced Machine Learning Lab | 19MAM56 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Full Stack Web Development Lab | 19MAM57 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Cloud Computing Lab | 19MAM58 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Personality Development | 19MAM59 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Intelligent Agents | 19MAM61 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Deep Learning | 19MAM62 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Information Retrieval and Web Search | 19MAM63 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Big data Analytics | 19MAM64 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Deep Learning Lab | 19MAM65 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Mobile Application Development Lab | 19MAM66 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Big Data Analytics Lab | 19MAM67 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Communication Skills | 19MAM68 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Hackathon | 19MAM69 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Project Work and Viva Voce-I | 19MAM71 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Graph Representation Learning | 19MAM81 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Reinforcement Learning | 19MAM82 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Meta-Heuristic Optimization Techniques | 19MAM83 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Meta-Heuristic Optimization Lab | 19MAM84 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Computer Vision | 19MAM91 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Cyber Threat Intelligence | 19MAM92 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Computer Vision Lab | 19MAM93 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Intelligent Cyber Security Lab | 19MAM94 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Project Work and Viva Voce-II | 19MAM101 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Ethics in AI | 19MAME01 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Healthcare Analytics | 19MAME02 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Smart Applications | 19MAME03 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Spatial Data Modelling and Analysis | 19MAME04 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Augmented and Virtual Reality | 19MAME05 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Medical Image Processing | 19MAME06 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Natural Language Processing | 19MAME07 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Probabilistic Graphical Models | 19MAME08 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Cognitive Computing | 19MAME09 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Recommender Systems | 19MAME10 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Robotics and its Applications | 19MAME11 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Conversational AI | 19MAME12 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Game Theory | 19MAME13 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Agile Software Development | 19MAME14 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | SOA and Web Services | 19MAME15 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Internet of Things | 19MAME16 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Digital Signal and Image Processing | 19MAME17 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Cyber Security | 19MAME18 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Business Intelligence | 19MAME19 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Spatial Data Modelling and Analysis Laboratory | 19MAMEL01 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Augmented and Virtual Reality Lab | 19MAMEL02 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Natural Language Processing Lab | 19MAMEL03 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Graph Analytics Lab | 19MAMEL04 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Internet of Things Lab | 19MAMEL05 | 2021-2022 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Cyber Security Lab | 19MAMEL06 | 2021-2022 |

| Year- 4 (2020-21) | | | |
|---|---|-----------|-----------|
| BE Civil Engineering | Calculus and Differential Equations | 19FYM13 | 2020-2021 |
| BE Civil Engineering | Physics for Communication Engineers | 19FYP14 | 2020-2021 |
| BE Civil Engineering | Electrical Engineering and Instrumentation | 19EC11 | 2020-2021 |
| BE Civil Engineering | Employability Skills | 19F EL11 | 2020-2021 |
| BE Civil Engineering | Digital Electronics | 19EC31 | 2020-2021 |
| BE Civil Engineering | Analog Electronics | 19EC32 | 2020-2021 |
| BE Civil Engineering | Computer Architecture and Organization | 19EC34 | 2020-2021 |
| BE Civil Engineering | Communication Skills for Engineers – I* | 19HOC31 | 2020-2021 |
| B.E.Electrical and Electronics Engineering | Communication skills for engineers I | 19HOC31 | 2020-2021 |
| B.E.Electrical and Electronics Engineering | Communication skills for engineers II | 19HOC41 | 2020-2021 |
| B.E.Electronics and Communication Engineering | Basics of Python | 19ECOC01 | 2020-2021 |
| BE Computer Science Engineering | Python Programming | 19CSL12 | 2020-2021 |
| B.Tech Information Technology | Communication Skills for Engineers I | 19HOC31 | 2020-2021 |
| B.Tech Information Technology | Communication Skills for Engineers II | 19HOC41 | 2020-2021 |
| B.Tech Information Technology | C++ Programming | 19CIOC01 | 2020-2021 |
| B.Tech Information Technology | R Programming | 19CIOC02 | 2020-2021 |
| B.Tech Information Technology | Applications of Probability | 19CIOC03 | 2020-2021 |
| B.Tech Information Technology | User Interface Design | 19CIOC04 | 2020-2021 |
| B.Tech Information Technology | Comprehensive Exam Training | 19CIOC05 | 2020-2021 |
| B.Tech Information Technology | Open-Source Tools for Network Analysis | 19CIOC06 | 2020-2021 |
| B.Tech Information Technology | Aptitude Training | 19ITOC01 | 2020-2021 |
| B.Tech Information Technology | Data Visualization Tools | 19ITOC02 | 2020-2021 |
| B.Tech Information Technology | Data Science Tools | 19ITOC03 | 2020-2021 |
| B.Tech Information Technology | Cloud Computing Applications | 19ITOC04 | 2020-2021 |
| B.Tech Information Technology | Agile Software Development | 19ITOC05 | 2020-2021 |
| B.Tech Information Technology | Software Testing Tool | 19ITOC06 | 2020-2021 |
| B.Tech. Chemical Engineering | Computer Laboratory (Programming for Problem Solving) | 19CHL36 | 2020-2021 |
| B.Tech. Chemical Engineering | Communication Skills for Engineers-I | 19HOC31 | 2020-2021 |
| B.Tech. Chemical Engineering | Biology for Chemical Engineers | 19CH41 | 2020-2021 |
| B.Tech. Chemical Engineering | Communication Skills for Engineers-II | 19HOC41 | 2020-2021 |
| B.Tech. Chemical Engineering | Numerical Methods in Chemical Engineering | 19CH51 | 2020-2021 |
| B.Tech. Chemical Engineering | Entrepreneurship Development | 19CHL56 | 2020-2021 |
| B.Tech. Chemical Engineering | Internship-I | 19INT51 | 2020-2021 |
| B.Tech. Chemical Engineering | Internship-II | 19INT61 | 2020-2021 |
| B.Tech. Chemical Engineering | Employability and personality development skills-I | 19HOC51 | 2020-2021 |
| B.Tech. Chemical Engineering | Employability and personality development skills-II | 19HOC61 | 2020-2021 |
| MSC Sotware Systems | Structured Systems Analysis and Design | 20MSS13 | 2020-2021 |
| MSC Sotware Systems | Probability and Statistics – II | 20MSS32 | 2020-2021 |
| MSC Sotware Systems | Python Programming Laboratory | 20MSS36 | 2020-2021 |
| MSC Sotware Systems | Artificial Intelligence | 20MSS83 | 2020-2021 |
| MSC Sotware Systems | Virtual and Augmented Reality | 20MSS16 | 2020-2021 |
| MSC Sotware Systems | Artificial Intelligence Laboratory | 20MSS85 | 2020-2021 |
| MSC Sotware Systems | Blockchain Technologies Laboratory | 20MSSL03 | 2020-2021 |
| MSC Sotware Systems | Virtual and Augmented Reality Laboratory | 20MSSL13 | 2020-2021 |
| MSC Sotware Systems | Predictive Analytics | 20MSS08 | 2020-2021 |
| MSC Sotware Systems | Information Retrieval | 20MSS06 | 2020-2021 |
| MSC Decision and Computing Sciences | Advanced Data Structures and algorithms | 16MDS43 | 2020-2021 |
| MSC Decision and Computing Sciences | Advanced Data Structures Laboratory | 17MDC13 | 2020-2021 |
| MSC Decision and Computing Sciences | Project Work and Viva Voce I | 17MDC71 | 2020-2021 |
| Master of Computer Applications | Mathematical Foundations of Computer Applications | 20MCA11 | 2020-2021 |
| Master of Computer Applications | Data Structures and Algorithms | 20MCA12 | 2020-2021 |
| Master of Computer Applications | Database Management Systems | 20MCA13 | 2020-2021 |
| Master of Computer Applications | Operating System Principles | 20MCA14 | 2020-2021 |
| Master of Computer Applications | Software Engineering | 20MCA15 | 2020-2021 |
| Master of Computer Applications | Data Structures Laboratory | 20MCA16 | 2020-2021 |
| Master of Computer Applications | Database Management Systems Laboratory | 20MCA17 | 2020-2021 |
| Master of Computer Applications | Python Programming Laboratory | 20MCA18 | 2020-2021 |
| Master of Computer Applications | Communication Skills | 20MCA19 | 2020-2021 |
| Master of Computer Applications | Artificial Intelligence | 20MCA21 | 2020-2021 |
| Master of Computer Applications | Advanced Java Programming | 20MCA22 | 2020-2021 |
| Master of Computer Applications | Virtualization and Cloud Computing | 20MCA23 | 2020-2021 |
| Master of Computer Applications | SOA and Web Services | 20MCA24 | 2020-2021 |
| Master of Computer Applications | Artificial Intelligence Laboratory | 20MCA25 | 2020-2021 |
| Master of Computer Applications | Advanced Programming Laboratory | 20MCA26 | 2020-2021 |
| Master of Computer Applications | Professional English | 20MCA27 | 2020-2021 |
| Master of Computer Applications | Mini Project | 20MCA28 | 2020-2021 |
| Master of Computer Applications | Hackathon | 20HAC01 | 2020-2021 |
| Master of Computer Applications | Cryptography and Network Security | 20MCA31 | 2020-2021 |
| Master of Computer Applications | Machine Learning | 20MCA32 | 2020-2021 |
| Master of Computer Applications | Cryptography and Network Security Laboratory | 20MCA33 | 2020-2021 |
| Master of Computer Applications | Machine Learning Laboratory 0 0 4 2 FC | 20MCA34 | 2020-2021 |
| Master of Computer Applications | Inplant Training | 20MCAIT01 | 2020-2021 |
| Master of Computer Applications | Project work and viva voce | 20MCA41 | 2020-2021 |
| Master of Computer Applications | Recent Trends in Web Technology | 20MCAOC01 | 2020-2021 |
| Master of Computer Applications | Basics of Data Structures | 20MCAB11 | 2020-2021 |
| Master of Computer Applications | Programming in C | 20MCAB12 | 2020-2021 |
| Master of Computer Applications | Computer Hardware and Organization | 20MCAB13 | 2020-2021 |
| Master of Computer Applications | Basics of Internet | 20MCAB21 | 2020-2021 |
| Master of Computer Applications | Software Project Management | 20MCAB22 | 2020-2021 |
| Master of Computer Applications | Object Oriented Programming in C++ | 20MCAB23 | 2020-2021 |
| Master of Computer Applications | Graphics and Multimedia | 20MCAE101 | 2020-2021 |
| Master of Computer Applications | Advanced Database Management Systems | 20MCAE102 | 2020-2021 |
| Master of Computer Applications | Distributed Systems | 20MCAE103 | 2020-2021 |
| Master of Computer Applications | Grid and Cluster Computing 3 0 0 3 PE | 20MCAE104 | 2020-2021 |
| Master of Computer Applications | Internet of Things | 20MCAE105 | 2020-2021 |
| Master of Computer Applications | Software Metrics and Measurement | 20MCAE106 | 2020-2021 |
| Master of Computer Applications | Agile Methods for Software Development | 20MCAE107 | 2020-2021 |
| Master of Computer Applications | Software Architecture and Design Patterns | 20MCAE108 | 2020-2021 |
| Master of Computer Applications | Data Analytics | 20MCAE201 | 2020-2021 |
| Master of Computer Applications | Intelligent Information Retrieval | 20MCAE202 | 2020-2021 |

| | | | |
|--|--|-----------|-----------|
| Master of Computer Applications | Big Data Technologies | 20MCAE203 | 2020-2021 |
| Master of Computer Applications | Data Mining and Warehousing | 20MCAE204 | 2020-2021 |
| Master of Computer Applications | Computer Networks | 20MCAE301 | 2020-2021 |
| Master of Computer Applications | Internetworking Protocols and Management | 20MCAE302 | 2020-2021 |
| Master of Computer Applications | Mobile Computing | 20MCAE303 | 2020-2021 |
| Master of Computer Applications | Organizational Behaviour | 20MCAE401 | 2020-2021 |
| Master of Computer Applications | Principles of Management | 20MCAE402 | 2020-2021 |
| Master of Computer Applications | Accounting and Financial Management | 20MCAE403 | 2020-2021 |
| Master of Computer Applications | E-Commerce | 20MCAE404 | 2020-2021 |
| Master of Computer Applications | Decision Making | 20MCAE405 | 2020-2021 |
| Master of Computer Applications | Entrepreneurship Development | 20MCAE406 | 2020-2021 |
| Master of Computer Applications | Principles of Environmental Science | 20MCAE407 | 2020-2021 |
| Master of Computer Applications | Mobile Application Development Laboratory | 20MCAEL01 | 2020-2021 |
| Master of Computer Applications | Graphics and Multimedia Laboratory | 20MCAEL02 | 2020-2021 |
| Master of Computer Applications | Internet of Things Laboratory | 20MCAEL03 | 2020-2021 |
| Master of Computer Applications | Data Analytics Laboratory | 20MCAEL04 | 2020-2021 |
| Master of Computer Applications | Data Mining Laboratory | 20MCAEL05 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Artificial Intelligence | 19MAM31 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Theory of Computing | 19MAM32 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Database Management Systems | 19MAM33 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Predictive Analytics | 19MAM34 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Human Computer Interaction | 19MAM35 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Artificial Intelligence Lab | 19MAM36 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Database Management Systems Lab | 19MAM37 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Predictive Analytics Lab | 19MAM38 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Operations Research | 19MAM41 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Machine Learning | 19MAM42 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Design and Analysis of Algorithms | 19MAM43 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Data Communications and Networking | 19MAM44 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Operating Systems | 19MAM45 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Machine Learning Lab | 19MAM46 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Design and Analysis of Algorithms Lab | 19MAM47 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Network Programming Lab | 19MAM48 | 2020-2021 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Econometrics and Machine Learning in Finance | 19MAMOC01 | 2020-2021 |

| Year-5 (2019-20) | | | |
|--|--|-----------|-----------|
| BE Civil Engineering | Partial Differential Equations and Its Applications | 19CEM31 | 2019-2020 |
| BE Civil Engineering | Professional Practices and Ethics | 19CE46 | 2019-2020 |
| BE Civil Engineering | Practical Geotechnical Engineering | 19CEOC01 | 2019-2020 |
| BE Civil Engineering | Green Buildings | 19CEOC02 | 2019-2020 |
| BE Civil Engineering | Sustainable Architecture | 19CEOC04 | 2019-2020 |
| B.E. Mechanical Engineering | Micro and Nano Electro-mechanical Systems | | 2019-2020 |
| B.E. Mechanical Engineering | Project Phase 1 | 19ME73 | 2019-2020 |
| B.E. Mechanical Engineering | Project Phase 2 | 19ME81 | 2019-2020 |
| B.E. Mechanical Engineering | Employability Skills | 19FYEL11 | 2019-2020 |
| B.E. Mechanical Engineering | Internship-I | 19INT51 | 2019-2020 |
| B.E. Mechanical Engineering | Internship-II | 19INT61 | 2019-2020 |
| B.E. Mechanical Engineering | Communication Skills For Engineers I* | 19HOC31 | 2019-2020 |
| B.E. Mechanical Engineering | Communication Skills For Engineers II* | 19HOC41 | 2019-2020 |
| B.E. Mechanical Engineering | Material Characterization and Testing Laboratory | 19MEL47A | 2019-2020 |
| B.E. Mechanical Engineering | Manufacturing Processes Laboratory | 19MEL47B | 2019-2020 |
| B.E. Mechanical Engineering | Applied Thermal Sciences Laboratory | 19MEL56A | 2019-2020 |
| B.E. Mechanical Engineering | Dynamics and Metrology Laboratory | 19MEL56B | 2019-2020 |
| B.E. Mechanical Engineering | One Credit Course on Foundry Practice and Procedure | 19MEOC05 | 2019-2020 |
| B.E. Mechanical Engineering | MATLAB Programming* | 19MEOC01 | 2019-2020 |
| B.E. Mechanical Engineering | Non Destructive Evaluation | 19MEOC02 | 2019-2020 |
| B.E. Mechanical Engineering | Advanced Industrial Automation Systems* | 19MEOC03 | 2019-2020 |
| B.E. Mechanical Engineering | Innovation and Entrepreneurship | 19MEOC14 | 2019-2020 |
| B.E. Mechanical Engineering | Recent Trends in Quality | 19MEOC04 | 2019-2020 |
| B.E. Mechanical Engineering | Basics of Automotive Electrical Systems | 19MEOC06 | 2019-2020 |
| B.E. Mechanical Engineering | Design Thinking - A Primer | 19MEOC07 | 2019-2020 |
| B.E. Mechanical Engineering | Aircraft Maintenance* | 19MEOC08 | 2019-2020 |
| B.E. Mechanical Engineering | Inspection and Quality Control in Manufacturing* | 19MEOC09 | 2019-2020 |
| B.E. Mechanical Engineering | Constitution of India | 19MEOC10 | 2019-2020 |
| B.E. Mechanical Engineering | Biology for Engineers | 19MEOC11 | 2019-2020 |
| B.E. Mechanical Engineering | Human Values | 19MEOC12 | 2019-2020 |
| B.E. Mechanical Engineering | E-Commerce Security* | 19MEOC13 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | Calculus and Numerical Methods | 19FYM12 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | Employability Skills | 19FYEL11 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | Vector Calculus, Linear Algebra and Partial Differential Equations | 19FYM22 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | C programming and Data Bases | 19CSL21 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | English for Employability | 19FYEL21 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | Electric and Magnetic Circuits | 19EE22 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | Intelligent Techniques for Electrical Engineering | 15EEE30 | 2019-2020 |
| B.E. Electrical and Electronics Engineering | OOPS and C++ for electrical engineers | 19EE46 | 2019-2020 |
| B.E. Electronics and Communication Engineering | Real Time Applications using Python | 15ECE35 | 2019-2020 |
| B.E. Electronics and Communication Engineering | Foundations for Employability | 16ECOC02 | 2019-2020 |
| B.E. Electronics and Communication Engineering | Advanced C Programming | 16ECOC03 | 2019-2020 |
| B.E. Electronics and Communication Engineering | Introduction to Machine Learning | 15ECE36 | 2019-2020 |
| B.E. Electronics and Communication Engineering | Hackathon | 15HACO1 | 2019-2020 |
| BE Computer Science Engineering | Python Programming | 19CSL12 | 2019-2020 |
| B.Tech Information Technology | English for Employability | 19FYEL21 | 2019-2020 |
| B.Tech Information Technology | Python Programming | 19CSL12 | 2019-2020 |
| B.Tech. Chemical Engineering | Introduction to Chemical Computing | 19CHL21 | 2019-2020 |
| M.E Structural Engineering | Prefabricated Structures | 19MCEE18 | 2019-2020 |
| M.E Structural Engineering | Energy Efficient Building | 19MSEOE02 | 2019-2020 |
| M.E Construction Management | Landscaping and Architecture | 19MCMOE01 | 2019-2020 |
| M.E Construction Management | Data Analysis Laboratory for Construction Management | 19MCM16 | 2019-2020 |
| M.E Construction Management | Project Planning Laboratory for Construction Management | 19MCM24 | 2019-2020 |
| M.E Construction Management | Advanced Construction Materials & Equipment | 19MCMEO1 | 2019-2020 |
| M.E Construction Management | Quality Management for Construction Projects | 19MCMEO2 | 2019-2020 |
| M.E Construction Management | Construction Risk Management | 19MCMEO6 | 2019-2020 |
| M.E Construction Management | Lean Construction Concepts, Tools & Practices | 19MCMEO12 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Product Design and Development | 19MMAE12 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Advanced Manufacturing Planning and Control | 19MMAE14 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Advanced Biomaterials | 19MMAE22 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Smart materials and Systems | 19MMAE24 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Design of Experiments and Taguchi methods. | 19MMAE27 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Design and Analysis of Experiments. | 19MMAE30 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Automation and Robotics | 19MMAOE01 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Work Study and Ergonomics | 19MMAOE02 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Product Life Cycle Management | 19MMAOE03 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | IOT in Manufacturing | 19MMAOE04 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Manufacturing | 19MMAOE05 | 2019-2020 |
| M. E. Advanced Manufacturing Technology | Research methodology and IPR | 19MMAOE06 | 2019-2020 |
| M.E Computer Science Engineering | Artificial Intelligence | 19MCS14 | 2019-2020 |
| M.E Computer Science Engineering | Probability and Statistics | 19MCS21 | 2019-2020 |
| M.E Computer Science Engineering | Artificial Intelligence Laboratory | 19MCS15 | 2019-2020 |
| M.E Computer Science Engineering | Machine Learning Laboratory | 19MCS24 | 2019-2020 |
| M.E Computer Science Engineering | Python Programming | 19MCSOC01 | 2019-2020 |
| MSC Software Systems | Deep Learning | 15MSSE36 | 2019-2020 |
| MSC Software Systems | Advanced Web Technology | 15MSSE37 | 2019-2020 |
| MSC Software Systems | Quantum Computing | 15MSSE38 | 2019-2020 |
| MSC Software Systems | Deep Learning Lab | 15MSSL13 | 2019-2020 |
| MSC Software Systems | Advanced Web Technology Lab | 15MSSL14 | 2019-2020 |
| MSC Software Systems | Quantum Computing Lab | 15MSSL15 | 2019-2020 |
| Master of Computer Applications | Computer Networks | 18MCAE32 | 2019-2020 |
| Master of Computer Applications | Artificial Intelligence | 18MCAE33 | 2019-2020 |
| Master of Computer Applications | SOA and Web Services | 18MCAE34 | 2019-2020 |
| Master of Computer Applications | Advanced Programming Laboratory | 18MCAE35 | 2019-2020 |
| Master of Computer Applications | Artificial Intelligence Laboratory | 18MCAE36 | 2019-2020 |
| Master of Computer Applications | Network Programming Laboratory | 18MCAE37 | 2019-2020 |
| Master of Computer Applications | Personality Development | 18MCAE38 | 2019-2020 |
| Master of Computer Applications | Web Frameworks Laboratory | 18MCAEL07 | 2019-2020 |
| Master of Computer Applications | Machine Learning Laboratory | 18MCAEL08 | 2019-2020 |
| Master of Computer Applications | Python Programming Laboratory | 18MCAEL09 | 2019-2020 |

| | | | |
|--|--|-----------|-----------|
| Master of Computer Applications | | 15HAC01 | 2019-2020 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce-I | 17MDC71 | 2019-2020 |
| MSc Decision and Computing Sciences | Modeling and Simulation | 17MDC81 | 2019-2020 |
| MSc Decision and Computing Sciences | Decision Support Systems | 17MDC82 | 2019-2020 |
| MSc Decision and Computing Sciences | Game Theory and Decision Analysis | 17MDC83 | 2019-2020 |
| MSc Decision and Computing Sciences | Business Intelligence Laboratory | 17MDC84 | 2019-2020 |
| MSc Decision and Computing Sciences | Decision Analysis Lab (Game Theory) | 17MDC85 | 2019-2020 |
| MSc Decision and Computing Sciences | Entrepreneurship Development | 17MDC86 | 2019-2020 |
| MSc Decision and Computing Sciences | Principles of Information Security | 17MDC91 | 2019-2020 |
| MSc Decision and Computing Sciences | Project Management | 17MDC92 | 2019-2020 |
| MSc Decision and Computing Sciences | Human Computer Interface and Interaction | 17MDC93 | 2019-2020 |
| MSc Decision and Computing Sciences | Human Computer Interface and Interaction Lab | 17MDC94 | 2019-2020 |
| MSc Decision and Computing Sciences | Minor Project (Decision Tool Development) | 17MDC95 | 2019-2020 |
| MSc Decision and Computing Sciences | Business Ethics | 17MDC96 | 2019-2020 |
| MSc Decision and Computing Sciences | Project Work and Viva Voce-II | 17MDC101 | 2019-2020 |
| MSc Decision and Computing Sciences | Security Analysis and Portfolio Management | 17MDCE01 | 2019-2020 |
| MSc Decision and Computing Sciences | Equity Valuation | 17MDCE02 | 2019-2020 |
| MSc Decision and Computing Sciences | Derivatives and Risk Management | 17MDCE03 | 2019-2020 |
| MSc Decision and Computing Sciences | Credit Risk Analytics and Management | 17MDCE04 | 2019-2020 |
| MSc Decision and Computing Sciences | Consumer Behavior | 17MDCE11 | 2019-2020 |
| MSc Decision and Computing Sciences | Services Marketing | 17MDCE12 | 2019-2020 |
| MSc Decision and Computing Sciences | Customer Relationship Management | 17MDCE13 | 2019-2020 |
| MSc Decision and Computing Sciences | Brand Management | 17MDCE14 | 2019-2020 |
| MSc Decision and Computing Sciences | Strategic Human Resource Management | 17MDCE21 | 2019-2020 |
| MSc Decision and Computing Sciences | Organizational Development | 17MDCE22 | 2019-2020 |
| MSc Decision and Computing Sciences | Performance Management | 17MDCE23 | 2019-2020 |
| MSc Decision and Computing Sciences | Compensation Management | 17MDCE24 | 2019-2020 |
| MSc Decision and Computing Sciences | Total Quality Management | 17MDCE31 | 2019-2020 |
| MSc Decision and Computing Sciences | Logistics Strategy and Planning | 17MDCE32 | 2019-2020 |
| MSc Decision and Computing Sciences | Supply Chain Management | 17MDCE33 | 2019-2020 |
| MSc Decision and Computing Sciences | Warehouse and Distribution Management | 17MDCE34 | 2019-2020 |
| MSc Decision and Computing Sciences | Business Environment | 17MDCE41 | 2019-2020 |
| MSc Decision and Computing Sciences | Legal Aspects of Business | 17MDCE42 | 2019-2020 |
| MSc Decision and Computing Sciences | Information Technology for Managers | 17MDCE43 | 2019-2020 |
| MSc Decision and Computing Sciences | Direct and Indirect Tax | 17MDCE44 | 2019-2020 |
| MSc Decision and Computing Sciences | Technology and Innovation Management | 17MDCE45 | 2019-2020 |
| MSc Decision and Computing Sciences | Business Process Management | 17MDCE46 | 2019-2020 |
| MSc Decision and Computing Sciences | Distributed Systems | 17MDCE51 | 2019-2020 |
| MSc Decision and Computing Sciences | Minor Project in Business / Data Analytics | 17MDCEL1 | 2019-2020 |
| MSc Decision and Computing Sciences | Modeling and Simulation Laboratory | 17MDCEL2 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Technical English | 19MAM11 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Applied Algebra | 19MAM12 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Fundamental Statistical Methods | 19MAM13 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Data Structures | 19MAM14 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Theory of Programming Languages | 19MAM15 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Algebra and Statistics Lab | 19MAM16 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Data Structures Lab | 19MAM17 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Python Programming Lab | 19MAM18 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Employability Skills | 19FYEL11 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Professional English | 19MAMLE01 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Applied Calculus | 19MAM21 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Probability Distributions and Applications | 19MAM22 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Computer System Architecture | 19MAM23 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Advanced Data Structures | 19MAM24 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Calculus and Probability Lab | 19MAM25 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Programming Paradigm Lab | 19MAM26 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | Advanced Data Structures Lab | 19MAM27 | 2019-2020 |
| M.Sc. (Artificial Intelligence & Machine Learning) | English for Employability | 19FYEL21 | 2019-2020 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641
014

(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)

DEPARTMENT OF CIVIL ENGINEERING

REGULATIONS 2023 - CHOICEBASEDCREDITSYSTEM

B.E. CIVIL ENGINEERING
CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|---|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2 | 23FYM111 | Matrices and Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP111 | Physics for Civil Engineers | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23FYC111 | Engineering Chemistry for Civil Engineers | BSC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CE111 | Construction Materials | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE121 | Engineering Graphics- I | ESC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE122 | Engineering Practices Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| 3 | 23CE123 | C Programming Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSES | | | | | | | | |
| 1 | 23FYH121 | Heritage of Tamil | OC | 1 | 0 | 0 | 1 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC101 | Induction Programme | MC | 15 DAYS | | | - | - |
| 2 | 23MC102 | Soft Skills - I | MC | 1 | 0 | 0 | - | - |
| TOTAL | | | | 17 | 3 | 10 | 30 | 23 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH211 | Professional English | HSC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23FYM211 | Fourier Series and Transforms | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23CE211 | Engineering Mechanics | ESC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23CE212 | Engineering Geology | ESC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CE213 | Construction Technology | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23FYH221 | English Communication Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE221 | Engineering Graphics- II | ESC | 0 | 0 | 4 | 4 | 2 |
| 3 | 23FPC221 | Basic Sciences Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSES | | | | | | | | |
| 1 | 23FYC221 | Environmental Science and Engineering | OC | 1 | 0 | 0 | 1 | 1 |
| 2 | 23FYH222 | Tamil's & Technology | OC | 1 | 0 | 0 | 1 | 1 |
| CO-CURRICULAR ACTIVITIES | | | | | | | | |
| 1 | 23CC | 23CC221- NSS | OC | 15 HOURS | | | 1 | 1 |
| 2 | | 23CC222- YRC | | | | | | |
| 3 | | 23CC223- RSP | | | | | | |
| 4 | | 23CC224- Sports | | | | | | |
| TOTAL | | | | 18 | 1 | 12 | 31 | 25 |

SEMESTER – III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23M311 | Differential Equations and Random Variables | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23CE311 | Mechanics of Solids I | ESC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23CE312 | Concrete Technology | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23CE313 | Mechanics of Fluids | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CE314 | Surveying | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE321 | Strength of Materials Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE322 | Survey Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 3 | 23CE323 | Building Planning and Drawing | ESC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC301 | Soft Skills – II – Design Thinking | MC | 15 HOURS | | | 1 | 1 |
| 2 | 23MC302 | Human Value and Professional Ethics | MC | 15 HOURS | | | 1 | 1 |
| TOTAL | | | | 17 | 1 | 12 | 30 | 24 |

SEMESTER 8

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23CE411 | Mechanics of Solids II | ESC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23CE412 | Highway and Railway Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23CE413 | Applied Hydraulics and Hydraulic Machinery | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23CE414 | Water Supply Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CE415 | Construction Management | HSC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE421 | Environmental Engineering Laboratory I | ESC | 0 | 0 | 2 | 2 | 1 |
| 2 | 23CE422 | Hydraulics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 3 | 23CE423 | Concrete Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC401 | Value Added Course - I | MC | 15 HOURS | | | - | - |
| 2 | 23MC402 | Community Service and Engineering | MC | 15 HOURS | | | - | - |
| TOTAL | | | | 17 | 0 | 10 | 27 | 20 |

SEMESTER 9

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23CE511 | Structural Analysis - I | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23CE512 | Design of Reinforced Concrete Structural Elements | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23CE513 | Mechanics of Soils | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | ELECTIVE –I / OPEN ELECTIVE-I | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | ELECTIVE –II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE521 | Highway Engineering Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE522 | Quantity Surveying Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 3 | 23CE523 | Geo-Informatics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | PROJ | INPLANT TRAINING* | PROJECT | | | | 1 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC501 | Value Added Course – II | MC | 15 HOURS | | | - | - |
| 2 | 23MC502 | Seminar and Technical Writing | MC | 15 HOURS | | | - | - |
| TOTAL | | | | 18 | 0 | 12 | 30 | 22 |

*** 2 weeks of Inplant Training need to be completed during 4th semester vacation**

SEMESTER – 10

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23CE611 | Structural Analysis - II | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23CE612 | Design of Steel Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23CE613 | Foundation Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | ELECTIVE –III / OPEN ELECTIVE - II | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | ELECTIVE – IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE621 | Soil Mechanics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE622 | Project Planning Laboratory | PROJECT | 0 | 0 | 4 | 4 | 2 |
| 3 | 23CE623 | Building Information Modelling Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| | PROJ | MINI PROJECT | PROJECT | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC601 | Hackathon | MC | 15 HOURS | | | 1 | 1 |
| TOTAL | | | | 16 | 0 | 14 | 30 | 23 |

SEMESTER – 11

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|---|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23CE711 | Waste Water Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23CE712 | Prestressed Concrete Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23CE713 | Earthquake Resistant Design of Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | ELECTIVE -V | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | ELECTIVE -VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CE721 | Computer Applications Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 2 | 23CE722 | Design and Drawing (Concrete & Steel) | PCC | 0 | 0 | 4 | 4 | 2 |
| 3 | 23CE723 | Environmental Engineering Laboratory – II | ESC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 15 | 0 | 10 | 25 | 20 |

SEMESTER – VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|----------|-----------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | ELECTIVE –VII | PEC | 3 | 0 | 0 | 3 | 3 |
| 2 | | ELECTIVE -VIII | PEC | 3 | 0 | 0 | 3 | 3 |
| | | | | | | | | |
| PRACTICALS | | | | | | | | |
| 1 | PROJ | PROJECT WORK AND VIVA-VOCE | PROJECT | 0 | 0 | 12 | 12 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|-------------------------------------|-------------|--------------------------------------|----------|---|---|---|-----------------|---------|
| 1. STRUCTURAL ENGINEERING | | | | | | | | |
| 1. | | Design of Concrete Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Advanced Concrete Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Design of Bridges | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Advanced Steel Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Advanced Structural Analysis | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Prefabricated Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Finite Element Method | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Industrial Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | Smart Materials and Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Basics of Structural Dynamics | PE | 3 | 0 | 0 | 3 | 3 |
| 2. GEOTECHNICAL ENGINEERING | | | | | | | | |
| 11. | | Ground Improvement Techniques | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | | Design of Deep Foundation | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | | Geo Environmental Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | | Slope Stability and Landslides | PE | 3 | 0 | 0 | 3 | 3 |
| 15. | | Earth retaining Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 16. | | Foundations in Expansive Soils | PE | 3 | 0 | 0 | 3 | 3 |
| 17. | | Advanced Foundation Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 18. | | Reinforced Soil Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 3. ENVIRONMENTAL ENGINEERING | | | | | | | | |
| 19. | | Solid and Hazardous Waste Management | PE | 3 | 0 | 0 | 3 | 3 |
| 20. | | Environmental Impact Assessment | PE | 3 | 0 | 0 | 3 | 3 |

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|---|-------------|---|----------|---|---|---|-----------------|---------|
| 21. | | Climate change and adaptation | PE | 3 | 0 | 0 | 3 | 3 |
| 22. | | Marine Pollution and Control | PE | 3 | 0 | 0 | 3 | 3 |
| 23. | | Instrumental Method of Analysis | PE | 3 | 0 | 0 | 3 | 3 |
| 24. | | Air and Water Quality Modelling | PE | 3 | 0 | 0 | 3 | 3 |
| 25. | | Air Pollution and Control | PE | 3 | 0 | 0 | 3 | 3 |
| 26. | | Industrial Wastewater Treatment and Management | PE | 3 | 0 | 0 | 3 | 3 |
| 27. | | Irrigation Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 4. TRANSPORTATION ENGINEERING | | | | | | | | |
| 28. | | Pavement Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 29. | | Remote sensing and GIS | PE | 3 | 0 | 0 | 3 | 3 |
| 30. | | Traffic Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 31. | | Advanced Surveying | PE | 3 | 0 | 0 | 3 | 3 |
| 32. | | Urban Transportation Planning | PE | 3 | 0 | 0 | 3 | 3 |
| 33. | | Transportation Systems Planning & Management | PE | 3 | 0 | 0 | 3 | 3 |
| 34. | | Transportation Economics and Finance | PE | 3 | 0 | 0 | 3 | 3 |
| 35. | | Intelligent Transportation Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 36. | | Road Safety Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 5. CONSTRUCTION ENGINEERING AND MANAGEMENT | | | | | | | | |
| 37. | | Valuation of Immovable Properties | PE | 3 | 0 | 0 | 3 | 3 |
| 38. | | Engineering Economics | PE | 3 | 0 | 0 | 3 | 3 |
| 39. | | Maintenance Repair and Rehabilitation of Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 40. | | Advanced Construction Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 41. | | Contract Management | PE | 3 | 0 | 0 | 3 | 3 |
| 42. | | Formwork for Concrete Structures | PE | 3 | 0 | 0 | 3 | 3 |

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 43. | | Entrepreneurship in Civil Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 44. | | Professional Practices for Civil Engineers | PE | 3 | 0 | 0 | 3 | 3 |
| 45. | | Building Information Modelling | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF COURSES FOR MAJOR/MINOR

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|------------------------------------|-------------|---|----------|---|---|---|-----------------|---------|
| 1. STRUCTURAL ENGINEERING | | | | | | | | |
| 1. | | Design of Concrete Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Advanced Concrete Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Design of Bridges | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Advanced Steel Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Advanced Structural Analysis | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Prefabricated Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Finite Element Method | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Industrial Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | Smart Materials and Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Offshore Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 11. | | Advanced Concrete Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | | Design of Steel Concrete Composite Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | | Theory of Plates | PE | 3 | 0 | 0 | 3 | 3 |
| 2. GEOTECHNICAL ENGINEERING | | | | | | | | |
| 14. | | Ground Improvement Techniques | PE | 3 | 0 | 0 | 3 | 3 |
| 15. | | Design of Deep Foundation | PE | 3 | 0 | 0 | 3 | 3 |
| 16. | | Geo Environmental Engineering | PE | 3 | 0 | 0 | 3 | 3 |

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|-------------------------------------|-------------|---|----------|---|---|---|-----------------|---------|
| 17. | | Slope Stability and Landslides | PE | 3 | 0 | 0 | 3 | 3 |
| 18. | | Earth retaining Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 19. | | Foundations in Expansive Soils | PE | 3 | 0 | 0 | 3 | 3 |
| 20. | | Advanced Foundation Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 21. | | Reinforced Soil Structures | PE | 3 | 0 | 0 | 3 | 3 |
| 22. | | Strength and Deformation Behaviour of Soils | PE | 3 | 0 | 0 | 3 | 3 |
| 23. | | Subsurface Investigation and Instrumentation | PE | 3 | 0 | 0 | 3 | 3 |
| 24. | | Shallow Foundation | PE | 3 | 0 | 0 | 3 | 3 |
| 25. | | Earth and Rock Fill Dams | PE | 3 | 0 | 0 | 3 | 3 |
| 3. ENVIRONMENTAL ENGINEERING | | | | | | | | |
| 26. | | Solid and Hazardous Waste Management | PE | 3 | 0 | 0 | 3 | 3 |
| 27. | | Environmental Impact Assessment | PE | 3 | 0 | 0 | 3 | 3 |
| 28. | | Air and Water Quality Modelling | PE | 3 | 0 | 0 | 3 | 3 |
| 29. | | Air Pollution and Control | PE | 3 | 0 | 0 | 3 | 3 |
| 30. | | Industrial Wastewater Treatment and Management | PE | 3 | 0 | 0 | 3 | 3 |
| 31. | | Design of Physico-chemical Treatment Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 32. | | Design of Biological Treatment Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 33. | | Sustainable Development and Cleaner Production | PE | 3 | 0 | 0 | 3 | 3 |
| 34. | | Occupational Health, Safety and Risk Assessment | PE | 3 | 0 | 0 | 3 | 3 |
| 35. | | Biodegradation and Bioremediation Techniques | PE | 3 | 0 | 0 | 3 | 3 |

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|---|-------------|---|----------|---|---|---|-----------------|---------|
| 36. | | Energy Management | PE | 3 | 0 | 0 | 3 | 3 |
| 37. | | Environment, Health and Safety in Industries | PE | 3 | 0 | 0 | 3 | 3 |
| 38. | | Landfill Engineering and Remediation Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 4. TRANSPORTATION ENGINEERING | | | | | | | | |
| 39. | | Pavement Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 40. | | Remote Sensing and GIS | PE | 3 | 0 | 0 | 3 | 3 |
| 41. | | Traffic Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 42. | | Urban Transportation Planning | PE | 3 | 0 | 0 | 3 | 3 |
| 43. | | Transportation Systems Planning and Management | PE | 3 | 0 | 0 | 3 | 3 |
| 44. | | Transportation Economics and Finance | PE | 3 | 0 | 0 | 3 | 3 |
| 45. | | Intelligent Transport System | PE | 3 | 0 | 0 | 3 | 3 |
| 46. | | Road safety Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 47. | | Town Planning and Architecture | PE | 3 | 0 | 0 | 3 | 3 |
| 48. | | Metro Systems and Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 49. | | Airport and Harbour Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 50. | | Theory of Traffic flow | PE | 3 | 0 | 0 | 3 | 3 |
| 5. CONSTRUCTION ENGINEERING AND MANAGEMENT | | | | | | | | |
| 51. | | Project Management for Construction | PE | 3 | 0 | 0 | 3 | 3 |
| 52. | | Project Formulation and Appraisal | PE | 3 | 0 | 0 | 3 | 3 |
| 53. | | Planning, Scheduling and Control of Construction Projects | PE | 3 | 0 | 0 | 3 | 3 |
| 54. | | Contract Management | PE | 3 | 0 | 0 | 3 | 3 |
| 55. | | Functional Planning, Building Services and Maintenance Management | PE | 3 | 0 | 0 | 3 | 3 |
| 56. | | Advanced Construction Methods and Techniques | PE | 3 | 0 | 0 | 3 | 3 |

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 57. | | Construction Risk Management | PE | 3 | 0 | 0 | 3 | 3 |
| 58. | | Shoring, Scaffolding and Formwork | PE | 3 | 0 | 0 | 3 | 3 |
| 59. | | Valuation of Immovable Properties | PE | 3 | 0 | 0 | 3 | 3 |
| 60. | | Construction Safety and Health Management systems | PE | 3 | 0 | 0 | 3 | 3 |
| 61. | | Environmental Impact Assessment for Construction Engineers | PE | 3 | 0 | 0 | 3 | 3 |
| 62. | | Design of Energy Efficient Buildings | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|--------|-------------|---------------------------------------|----------|---|---|---|-----------------|---|---------------------------------|
| 1. | | Town Planning and Architecture | OE | 3 | 0 | 0 | 3 | 3 | COMMON TO ALL PROGRAMMES |
| 2. | | Climate Change and Adaptation | OE | 3 | 0 | 0 | 3 | 3 | |
| 3. | | Metro Systems and Engineering | OE | 3 | 0 | 0 | 3 | 3 | |
| 4. | | Renewable Energy Resources | OE | 3 | 0 | 0 | 3 | 3 | |
| 5. | | Principles of Sustainable Development | OE | 3 | 0 | 0 | 3 | 3 | |
| 6. | | Disaster Management | OE | 3 | 0 | 0 | 3 | 3 | |
| 7. | | Public Administration | OE | 3 | 0 | 0 | 3 | 3 | |
| 8. | | Elementary Earthquake Engineering | OE | 3 | 0 | 0 | 3 | 3 | |
| 9. | | Green Building | OE | 3 | 0 | 0 | 3 | 3 | |

LIST OF VALUE-ADDED COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C |
|--------|-------------|--|----------|---|---|---|-----------------|---|
| 1. | | Building Construction Process- an Overview | OC | 1 | 0 | 0 | 1 | - |
| 2. | | Applications of IoT in Civil Engineering | OC | 1 | 0 | 0 | 1 | - |
| 3. | | Certification and Career Roadmap in Civil Engineering | OC | 1 | 0 | 0 | 1 | - |
| 4. | | Environmental Monitoring | OC | 1 | 0 | 0 | 1 | - |
| 5. | | Python for Civil Engineers | OC | 1 | 0 | 0 | 1 | - |
| 6. | | 3D Printing of Civil Engineering Structures | OC | 1 | 0 | 0 | 1 | - |
| 7. | | Alternative Building Materials from Waste | OC | 1 | 0 | 0 | 1 | - |
| 8. | | Sustainability in Construction | OC | 1 | 0 | 0 | 1 | - |
| 9. | | Detailing of Steel Structures Using TEKLA | OC | 1 | 0 | 0 | 1 | - |
| 10. | | Pre – Engineered Building Detailing | OC | 1 | 0 | 0 | 1 | - |
| 11. | | Basic Plumbing | OC | 1 | 0 | 0 | 1 | - |
| 12. | | Green Building Rating | OC | 1 | 0 | 0 | 1 | - |
| 13. | | Drone Surveying | OC | 1 | 0 | 0 | 1 | - |
| 14. | | Archaeology of India | OC | 1 | 0 | 0 | 1 | - |
| 15. | | Retrofitting and Rehabilitation of Heritage Structures | OC | 1 | 0 | 0 | 1 | - |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014

(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)

DEPARTMENT OF MECHANICAL ENGINEERING

REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

B. E. MECHANICAL ENGINEERING

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2 | 23FYM112 | Matrices, Calculus and Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP112 | Physics for Mechanical Engineers I | BSC | 2 | 1 | 0 | 3 | 3 |
| 4 | 23FYC112 | Chemistry for Mechanical Engineers | BSC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23ME131 | C - Programming and Problem-Solving | ESC | 2 | 0 | 2 | 4 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23FPC121 | Basic Sciences Laboratory I | BSC | 0 | 0 | 2 | 2 | 1 |
| 7 | 23ME121 | Engineering Graphics for Mechanical Engineers I | ESC | 0 | 0 | 4 | 4 | 2 |
| 8 | 23ME122 | Engineering Practices laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSE | | | | | | | | |
| 9 | 23FYH121 | Heritage of Tamils/ Tamizhar Marabu | HSC | 1 | 0 | 0 | 1 | 1 |
| 10 | 23MC101 | Induction Program | MC | - | - | - | | 0 |
| 11 | 23MC102 | Soft Skills | EEC | - | - | - | | 0 |
| TOTAL | | | | 13 | 4 | 10 | 27 | 22 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------|-------------|--|----------|------------------|---|---|-----------------------|---------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH211 | Professional English / Foreign language | HSC | 3 | 0 | 0 | 3 | 3 |
| 2 | 23FYM212 | Fourier Series, Transforms, Difference and Vector Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP211 | Physics for Mechanical Engineers II | BSC | 2 | 1 | 0 | 3 | 3 |
| 4 | 23ME211 | Basic Electrical and Electronics Engineering | ESC | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|-------------------------|----------|--|-----|-----------|----------|-----------|-----------|-----------|
| 5 | 23ME212 | Materials and Metallurgy | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23FPC222 | Basic Sciences Laboratory II | BSC | 0 | 0 | 2 | 2 | 1 |
| 7 | 23ME221 | Engineering Graphics for Mechanical Engineers II | ESC | 0 | 0 | 4 | 4 | 2 |
| 8 | 23FYH221 | English Communication Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSE | | | | | | | | |
| 9 | 23CC | Co-Curricular Activities | MC | | | | | 1 |
| 10 | 23FYC221 | Environmental Science and Engineering | MC | 1 | 0 | 0 | 1 | 1 |
| 11 | 23FYH222 | Tamils and Technology / Tamizharum Thozhilnutpamum | MC | | | | | 1 |
| TOTAL | | | | 15 | 2 | 10 | 27 | 24 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------------|-------------|--|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23M312 | Complex Variables and Partial Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23ME311 | Engineering Mechanics | ESC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23ME312 | Engineering Thermodynamics | ESC | 3 | 1 | 0 | 4 | 4 |
| 4 | 23ME313 | Manufacturing Processes I | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23ME314 | Metrology and Quality Control | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23ME321 | Computer Aided Machine Drawing I | PCC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23ME322 | Metrology Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | 23ME323 | Moulding and Welding Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSE | | | | | | | | |
| 9 | 23MC301 | Induction Program | MC | | | | | 0 |
| 10 | 23MC321 | Human Values and Professional Ethics | MC | | | | | 1 |
| 11 | 23MC322 | Design Thinking | EEC | | | | | 1 |
| TOTAL | | | | 15 | 3 | 8 | 26 | 24 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------|-------------|--------------------------------|-----------|------------------|---|---|-----------------------|---------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Applied Thermodynamics | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | | Electrical Machines and Drives | ESC | 2 | 0 | 2 | 4 | 3 |

| | | | | | | | | |
|-------------------------|--|--|-----|-----------|----------|----------|-----------|-----------|
| 3 | | Fluid Mechanics and Machinery | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | | Manufacturing Processes II | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Strength of Materials | ESC | 3 | 1 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| 6 | | Computer Aided Machine drawing II | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Fluid Mechanics and Machinery Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Material Characterization and Testing Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSE | | | | | | | | |
| 9 | | Value Added Course 1 | EEC | | | | | 1 |
| 10 | | Community Service and Engineering | MC | | | | | 0 |
| TOTAL | | | | 14 | 3 | 8 | 25 | 22 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------------|-------------|---------------------------------------|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Design of Machine Elements | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | | Heat Transfer | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Kinematics of Machinery | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | | Professional Elective I | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Professional Elective II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Applied Thermodynamics Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Finite Element Analysis Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Lathe and Special Machines Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 9 | | In plant training | EEC | 0 | 0 | 0 | 0 | 1 |
| MANDATORY COURSE | | | | | | | | |
| 10 | | Value Added Course - 2 | EEC | | | | | 1 |
| 11 | | Seminar and Technical Writing | EEC | | | | | 1 |
| TOTAL | | | | 15 | 3 | 6 | 24 | 24 |

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------|-------------|-----------------------------------|-----------|------------------|---|---|-----------------------|---------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Computer Integrated Manufacturing | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Design of Transmission Systems | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Dynamics of Machinery | PCC | 3 | 1 | 0 | 4 | 4 |

| | | | | | | | | |
|-------------------------|--|---|-----|-----------|----------|-----------|-----------|-----------|
| 4 | | Professional Elective III | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Professional Elective IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Computer Aided Manufacturing Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Dynamics Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Heat Transfer Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 9 | | Mini Project | EEC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSE | | | | | | | | |
| 10 | | Hackathon | EEC | | | | | 1 |
| TOTAL | | | | 15 | 2 | 10 | 27 | 23 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|-----------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Control Systems and Mechatronics | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | | Fluid Power Control Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | | Operations Research | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | | Professional Elective V | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Professional Elective VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Fluid Power Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Mechatronics Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Advanced Manufacturing Laboratory | EEC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 15 | 2 | 6 | 23 | 20 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Professional Elective - VII / Open Elective - I | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Professional Elective - VIII / Open Elective - II | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 3 | | Project Work | EEC | 0 | 0 | 12 | 12 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|---------------|--------------------|--|-----------------|----------|----------|----------|------------------------|----------------|
| 1. | 23ME | Advanced Machining Processes | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23ME | Alternative Energy Conversion Technologies | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23ME | Automotive Technology | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23ME | Composite Materials | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23ME | Computer Aided Design | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23ME | Design of Jigs and Fixtures | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | 23ME | Energy Conservation and Waste Heat Recovery | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | 23ME | Engineering Economics and Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 9. | 23ME | Engineering Optimization | PEC | 3 | 0 | 0 | 3 | 3 |
| 10. | 23ME | Environment Sustainability and Impact Assessment | PEC | 3 | 0 | 0 | 3 | 3 |
| 11. | 23ME | Finite Element Analysis | PEC | 3 | 0 | 0 | 3 | 3 |
| 12. | 23ME | Gas Dynamics and Jet Propulsion | PEC | 3 | 0 | 0 | 3 | 3 |
| 13. | 23ME | Internal Combustion Engines | PEC | 3 | 0 | 0 | 3 | 3 |
| 14. | 23ME | Lean and Agile Manufacturing | PEC | 3 | 0 | 0 | 3 | 3 |
| 15. | 23ME | Manufacturing Cost Estimation | PEC | 3 | 0 | 0 | 3 | 3 |
| 16. | 23ME | Measurements and Controls | PEC | 3 | 0 | 0 | 3 | 3 |
| 17. | 23ME | Powder Metallurgy | PEC | 3 | 0 | 0 | 3 | 3 |
| 18. | 23ME | Power Plant Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 19. | 23ME | Precision Manufacturing | PEC | 3 | 0 | 0 | 3 | 3 |
| 20. | 23ME | Production Planning and Control | PEC | 3 | 0 | 0 | 3 | 3 |
| 21. | 23ME | Refrigeration and Air Conditioning | PEC | 3 | 0 | 0 | 3 | 3 |
| 22. | 23ME | Robotics | PEC | 3 | 0 | 0 | 3 | 3 |
| 23. | 23ME | Total Quality Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 24. | 23ME | Tribology | PEC | 3 | 0 | 0 | 3 | 3 |
| 25. | 23ME | Work System Design | PEC | 3 | 0 | 0 | 3 | 3 |

LIST OF VALUE ADDED COURSES

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 1. | 23ME | 3-D Scanning Technology | EEC | 1 | 0 | 0 | 1 | 1 |
| 2. | 23ME | Advanced Industrial Automation Systems | EEC | 1 | 0 | 0 | 1 | 1 |
| 3. | 23ME | Aircraft Maintenance | EEC | 1 | 0 | 0 | 1 | 1 |
| 4. | 23ME | Biology for Engineers | EEC | 1 | 0 | 0 | 1 | 1 |
| 5. | 23ME | Constitution of India | EEC | 1 | 0 | 0 | 1 | 1 |
| 6. | 23ME | E-Commerce Security | EEC | 1 | 0 | 0 | 1 | 1 |
| 7. | 23ME | Foundry Practice and Procedures | EEC | 1 | 0 | 0 | 1 | 1 |
| 8. | 23ME | Innovation and Entrepreneurship | EEC | 1 | 0 | 0 | 1 | 1 |
| 9. | 23ME | Inspection and Quality Control in Manufacturing | EEC | 1 | 0 | 0 | 1 | 1 |
| 10. | 23ME | MATLAB Programming | EEC | 1 | 0 | 0 | 1 | 1 |
| 11. | 23ME | Non Destructive Evaluation | EEC | 1 | 0 | 0 | 1 | 1 |
| 12. | 23ME | Recent Trends in Quality | EEC | 1 | 0 | 0 | 1 | 1 |
| 13. | 23ME | Design of Electric Vehicle (Four Wheeler) | EEC | 1 | 0 | 0 | 1 | 1 |
| 14. | 23ME | Heating Ventilation and Air-Conditioning System Design | EEC | 1 | 0 | 0 | 1 | 1 |
| 15. | 23ME | Geometric Dimensioning and Tolerancing in Design | EEC | 1 | 0 | 0 | 1 | 1 |
| 16. | 23ME | Advanced Solid State Joining Processes | EEC | 1 | 0 | 0 | 1 | 1 |

LIST OF VERTICALS

| S. NO. | VERTICAL 1 | VERTICAL 2 | VERTICAL 3 | VERTICAL 4 | VERTICAL 5 | VERTICAL 6 | VERTICAL 7 (MINOR) |
|---------------|---|--|---|--|---|---|--|
| | MATERIALS AND DESIGN ENGINEERING | COMPUTATIONAL ENGINEERING | ROBOTICS AND AUTOMATION | FLUID AND THERMAL SCIENCES | MANUFACTURING AND MANAGEMENT | PRODUCT AND PROCESS DEVELOPMENT | MECHANICAL TECHNOLOGY |
| 1 | Biomaterials | Computational Fluid Dynamics and Heat Transfer | Digital Manufacturing and IoT | Advanced Heat Transfer | Manufacturing Sciences | Additive Manufacturing | Fundamentals of Engineering Mechanics |
| 2 | Design Concepts in Engineering | Computational Solid Mechanics | Drives and Actuators for Robotics | Advanced Fluid Mechanics | Plastic Processing Techniques | Creativity and Innovation in Entrepreneurship | Fundamentals of Thermal Sciences |
| 3 | Design for Manufacturing and Assembly | Machine Learning for Intelligent Systems | Embedded Systems and Programming | Cryogenics | Surface Engineering | Design For X | Basic Manufacturing Processes |
| 4 | Experimental Stress Analysis | Python Programming | Industry 4.0 | Design and Optimization of Thermal Equipment | Advanced Statistics and Data Analytics | Ergonomics in Design | Energy Conversion Technologies |
| 5 | Smart Materials | Theory on Computation and Visualization | Sensors and Instrumentation | Design of Heat Exchangers | Quality Control and Reliability Engineering | New Product Development | Industrial Safety |
| 6 | Tool Engineering and Design | Computational Bio-Mechanics | Smart Mobility and Intelligent Vehicles | Turbo Machines | Supply Chain Management | Product Life Cycle Management | Electric and Hybrid Vehicle Technology |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

B. E. ELECTRONICS AND COMMUNICATION ENGINEERING

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2 | 23FYM114 | Calculus and Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP114 | Physics for Communication Engineering | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23FYC114 | Engineering Chemistry | BSC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EC111 | Electrical Engineering and Instrumentation | ESC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23FPC122 | Basic Sciences Laboratory | BSC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23EC121 | Electrical Engineering and Instrumentation Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| 8 | 23EC122 | Problem Solving Skills and Practices | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9 | 23FYH121 | Heritage of Tamils / கத ய் டிய | HSC | 15 Hours | | | 1 | 1 |
| 10 | 23MC101 | Induction Programme | MC | 2 Weeks | | | 2 Weeks | - |
| 11 | 23MC102 | Soft Skills | EEC | 15 Hours | | | 1 | - |
| TOTAL | | | | 14 | 3 | 8 | 27 | 22 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYM214 | Complex Variables, Laplace Transforms and Fourier Series | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23FYP212 | Semiconductor Physics | BSC | 3 | 0 | 0 | 3 | 4 |
| 3 | 23EC211 | Problem Solving Using C Programming | ESC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23EC212 | Electron Devices | ESC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EC213 | Network Theory | ESC | 3 | 1 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| 6 | 23FYH221 | English Communication Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23EC221 | C Programming Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| 8 | 23EC222 | Devices and Circuits Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9 | 23FYH222 | Tamils and Technology / தமிழ் மற்றும் தொழில்நுட்பம் | HSC | 15 Hours | | | 1 | 1 |
| 10 | 23FYC221 | Environmental Science and Engineering | HSC | 15 Hours | | | 1 | 1 |
| 11 | 23CC | Co-Curricular Activities* | MC | 15 Hours | | | 1 | 1 |
| | | 23CC221-NSS | | | | | | |
| | | 23CC222-YRC | | | | | | |
| | | 23CC223-RSP | | | | | | |
| | | 23CC224-SPORTS | | | | | | |
| TOTAL | | | | 15 | 2 | 18 | 28 | 24 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23M314 | Linear Algebra and Probability | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23EC311 | Signals and Systems | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23EC312 | Analog Electronics | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23EC313 | Digital Electronics | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EC314 | Electromagnetic Fields and Transmission Lines | PCC | 3 | 1 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| 6 | 23EC321 | Analog Electronics Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 7 | 23EC322 | Digital Electronics Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8 | 23EC323 | Python Programming Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9 | 23MC301 | Induction Programme | MC | 1 Week | | | | |
| 10 | 23MC321 | Human Values and Professional Ethics | MC | 15 Hours | | | 1 | 1 |
| 11 | 23MC322 | Design Thinking | EEC | 15 Hours | | | 1 | 1 |
| TOTAL | | | | 15 | 3 | 8 | 28 | 24 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Antennas and Wave Propagation | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Principles of Communication | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Linear Integrated Circuits | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Microcontroller based Systems | PCC | 3 | 1 | 0 | 4 | 4 |
| 5 | | Data structures and Algorithms | PCC | 3 | 1 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| 6 | | Linear Integrated Circuits Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 7 | | Microcontrollers Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8 | | Data structures and Algorithms Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9 | | Community Services and Engineering | EEC | 15 Hours | | | - | - |
| 10 | | Value Added Course I | MC | 15 Hours | | | - | - |
| 11 | | | | | | | | |
| TOTAL | | | | 15 | 3 | 8 | 26 | 22 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|-------------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Control Systems | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | | Digital Signal Processing | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Embedded Systems and IoT | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Elective –I | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective –II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Signal Processing Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Embedded Systems and IoT Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | DBMS Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| | | In-Plant Training* | EEC | 2 Weeks | | | - | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9 | | Seminar and Technical Writing | EEC | 15 Hours | | | 1 | 1 |
| 10 | | Value Added Course II | EEC | 15 Hours | | | - | - |
| TOTAL | | | | 15 | 1 | 6 | 22 | 22 |

* IN-PLANT TRAINING to be completed in fourth semester

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | VLSI Design | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Digital Communication | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Data Communication Networks | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Elective -III | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective – IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | VLSI Design Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Analog and Digital Communication Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Java Programming Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 9 | | Mini Project | EEC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 10 | | Hackathon | EEC | 15 Hours | | | | 1 |
| TOTAL | | | | 15 | 1 | 10 | 26 | 22 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Digital Image Processing | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | | Wireless Communication and Networks | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | | Microwave Engineering and Optical Communication | PCC | 4 | 0 | 0 | 4 | 4 |
| 4 | | Elective -V | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective -VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Wireless Communication and Networking Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Microwave Engineering and Optical Communication Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Electronic Systems Design Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 16 | 1 | 6 | 23 | 20 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| | | ELECTIVE -VII | PEC | 3 | 0 | 0 | 3 | 3 |
| | | ELECTIVE -VIII | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| | | Project Work and Viva-Voce | EEC | 0 | 0 | 12 | 6 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 12 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--|-------------|--|----------|---|---|---|-----------------|---------|
| ELECTRONICS AND VLSI | | | | | | | | |
| 1. | | CAD for VLSI Circuits | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | | ASIC Design | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | | High Speed Digital Design | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Reconfigurable Computing | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | | VLSI Technology | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Bio-Medical CMOS ICs | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | | Validation and Testing Technology | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | | Quantum Circuit Design | PEC | 3 | 0 | 0 | 3 | 3 |
| 9. | | Signal Integrity for High Speed Devices | PEC | 3 | 0 | 0 | 3 | 3 |
| 10. | | System on Chip | PEC | 3 | 0 | 0 | 3 | 3 |
| 11. | | Semiconductor Device Modeling | PEC | 3 | 0 | 0 | 3 | 3 |
| 12. | | Semiconductor Memory Design | PEC | 3 | 0 | 0 | 3 | 3 |
| 13. | | Design Fundamentals of Electric and Hybrid Vehicles | PEC | 3 | 0 | 0 | 3 | 3 |
| 14. | | Power Electronics | PEC | 3 | 0 | 0 | 3 | 3 |
| 15. | | Electronic Packaging | PEC | 3 | 0 | 0 | 3 | 3 |
| EMBEDDED SYSTEMS & IoT | | | | | | | | |
| 16. | | Automotive Electronics | PEC | 3 | 0 | 0 | 3 | 3 |
| 17. | | Real Time Operating Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 18. | | Programming for IoT Boards | PEC | 3 | 0 | 0 | 3 | 3 |
| 19. | | IoT System Design and Applications | PEC | 3 | 0 | 0 | 3 | 3 |
| 20. | | Real Time Applications using Python | PEC | 3 | 0 | 0 | 3 | 3 |
| 21. | | Drone Technologies | PEC | 3 | 0 | 0 | 3 | 3 |
| 22. | | Robotics | PEC | 3 | 0 | 0 | 3 | 3 |
| 23. | | Foundation Skills for Integrated Product Development | PEC | 3 | 0 | 0 | 3 | 3 |
| COMMUNICATION AND SIGNAL PROCESSING | | | | | | | | |
| 24. | | Multimedia Compression and Communication | PEC | 3 | 0 | 0 | 3 | 3 |
| 25. | | Digital Switching and Transmission | PEC | 3 | 0 | 0 | 3 | 3 |
| 26. | | Error Control Coding | PEC | 3 | 0 | 0 | 3 | 3 |
| 27. | | Cognitive Radio Communication Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 28. | | Satellite Communication | PEC | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|--------------------------------|--|---|-----|---|---|---|---|---|
| 29. | | Under Water Communication | PEC | 3 | 0 | 0 | 3 | 3 |
| 30. | | Optical Communication Networks | PEC | 3 | 0 | 0 | 3 | 3 |
| 31. | | Wireless Adhoc and Sensor Networks | PEC | 3 | 0 | 0 | 3 | 3 |
| 32. | | Wireless Networks and Standards | PEC | 3 | 0 | 0 | 3 | 3 |
| 33. | | Next Generation Networks | PEC | 3 | 0 | 0 | 3 | 3 |
| 34. | | Network Routing and Infrastructure Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 35. | | Cryptography and Network Security | PEC | 3 | 0 | 0 | 3 | 3 |
| 36. | | Radar and Navigational Aids | PEC | 3 | 0 | 0 | 3 | 3 |
| 37. | | Compressive Sensing and Sparse Signal Processing | PEC | 3 | 0 | 0 | 3 | 3 |
| 38. | | Pattern Recognition | PEC | 3 | 0 | 0 | 3 | 3 |
| 39. | | Machine Learning for Signal Processing | PEC | 3 | 0 | 0 | 3 | 3 |
| 40. | | Adaptive Signal Processing | PEC | 3 | 0 | 0 | 3 | 3 |
| MICROWAVE AND RF DESIGN | | | | | | | | |
| 41. | | Modern Antennas | PEC | 3 | 0 | 0 | 3 | 3 |
| 42. | | Electromagnetic Interference and Compatibility | PEC | 3 | 0 | 0 | 3 | 3 |
| 43. | | RF Microelectronics | PEC | 3 | 0 | 0 | 3 | 3 |
| 44. | | Radiation Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 45. | | Electromagnetic Radiation Hazards and Safety | PEC | 3 | 0 | 0 | 3 | 3 |
| 46. | | Advanced Antenna Technology | PEC | 3 | 0 | 0 | 3 | 3 |
| SOFT COMPUTING | | | | | | | | |
| 47. | | Machine Learning Algorithms | PEC | 3 | 0 | 0 | 3 | 3 |
| 48. | | Deep Learning | PEC | 3 | 0 | 0 | 3 | 3 |
| 49. | | Artificial Intelligence | PEC | 3 | 0 | 0 | 3 | 3 |
| 50. | | Cyber Security | PEC | 3 | 0 | 0 | 3 | 3 |
| 51. | | Operating Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 52. | | Relational Database Management Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 53. | | Java Programming | PEC | 3 | 0 | 0 | 3 | 3 |
| 54. | | Intel Collaborated Course: Introduction to Machine Learning | PEC | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|--------|-------------|--|----------|---|---|---|-----------------|---|--------------|
| CO1 | | Signal Processing and Its Applications | OEC | 3 | 0 | 0 | 3 | 3 | All Branches |
| CO2 | | Smart Sensors and IoT | OEC | 3 | 0 | 0 | 3 | 3 | |
| CO3 | | Consumer Electronics | OEC | 3 | 0 | 0 | 3 | 3 | |
| CO4 | | Information Theory and Coding Techniques | OEC | 3 | 0 | 0 | 3 | 3 | |
| CO5 | | Automotive Embedded Systems | OEC | 3 | 0 | 0 | 3 | 3 | |
| CO6 | | 5G Technologies and Applications | OEC | 3 | 0 | 0 | 3 | 3 | |
| CO7 | | Vehicular Communication | OEC | 3 | 0 | 0 | 3 | 3 | |

SUMMARY

Category; BSC – Basic sciences, HSC– Humanities and Social Sciences, ESC–Engineering sciences, PCC –Professional Core, PEC- Professional Elective, OEC-Open Elective Course, EEC –Employability Enhancement Course, MC – Mandatory Course

| B.E. ELECTRONICS AND COMMUNICATION ENGINEERING | | | | | | | | | | |
|--|--------------|----------------------|----|-----|----|----|----|-----|------|---------------|
| Sl. No. | Subject Area | Credits per Semester | | | | | | | | Credits Total |
| | | I | II | III | IV | V | VI | VII | VIII | |
| 1 | HSC | 5 | 4 | | | | | | | 9 |
| 2 | BSC | 12 | 7 | 4 | | | | | | 23 |
| 3 | ESC | 5 | 12 | 1 | | | | | | 18 |
| 4 | PCC | | | 17 | 22 | 14 | 13 | | | 66 |
| 5 | PEC/OEC | | | | | 6 | 6 | 6 | 6 | 24 |
| 6 | EEC | | | 1 | | 2 | 3 | 14 | 6 | 26 |
| 7 | MC | | 1 | 1 | | | | | | 2 |
| TOTAL CREDITS | | | | | | | | | | 168 |

VERTICALS-MAJOR

| CODE | COURSE | L | T | P | Credit | Category |
|--|--|---|---|---|--------|----------------|
| SIGNAL PROCESSING | | | | | | |
| | SPEECH SIGNAL PROCESSING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | DSP ARCHITECTURE AND PROGRAMMING | 2 | 0 | 2 | 3 | VERTICAL-MAJOR |
| | BIOMEDICAL SIGNAL PROCESSING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | SIGNAL PROCESSING FOR COMMUNICATION | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | MULTIRATE SIGNAL PROCESSING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | STATISTICAL SIGNAL PROCESSING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | DIGITAL IMAGE AND VIDEO PROCESSING | 2 | 0 | 2 | 3 | VERTICAL-MAJOR |
| | AI-ML ALGORITHMS FOR IMAGE PROCESSING APPLICATIONS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| SENSOR TECHNOLOGIES AND IoT | | | | | | |
| | IoT PROCESSORS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | COMMUNICATION AND NETWORKING TECHNOLOGIES FOR IOT | 2 | 0 | 2 | 3 | VERTICAL-MAJOR |
| | WEARABLE TECHNOLOGY AND APPLICATIONS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | INDUSTRIAL IoT AND INDUSTRY 4.0 | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | SMART SENSORS AND APPLICATIONS FOR IOT | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | IoT EDGE COMPUTING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | MOBILE APP DEVELOPMENT FOR IoT | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | NANO SENSORS AND APPLICATIONS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| HIGH SPEED COMMUNICATIONS | | | | | | |
| | OPTICAL COMMUNICATION SYSTEMS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | SOFTWARE DEFINED RADIO ARCHITECTURE AND APPLICATIONS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | HIGH SPEED COMMUNICATION CIRCUITS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | 5G COMMUNICATION NETWORKS | 2 | 0 | 2 | 3 | VERTICAL-MAJOR |
| | WIRELESS BROADBAND NETWORKS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | MASSIVE MIMO NETWORKS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | MILLIMETER WAVE COMMUNICATION SYSTEMS | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | ADVANCED WIRELESS COMMUNICATION TECHNIQUES | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| SEMICONDUCTOR CHIP DESIGN AND TESTING | | | | | | |
| | WIDE BAND GAP DEVICES | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | SYSTEM DESIGN USING FPGA | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | LOW POWER IC DESIGN | 2 | 0 | 2 | 3 | VERTICAL-MAJOR |
| | VLSI TESTING AND DESIGN FOR TESTABILITY | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |

| | | | | | | |
|--|------------------------|---|---|---|---|----------------|
| | ANALOG IC DESIGN | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | MIXED SIGNAL IC DESIGN | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | VERILOG HDL | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |
| | VLSI SIGNAL PROCESSING | 3 | 0 | 0 | 3 | VERTICAL-MAJOR |

VERTICALS-MINOR

| CODE | COURSE | L | T | P | Credit | Category |
|---|---|---|---|---|--------|----------------|
| INTERNET OF EVERYTHING: SMART SENSING TECHNOLOGIES | | | | | | |
| | COMMUNICATION AND NETWORKING TECHNOLOGIES FOR IOT | 2 | 0 | 2 | 3 | VERTICAL-MINOR |
| | MOBILE APP DEVELOPMENT FOR IOT | 3 | 0 | 0 | 3 | VERTICAL-MINOR |
| | PYTHON PROGRAMMING FOR IOT APPLICATIONS | 2 | 0 | 2 | 3 | VERTICAL-MINOR |
| | NANO SENSORS AND APPLICATIONS | 3 | 0 | 0 | 3 | VERTICAL-MINOR |
| | SMART SENSORS AND APPLICATIONS FOR IOT | 3 | 0 | 0 | 3 | VERTICAL-MINOR |
| | IoT EDGE COMPUTING | 3 | 0 | 0 | 3 | VERTICAL-MINOR |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

B.E. – ELECTRICAL AND ELECTRONICS ENGINEERING

CURRICULUM AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|--|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2 | 23FYM113 | Linear Algebra and Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP113 | Electron Devices | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23FYC113 | Electrochemical Technologies | BSC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EE111 | Basics of Civil and Mechanical Engineering | ESC | 4 | 0 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| 6 | 23FPC122 | Basic Sciences Laboratory | BSC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23EE121 | Engineering Design Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 8 | 23EE122 | Engineering Graphics | ESC | 0 | 0 | 2 | 2 | 1 |
| ONE CREDIT COURSES | | | | | | | | |
| 9 | 23FYH121 | Heritage of Tamils/□□□□□□ □□□□ | OCC | | | | 15 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 10 | 23MC101 | Induction Programme | MC | | | | 15 Days | - |
| 11 | 23MC102 | Soft Skills | MC | | | | 15 | - |
| TOTAL | | | | 15 | 3 | 10 | 28 | 24 |

SEMESTER II

| COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS | |
|---------------------------|--------------|---|------------------|-----------|----------|-----------------------|-----------|-----------|
| | | | L | T | P | | | |
| THEORY | | | | | | | | |
| 1 | 23FYM213 | Differential Equations and Numerical Methods | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23EE211 | Electric and Magnetic Circuits | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23EE212 | Electrical Measurements and Instrumentation | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23EE213 | Digital Electronics | ESC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EE214 | Analog Electronic Circuits | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICAL | | | | | | | | |
| 6 | 23FYH221 | English Communication and Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23EE221 | Analog and Digital Electronics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8 | 23EE222 | C Programming and Databases Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSES | | | | | | | | |
| 9 | 23FYC221 | Environmental Science and Engineering | OCC | | | | 15 | 1 |
| 10 | 23FYH222 | Tamils and Technology | OCC | | | | 15 | 1 |
| 11 | 23CC | Co-Curricular Activities* | OCC | | | | 15 | 1 |
| | | 23CC221- NSS | | | | | | |
| | | 23CC222- YRC | | | | | | |
| | | 23CC223- RSP | | | | | | |
| | | 23CC224- Sports | | | | | | |
| TOTAL | | | | 15 | 1 | 12 | 28 | 25 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23M313 | Complex Analysis and Transforms | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23EE311 | Electric Circuit Analysis | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23EE312 | Electromagnetic Fields | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | 23EE313 | DC Machines and Transformers | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23EE314 | Linear Integrated circuits | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23EE321 | DC Machines and Transformers Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 7 | 23EE322 | Linear Integrated Circuits Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | 23EE323 | OOPS and C++ Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| ONE CREDIT COURSES | | | | | | | | |
| 9 | 23MC321 | Human Values and Professional Ethics | OCC | | | | 15 | 1 |
| 10 | 23MC322 | Design Thinking | OCC | | | | 15 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 11 | 23MC301 | Induction Programme | MC | | | | One week | - |
| TOTAL | | | | 15 | 3 | 8 | 26 | 24 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | AC Rotating Machines | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Transmission and Distribution of Electrical Power | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | | Signals and Networks | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | | Control Systems | PCC | 3 | 1 | 0 | 4 | 4 |
| 5 | | Digital System Design | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | AC Rotating Machines Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 7 | | Control & Instrumentation Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Digital System Design Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| ONE CREDIT COURSES | | | | | | | | |
| 9 | | Value Added Course-I | OCC | | | | 15 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 10 | | Community Service and Engineering | MC | | | | 15 | - |
| TOTAL | | | | 15 | 2 | 8 | 25 | 22 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|------------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Power System Analysis | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Power Electronics | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | | Embedded System Design | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Elective –I | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective –II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Power System Simulation Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Power Electronics Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | Embedded System Design Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 9 | | In-Plant Training | EEC | - | - | - | | 1 |
| ONE CREDIT COURSES | | | | | | | | |
| 10 | | Value Added Course-II | OCC | | | | 15 | 1 |
| 11 | | Seminar and Technical Writing | OCC | | | | 15 | 1 |
| TOTAL | | | | 15 | 1 | 6 | 22 | 22 |

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---------------------------|-------------|-------------------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Digital Protection of Power Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Electric Vehicles | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | | Data Structures and Algorithms | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Elective –III | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective –IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Power and Energy Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 7 | | Electric Vehicle Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 8 | | IoT Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 9 | | Mini Project | EEC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSES | | | | | | | | |
| 10 | | Hackathon | OCC | | | | 15 | 1 |
| TOTAL | | | | 15 | 0 | 10 | 25 | 21 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Generation of Electrical Energy | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Solid State Drives and Control | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | | Smart Grid | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | | Elective -V | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective -VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | | Electrical Drives Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 7 | | Industrial Automation Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8 | | Reverse Engineering and Product Realization Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 15 | 0 | 8 | 23 | 19 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | | Elective -VII | PEC | 3 | 0 | 0 | 3 | 3 |
| 2 | | Elective -VIII | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 3 | | PROJECT WORK AND VIVA-VOCE | EEC | 0 | 0 | 12 | 12 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|---|-------------|---|----------|---|---|---|-----------------|---------|
| I. ELECTRICAL MACHINES AND CONTROL | | | | | | | | |
| 1. | | Design of Electrical Machines | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Modeling and Analysis of Electrical Machines | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Digital Control Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | System Theory | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Robust Control | PE | 3 | 0 | 0 | 3 | 3 |
| II. POWER AND ENERGY | | | | | | | | |
| 1. | | Power and Energy Management | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Energy Storage Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Electrical Safety | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Energy Efficient Lighting System | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Power system design | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | High Voltage Transmission Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Deregulated Power System | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Utilization of Solar Energy | PE | 3 | 0 | 0 | 3 | 3 |
| III. ELECTRONIC DESIGN | | | | | | | | |
| 1. | | Real Time Embedded Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | VLSI Design | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | FPGA based System Design | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Robotics and control | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Digital Consumer technology | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Electronic Product Design | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Medical Electronics | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Multimedia system | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | MEMS & NEMS | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Wearable Sensors | PE | 3 | 0 | 0 | 3 | 3 |
| IV. COMPUTER AND COMMUNICATION | | | | | | | | |
| 1. | | Computer architecture and parallel processing | PE | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|-----|--|---|----|---|---|---|---|---|
| 2. | | Multi core architecture | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Data Communication networks | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Fog computing | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Internet of Things | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Data Analytics | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Virtual instrumentation | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Cyber Physical systems | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | Intelligent Techniques for Electrical Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Industrial Automation | PE | 3 | 0 | 0 | 3 | 3 |
| 11. | | Deep Learning | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | | Principles of Operating System | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | | Analog and digital communication | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | | Intelligent Vehicles | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|--------|-------------|---|----------|---|---|---|-----------------|---|--|
| 1. | | Energy Auditing | OE | 3 | 0 | 0 | 3 | 3 | Mech |
| 2. | | Solar and Wind Energy Systems | OE | 3 | 0 | 0 | 3 | 3 | Mech and Chemical |
| 3. | | Electrical Safety Procedures and Management | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 4. | | Energy Efficient Illumination Systems | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 5. | | Electric Vehicle Technology | OE | 3 | 0 | 0 | 3 | 3 | All Branches except Civil and Chemical |

SUMMARY

Category; BSC – Basic sciences, HSC– Humanities and Social Sciences, ESC–Engineering sciences, PCC –Professional Core, PEC- Professional Elective, OEC-Open Elective Course, EEC –Employability Enhancement Course, MC – Mandatory Course



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

B. E. Computer Science and Engineering

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2 | 23FYM115 | Matrices and Vector Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23FYP115 | Applied Physics | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23FYC115 | Applied Chemistry -I | BSC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CS111 | C Programming | ESC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23FYH122 | English Communication Skills Laboratory | BSC | 0 | 0 | 2 | 2 | 1 |
| 2 | 23CS121 | Engineering Graphics | BSC | 0 | 0 | 2 | 2 | 1 |
| 3 | 23CS122 | C Programming Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23FYH121 | Heritage of Tamils | HSC | 15 Hours | | | 15 Hours | 1 |
| 2 | 23MC101 | Induction Programme | MC | 15 Days | | | 15 Days | -- |
| 3 | 23MC102 | Soft Skills | EEC | 15 Hours | | | 15 Hours | -- |
| TOTAL | | | | 14 | 3 | 8 | 25 | 22 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|---|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23FYM215 | Fourier Series and Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23CS211 | Electron Devices | BSC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23FYC211 | Applied Chemistry -II | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23CS212 | Digital Design | ESC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CS213 | Object Oriented Programming | ESC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CS221 | Digital Design Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| 2 | 23CS222 | Object Oriented Programming Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| 3 | 23FPC221 | Basic Sciences Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23CC221/ 23CC222/ 23CC223/ 23CC224 | Co-Curricular Activities-NSS/YRC/RSP/Sports | MC | 15 Hours | | | 15 Hours | 1 |
| 2 | 23FYC221 | Environmental Science and Engineering | HSC | 15 Hours | | | 15 Hours | 1 |
| 3 | 23FYH222 | Tamils and Technology | HSC | 15 Hours | | | 15 Hours | 1 |
| TOTAL | | | | 15 | 1 | 08 | 24 | 23 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23M315 | Linear Algebra and Complex Variables | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23CS311 | Data Structures and Algorithms | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | 23CS312 | Discrete Mathematics | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23CS313 | Operating Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | 23CS314 | Java Programming | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | 23CS321 | Data Structures and Algorithms Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 2 | 23CS322 | Operating Systems Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 3 | 23CS323 | Java Programming Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 1 | 23MC301 | Induction Programme | MC | 1 Week | | | 1 Week | - |
| 2 | 23MC321 | Human Values and Professional Ethics | MC | 15 Hours | | | 15 Hours | 1 |
| 3 | 23MC322 | Design Thinking | EEC | 15 Hours | | | 15 Hours | 1 |
| TOTAL | | | | 15 | 2 | 8 | 25 | 23 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | T1 | Design and Analysis of Algorithm | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | T2 | Database Management Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | T3 | Statistical Data Analysis | BSC | 3 | 0 | 0 | 3 | 3 |
| 4 | T4 | Computer Architecture | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | T5 | Formal Languages and Automata Theory | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | P1 | Database Management Systems Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 2 | P2 | Design and Analysis of Algorithm Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 3 | P3 | Python Programming | BSC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | MC1 | Value Added Course - I | EEC | 15 Hours | | | 15 Hours | - |
| 2 | MC2 | Community Service and Engineering | MC | 15 Hours | | | 15 Hours | - |
| TOTAL | | | | 15 | 1 | 10 | 26 | 21 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|-------------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | T1 | Computer Networks | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | T2 | Software Engineering | PCC | 2 | 0 | 2 | 4 | 3 |
| 3 | T3 | Compiler Design | PCC | 3 | 1 | 0 | 4 | 4 |
| 4 | T4 | Elective –I | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | T5 | Elective –II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | P1 | Computer Networks Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 2 | P2 | Compiler Design Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 3 | P3 | Web Technology Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| | | Inplant Training | EEC | 2 weeks | | | 2 weeks | 1 |
| MANDATORY COURSES | | | | | | | | |
| 1 | MC1 | Seminar And Technical Writing | EEC | 15 Hours | | | 15 Hours | 1 |
| 2 | MC2 | Value Added Course - II | MC | 15 Hours | | | 15 Hours | - |
| TOTAL | | | | 14 | 1 | 10 | 25 | 22 |

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | T1 | Embedded Systems and Internet Of Things | PCC | 3 | 0 | 0 | 3 | 3 |
| 2 | T2 | Machine Learning | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | T3 | Data Mining and Data Warehousing | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | T4 | Elective - III | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | T5 | Elective - IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | P1 | Embedded Systems & Internet of Things Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 2 | P2 | Machine Learning Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 3 | P3 | Exploratory Data Analysis Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| | | Innovation and Practices | EEC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 1 | MC1 | HACKATHON | EEC | 15 Hours | | | 15 Hours | 1 |
| TOTAL | | | | 15 | 0 | 12 | 27 | 22 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|------------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | T1 | Artificial Intelligence | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | T2 | Cryptography and Network Security | PCC | 3 | 1 | 0 | 4 | 4 |
| 3 | T3 | Big Data Analytics | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | T4 | Elective -V | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | T5 | Elective –VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | P1 | Artificial Intelligence Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 2 | P2 | Network Security Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| 3 | P3 | Big Data Analytics Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| TOTAL | | | | 15 | 2 | 8 | 25 | 21 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|-------------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | T1 | Elective –VII | PEC/O EC | 3 | 0 | 0 | 3 | 3 |
| 2 | T2 | Elective –VIII | PEC/O EC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 1 | P1 | Project Work and Viva-Voce | EEC | 0 | 0 | 12 | 12 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 1. | PE1 | UNIX INTERNALS | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | PE2 | DIGITAL MARKETING | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | PE3 | ENTERPRISE RESOURCE MANAGEMENT | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | PE4 | DIGITAL FORENSICS | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | PE5 | SOFTWARE PROJECT MANAGEMENT | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | PE6 | SOFTWARE TESTING AND QUALITY ASSURANCE | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | PE7 | RECOMMENDER SYSTEMS. | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | PE8 | ENGINEERING ECONOMICS AND MANAGEMENT | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | PE9 | CUSTOMER RELATIONSHIP AND MANAGEMENT | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | PE10 | SOFT COMPUTING | PE | 3 | 0 | 0 | 3 | 3 |
| 11. | PE11 | MULTIMEDIA AND ANIMATION | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | PE12 | MOBILE COMPUTING | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | PE13 | OBJECT ORIENTED ANALYSIS AND DESIGN | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | PE14 | AD HOC NETWORKS | PE | 3 | 0 | 0 | 3 | 3 |
| 15. | PE15 | WIRELESS SENSOR NETWORKS | PE | 3 | 0 | 0 | 3 | 3 |
| 16. | PE16 | KNOWLEDGE ENGINEERING | PE | 3 | 0 | 0 | 3 | 3 |
| 17. | PE17 | DATA SCIENCE | PE | 3 | 0 | 0 | 3 | 3 |
| 18. | PE18 | ROBOTIC PROCESS AUTOMATION | PE | 3 | 0 | 0 | 3 | 3 |
| 19. | PE19 | QUANTUM COMPUTING | PE | 3 | 0 | 0 | 3 | 3 |
| 20. | PE20 | CYBER SECURITY | PE | 2 | 0 | 2 | 4 | 3 |
| 21. | PE21 | CRYPTOCURRENCY AND BLOCKCHAIN TECHNOLOGIES | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|--------|-------------|--|----------|---|---|---|-----------------|---|--------------|
| 1. | OE1 | Introduction to Customer Relationship Management | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 2. | OE2 | Fundamentals of Software Engineering | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 3. | OE3 | Internet Programming | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 4. | OE4 | Introduction to Data Warehousing and Data Mining | OE | 3 | 0 | 0 | 3 | 3 | All Branches |
| 5. | OE5 | Introduction to Embedded Systems | OE | 3 | 0 | 0 | 3 | 3 | All Branches |

Professional Electives for Major Verticals

| Vertical 1 - Web Technology Frameworks | | | | | | |
|--|---------------------------|---|---|---|---|--|
| Course Code | Course Name | L | T | P | C | |
| V11 | FRONT END WEB DEVELOPMENT | 2 | 0 | 2 | 3 | |
| V12 | JAVASCRIPT FRAMEWORKS | 2 | 0 | 2 | 3 | |
| V13 | BACKEND WEB DEVELOPMENT | 2 | 0 | 2 | 3 | |
| V14 | WEB SERVER ADMINISTRATION | 2 | 0 | 2 | 3 | |
| V15 | APPLICATION DEVELOPMENT | 2 | 0 | 2 | 3 | |
| V16 | DEVOPS | 2 | 0 | 2 | 3 | |

| Vertical 2 - Cloud Computing Technologies | | | | | | |
|---|-------------------------------|---|---|---|---|--|
| Course Code | Course Name | L | T | P | C | |
| V21 | OPEN SOURCE SYSTEMS | 2 | 0 | 2 | 3 | |
| V22 | DISTRIBUTED SYSTEMS | 3 | 0 | 0 | 3 | |
| V23 | STORAGE TECHNOLOGIES | 3 | 0 | 0 | 3 | |
| V24 | VIRTUALIZATION | 3 | 0 | 0 | 3 | |
| V25 | CLOUD COMPUTING | 3 | 0 | 0 | 3 | |
| V26 | SECURITY AND PRIVACY IN CLOUD | 3 | 0 | 0 | 3 | |

| Vertical 3 - Artificial Intelligence, Machine Learning and Data Science | | | | | | |
|---|-----------------------------------|---|---|---|---|--|
| Course Code | Course Name | L | T | P | C | |
| V31 | EXPLORATORY DATA ANALYSIS | 3 | 0 | 0 | 3 | |
| V32 | GENERATIVE AI | 2 | 0 | 2 | 3 | |
| V33 | NEURAL NETWORKS AND DEEP LEARNING | 3 | 0 | 0 | 3 | |
| V34 | NATURAL LANGUAGE PROCESSING | 2 | 0 | 2 | 3 | |
| V35 | COMPUTER VISION | 3 | 0 | 0 | 3 | |
| V36 | EVOLUTIONARY ALGORITHMS | 3 | 0 | 0 | 3 | |

| Vertical 4 - Creative Media | | | | | |
|------------------------------------|---|----------|----------|----------|----------|
| Course Code | Course Name | L | T | P | C |
| V37 | MULTIMEDIA DATA COMPRESSION AND STORAGE | 3 | 0 | 0 | 3 |
| V38 | VIDEO CREATION AND EDITING | 2 | 0 | 2 | 3 |
| V39 | UI AND UX DESIGN | 2 | 0 | 2 | 3 |
| V40 | DIGITAL MARKETING | 2 | 0 | 2 | 3 |
| V41 | VISUAL EFFECTS | 2 | 0 | 2 | 3 |
| V42 | GAME DEVELOPMENT | 2 | 0 | 2 | 3 |

Minor Vertical Offered for Other Departments

| Minor Vertical – Cyber Physical Systems | | | | | |
|--|--|----------|----------|----------|----------|
| Course Code | Course Name | L | T | P | C |
| MV1 | CYBER PHYSICAL SYSTEMS | 3 | 0 | 0 | 3 |
| MV2 | COMMUNICATIONS FOR CYBER PHYSICAL SYSTEMS | 3 | 0 | 0 | 3 |
| MV3 | MALWARE ANALYSIS | 3 | 0 | 0 | 3 |
| MV4 | SECURITY AND PRIVACY OF CYBER PHYSICAL SYSTEMS | 2 | 0 | 2 | 3 |
| MV5 | RISK ANALYSIS | 3 | 0 | 0 | 3 |
| MV6 | COMPUTER FORENSICS | 3 | 0 | 0 | 3 |

SUMMARY

Category; BSC – Basic sciences, HSC– Humanities and Social Sciences, ESC–Engineering sciences, PCC –Professional Core, PEC- Professional Elective, OEC-Open Elective Course, EEC – Employability Enhancement Course, MC – Mandatory Course

| B.E. | | | | | | | | | | |
|----------------------|---------------------|-----------------------------|-----------|------------|-----------|----------|-----------|------------|-------------|----------------------|
| Sl. No. | Subject Area | Credits per Semester | | | | | | | | Credits Total |
| | | I | II | III | IV | V | VI | VII | VIII | |
| 1 | HSC | 4 | 2 | | | | | | | 6 |
| 2 | BSC | 12 | 10 | 7 | 5 | | | | | 34 |
| 3 | ESC | 5 | 8 | | | | | | | 13 |
| 4 | PCC | 14 | 16 | 14 | 13 | 15 | | | | 72 |
| 5 | PEC/OEC | | | | | 6 | 6 | 6 | 6 | 24 |
| 6 | EEC | | | 1 | | 2 | 3 | | 6 | 12 |
| 7 | MC | 1 | 3 | 1 | | | | | | 5 |
| TOTAL CREDITS | | | | | | | | | | 166 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF INFORMATION TECHNOLOGY
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDIT S |
|--------------------------|-------------|------------------------------|-----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| T2 | 23FYM115 | Matrices and Vector Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| T3 | 23FYP115 | Applied Physics | BSC | 3 | 0 | 0 | 3 | 3 |
| T4 | 23FYC115 | Applied Chemistry-I | BSC | 3 | 0 | 0 | 3 | 3 |
| T5 | 23IT111 | Problem Solving using C | ESC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | 23FPC122 | Basic Sciences Laboratory | BSC | 0 | 0 | 4 | 4 | 2 |
| P2 | 23IT121 | Engineering Graphics | ESC | 0 | 0 | 4 | 4 | 2 |
| P3 | 23IT122 | C Programming Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | 23MC101 | Induction Programme | MC | 15 Days | | | - | - |
| MC2 | 23FYH121 | Heritage of Tamils | MC | 15 Hrs | | | - | 1 |
| MC3 | 23MC102 | Soft Skills | EEC | 15 Hrs | | | - | - |
| TOTAL | | | | 14 | 3 | 10 | 27 | 23 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | T TAL CONTACT PERIODS | CREDITS |
|--------------------------|--|---|-----------|------------------|---|---|-----------------------|---------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | 23FYM215 | Fourier Series and Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| T2 | 23IT211 | Electronic Devices | BSC | 3 | 0 | 0 | 3 | 3 |
| T3 | 23IT212 | Digital Logic and Design | PCC | 3 | 0 | 0 | 3 | 3 |
| T4 | 23IT213 | Python Programming | PCC | 3 | 0 | 0 | 3 | 3 |
| T5 | 23IT214 | Computational Thinking | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | 23FYH221 | English Communication Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| P2 | 23IT221 | Digital Logic and Design Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| P3 | 23IT222 | Python Programming Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | 23CC221 23CC222 23CC223 23CC224 | Cocurricular Activities* NSS YRC RSP Sports | MC | 15 Hrs | | | - | 1 |
| MC2 | 23FYC221 | Environmental Science and Engineering | MC | 15 Hrs | | | - | 1 |

| | | | | | | | | |
|--------------|----------|---|----|-----------|----------|----------|-----------|-----------|
| MC3 | 23FYH222 | Tamils and Technology (தமிழ் தொழில் நுட்பம்) | MC | 15 Hrs | | | - | 1 |
| TOTAL | | | | 15 | 1 | 8 | 24 | 23 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | Linear Algebra, Complex Variables and Transforms | BSC | 3 | 1 | 0 | 4 | 4 |
| T2 | | Data Structures and Algorithms-I | PCC | 3 | 1 | 0 | 4 | 4 |
| T3 | | Computer Organization and Architecture | PCC | 3 | 0 | 0 | 3 | 3 |
| T4 | | Object Oriented Paradigms and Java | PCC | 3 | 0 | 0 | 3 | 3 |
| T5 | | Database Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | | Data Structures and Algorithms Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| P2 | | Database Systems Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| P3 | | Object Oriented Paradigms and Java Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | | INDUCTION PROGRAMME | MC | 1 Week | | | - | - |
| MC2 | | Human Values and Professional Ethics | MC | 15 Hrs | | | - | 1 |
| MC3 | | Design Thinking | EEC | 15 Hrs | | | - | 1 |
| TOTAL | | | | 15 | 2 | 8 | 25 | 23 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | Discrete Mathematics and Automata Theory | PCC | 3 | 1 | 0 | 4 | 4 |
| T2 | | Computer Networks | PCC | 3 | 0 | 0 | 3 | 3 |
| T3 | | Internet Technology and Web Services | PCC | 3 | 0 | 0 | 3 | 3 |
| T4 | | Principles of Operating Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| T5 | | Data Structures and Algorithms-II | PCC | 3 | 1 | 0 | 4 | 4 |
| PRACTICALS | | | | | | | | |
| P1 | | Computer Network Programming Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| P2 | | Internet Technology and Web Services Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| P3 | | Operating Systems Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | | Value Added Course I | EEC | 15 Hrs | | | - | - |
| MC2 | | Community Services and Engineering | MC | 15 Hrs | | | - | - |
| TOTAL | | | | 15 | 2 | 10 | 27 | 22 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | Statistics for Data Science and Data Mining | PCC | 3 | 1 | 0 | 4 | 4 |
| T2 | | Principles of Software Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| T3 | | Embedded Systems and IoT | PCC | 3 | 0 | 0 | 3 | 3 |
| T4 | | ELECTIVE –I | PEC | 3 | 0 | 0 | 3 | 3 |
| T5 | | ELECTIVE –II | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | | Embedded Systems and IoT Lab | PCC | 0 | 0 | 2 | 2 | 1 |
| P2 | | Data Mining Lab | PCC | 0 | 0 | 4 | 4 | 2 |
| P3 | | Open Source Systems Lab | PCC | 0 | 0 | 2 | 2 | 1 |
| | | INPLANT TRAINING | EEC | 14 days | | | - | 1 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | | Seminar And Technical Writing | EEC | 15 Hrs | | | - | 1 |
| MC2 | | Value Added Course II | EEC | 15 Hrs | | | - | - |
| TOTAL | | | | 15 | 1 | 8 | 24 | 22 |

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | Artificial Intelligence | PCC | 3 | 0 | 0 | 3 | 3 |
| T2 | | Cryptography and Network Security | PCC | 3 | 0 | 0 | 3 | 3 |
| T3 | | Machine Learning | PCC | 3 | 0 | 0 | 3 | 3 |
| T4 | | ELECTIVE -III | PEC | 3 | 0 | 0 | 3 | 3 |
| T5 | | ELECTIVE -IV | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | | Artificial Intelligence Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| P2 | | Data Visualization Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| P3 | | Mobile Application Development Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| | | MINI PROJECT | EEC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| MC1 | | Hackathon | MC | 15 Hrs | | | - | 1 |
| TOTAL | | | | 15 | 0 | 12 | 27 | 22 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|-----------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | Big Data Analytics | PCC | 3 | 0 | 0 | 3 | 3 |
| T2 | | Cyber-Physical Systems | PCC | 3 | 0 | 0 | 3 | 3 |
| T3 | | Full Stack Development | PCC | 3 | 1 | 0 | 4 | 4 |
| T4 | | ELECTIVE –V | PEC | 3 | 0 | 0 | 3 | 3 |
| T5 | | ELECTIVE –VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | | Full Stack Development Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| P2 | | Big Data Analytics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| P3 | | DevOps Laboratory | PCC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 15 | 1 | 8 | 24 | 21 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| T1 | | ELECTIVE –VII | PEC | 3 | 0 | 0 | 3 | 3 |
| T2 | | ELECTIVE -VIII | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| P1 | | PROJECT WORK AND VIVA-VOCE | EEC | 0 | 0 | 12 | 12 | 6 |
| TOTAL | | | | 6 | 0 | 12 | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--------------------------------------|----------|---|---|---|-----------------|---------|
| 1. | | Advanced Algorithms | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Advanced Computer Architecture | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Compiler Design | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Computer Vision and Image Processing | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Distributed Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Edge and Fog Computing | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Graph Theory | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Graphics and Multimedia Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | Image and Video Analytics | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Open Source Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 11. | | Optimization Techniques | PE | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|-----|--|---|----|---|---|---|---|---|
| 12. | | Parallel Computing | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | | Soft computing | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | | User Experience (UX) Design for Extended Reality (XR) | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|--------|-------------|-----------------------------------|----------|---|---|---|-----------------|---|---------------------------------|
| 1. | | Programming in java | OE | 3 | 0 | 0 | 3 | 3 | Civil, Mech, EEE, ECE, Chemical |
| 2. | | Cloud Computing Fundamentals | OE | 3 | 0 | 0 | 3 | 3 | Civil, Mech, EEE, ECE, Chemical |
| 3. | | Information Security Fundamentals | OE | 3 | 0 | 0 | 3 | 3 | Civil, Mech, EEE, ECE, Chemical |

LIST OF MAJOR VERTICALS:

DATA ANALYTICS:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|-----------------------------|----------|---|---|---|-----------------|---------|
| 1. | | Deep Learning | | 3 | 0 | 0 | 3 | 3 |
| 2. | | Business Intelligence | | 3 | 0 | 0 | 3 | 3 |
| 3. | | Social Network Analysis | | 3 | 0 | 0 | 3 | 3 |
| 4. | | Natural Language Processing | | 3 | 0 | 0 | 3 | 3 |
| 5. | | Web Mining | | 3 | 0 | 0 | 3 | 3 |
| 6. | | Healthcare Data Analytics | | 3 | 0 | 0 | 3 | 3 |

CLOUD APPLICATIONS AND SERVICES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|---------------------------------------|----------|---|---|---|-----------------|---------|
| 1. | | Cloud Computing | | 3 | 0 | 0 | 3 | 3 |
| 2. | | Virtualization Techniques | | 3 | 0 | 0 | 3 | 3 |
| 3. | | Cloud Native Application Development | | 3 | 0 | 0 | 3 | 3 |
| 4. | | Virtual Reality and Augmented Reality | | 3 | 0 | 0 | 3 | 3 |
| 5. | | Semantic Web | | 3 | 0 | 0 | 3 | 3 |
| 6. | | Human Computer Interaction | | 3 | 0 | 0 | 3 | 3 |

NETWORKS AND SECURITY:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|------------------------------|----------|---|---|---|-----------------|---------|
| 1. | | Mobile Computing | | 3 | 0 | 0 | 3 | 3 |
| 2. | | Advanced Computer Networks | | 3 | 0 | 0 | 3 | 3 |
| 3. | | Digital and Mobile Forensics | | 3 | 0 | 0 | 3 | 3 |
| 4. | | Blockchain Technology | | 3 | 0 | 0 | 3 | 3 |
| 5. | | Cyber Security | | 3 | 0 | 0 | 3 | 3 |
| 6. | | Ethical Hacking | | 3 | 0 | 0 | 3 | 3 |

SOFTWARE PROCESS AND MANAGEMENT:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 1. | | Software Metrics and Measurement | | 3 | 0 | 0 | 3 | 3 |
| 2. | | Software Testing and Quality Assurance | | 3 | 0 | 0 | 3 | 3 |
| 3. | | Customer Relationship Management | | 3 | 0 | 0 | 3 | 3 |
| 4. | | Enterprise Resource Planning | | 3 | 0 | 0 | 3 | 3 |
| 5. | | Software Project Management | | 3 | 0 | 0 | 3 | 3 |
| 6. | | Agile Technology | | 3 | 0 | 0 | 3 | 3 |

LIST OF MINOR VERTICALS:**DATA SCIENCE:**

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|-----------------------------------|----------|---|---|---|-----------------|---------|
| 1. | | Database Systems | | 3 | 0 | 0 | 3 | 3 |
| 2. | | Data Structures and Algorithms | | 3 | 0 | 0 | 3 | 3 |
| 3. | | Statistics for Data Science | | 3 | 0 | 0 | 3 | 3 |
| 4. | | Applied Data Science using Python | | 3 | 0 | 0 | 3 | 3 |
| 5. | | Applied Machine Learning | | 3 | 0 | 0 | 3 | 3 |
| 6. | | Data Visualization | | 3 | 0 | 0 | 3 | 3 |
| 7. | | Data Engineering | | 3 | 0 | 0 | 3 | 3 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)

DEPARTMENT OF CHEMICAL ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM
CURRICULA AND SYLLABI

B.TECH. CHEMICAL ENGINEERING

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23FYH111 | Technical English | HSC | 2 | 2 | 0 | 4 | 4 |
| 2. | 23FYM116 | Differential Calculus and Integral Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 3. | 23FYP116 | Physics for Chemical Engineers | BSC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23FYC116 | Physical Chemistry | BSC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23CH111 | Mechanics of Solids | ESC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23CH112 | Fundamentals of Computing | ESC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 7. | 23CH121 | Engineering Graphics | ESC | 0 | 0 | 2 | 2 | 1 |
| 8. | 23CH122 | Computer Laboratory | ESC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9. | 23FYH121 | Heritage of Tamils | MC | 15 Hours | | | - | 1 |
| 10. | 23MC101 | Soft Skills | MC | 15 Hours | | | - | - |
| 11. | 23MC102 | Induction Programme | MC | 15 Days | | | - | - |
| TOTAL | | | | 17 | 3 | 4 | 24 | 23 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23FYM216 | Matrices, Fourier Series and Transforms | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | 23FYP213 | Material Science | BSC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23FYC212 | Organic Chemistry | BSC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23CH211 | Heat Power Engineering | ESC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23CH212 | Electrical Drives and Control | ESC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23CH213 | Introduction to Chemical Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 7. | 23FYH221 | English Communication and Competency Laboratory | HSC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23FPC221 | Basic Sciences Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSES | | | | | | | | |
| 9. | 23FYC221 | Environmental Science & Engineering | MC | 15 Hours | | | - | 1 |
| 10. | 23FYH222 | Tamils and Technology | MC | 15 Hours | | | - | 1 |
| 11. | 23CC | Co-curricular Activities | MC | 15 Hours | | | - | 1 |
| TOTAL | | | | 18 | 1 | 8 | 27 | 26 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23M316 | Differential Equations and Boundary Value Problems | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | 23CH311 | Biology for Chemical Engineers | BSC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23CH312 | Fluid Mechanics for Chemical Engineers | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23CH313 | Process Instrumentation | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23CH314 | Chemical Process Industries | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23CH315 | Chemical Process Calculations | PCC | 3 | 1 | 0 | 4 | 3 |
| PRACTICALS | | | | | | | | |
| 7. | 23CH321 | Physical and Organic Chemistry Laboratory | ESC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | 23CH322 | Electrical Drive Laboratory | ESC | 0 | 0 | 3 | 3 | 1.5 |
| MANDATORY COURSES | | | | | | | | |
| 9. | 23MC301 | Induction Programme | MC | 15 Hours | | | - | - |
| 10. | 23MC321 | Human Values and Professional Ethics | OC | 15 Hours | | | - | 1 |
| 11. | 23MC322 | Design Thinking | EEC | 15 Hours | | | - | 1 |
| TOTAL | | | | 18 | 2 | 6 | 26 | 25 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Probability and Statistics | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | | Mechanical Operations | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Heat Transfer | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Mass Transfer-I | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Chemical Engineering Thermodynamics | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Instrumental Methods of Analysis | PCC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 7. | | Fluid Mechanics Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | | Technical and Instrumental Analysis Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| MANDATORY COURSES | | | | | | | | |
| 9. | | Community Service Engineering | EEC | 15 Hours | | | - | - |
| 10. | | Value added Courses-I | MC | 15 Hours | | | - | - |
| TOTAL | | | | 18 | 1 | 6 | 25 | 22 |

SEMESTER V

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Numerical Methods in Chemical Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Mass Transfer-II | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Chemical Reaction Engineering-I | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Chemical Process Safety | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective-I | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Elective-II | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 7. | | Heat Transfer Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | | Mechanical Operations Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| INTERNSHIP | | | EEC | 0 | 0 | 2 | 2 | 1 |
| MANDATORY COURSES | | | | | | | | |
| 9. | | Seminar and Technical Writing | MC | 15 Hours | | | - | - |
| 10. | | Value added Course-II | EEC | 15 Hours | | | - | 1 |
| TOTAL | | | | 18 | 2 | 6 | 26 | 23 |

SEMESTER VI

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------------|-------------|---|-----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Process Dynamics and Control | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Chemical Reaction Engineering-II | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Applied Mathematics in Chemical Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Biochemical Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective-III | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Elective-IV | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICAL | | | | | | | | |
| 7. | | Mass Transfer Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | | Reaction Engineering Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| | | MINI PROJECT | EEC | 0 | 0 | 4 | 4 | 2 |
| MANDATORY COURSE | | | | | | | | |
| 9. | | Hackathon | EEC | 0 | 0 | 2 | 2 | 1 |
| TOTAL | | | | 18 | 0 | 12 | 30 | 24 |

SEMESTER VII

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|---|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Transport Phenomena | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Process Economics and Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Process Modeling and Simulation | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Process Plant Utilities | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective-V | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Elective-VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| | | Process Equipment Design and Drawing | PCC | 0 | 0 | 3 | 3 | 1.5 |
| | | Process Control and Simulation Laboratory | PCC | 0 | 0 | 3 | 3 | 1.5 |
| TOTAL | | | | 18 | 0 | 6 | 24 | 21 |

SEMESTER VIII

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|----------------------------|-----------|------------------|---|----|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| | | Elective-VII | PEC | 3 | 0 | 0 | 3 | 3 |
| | | Elective-VIII | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| | | Project Work and Viva-Voce | EEC | 0 | 0 | 12 | 12 | 6 |
| | | | | | | | 18 | 12 |

LIST OF PROFESSIONAL ELECTIVE COURSES

| SI. No | COURSE CODE | COURSE TITLE | CATE GORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|-----------|---|---|---|-----------------|---------|
| 1. | | Advanced Separation Processes | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | | Carbon Capture | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | | Colloid and Interfacial Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | | Computer Aided Process Equipment Design | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | | Drugs and Pharmaceuticals Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | | Energy Management in Chemical Industries | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | | Fertilizer Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | | Fluidization Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | | Food Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | | Integrated Design of Chemical Process | PE | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|--|--|---|----|---|---|---|---|---|
| 11. | | Technology of Composites | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | | Mineral Processing Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | | Nanoscience and Nanotechnology for Chemical Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | | Pilot Plant Scaleup Methods | PE | 3 | 0 | 0 | 3 | 3 |
| 15. | | Polymer Science and Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 16. | | Process Automation | PE | 3 | 0 | 0 | 3 | 3 |
| 17. | | Process Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 18. | | Pulp and Paper Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 19. | | Sugar Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 20. | | Surface Coating Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 21. | | Total Quality Management | PE | 3 | 0 | 0 | 3 | 3 |
| <u>VERTICAL-I PETROLEUM PROCESS TECHNOLOGY</u> | | | | | | | | |
| 22. | | Petroleum Chemistry | PE | 3 | 0 | 0 | 3 | 3 |
| 23. | | Primary Refining Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 24. | | Secondary Refining Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 25. | | Refinery advancements and regulations | PE | 3 | 0 | 0 | 3 | 3 |
| 26. | | Petroleum Equipment Design | PE | 3 | 0 | 0 | 3 | 3 |
| 27. | | Petrochemical Technology | PE | 3 | 0 | 0 | 3 | 3 |
| <u>VERTICAL-II ENERGY ENGINEERING</u> | | | | | | | | |
| 28. | | Bio Energy | PE | 3 | 0 | 0 | 3 | 3 |
| 29. | | Renewable Energy | PE | 3 | 0 | 0 | 3 | 3 |
| 30. | | Hydrogen and Fuel Cell Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 31. | | Power Plant Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 32. | | Non-renewable Energy sources | PE | 3 | 0 | 0 | 3 | 3 |
| 33. | | Sustainability Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| <u>VERTICAL-III INDUSTRIAL BIOTECHNOLOGY</u> | | | | | | | | |
| 34. | | Bio Chemistry | PE | 3 | 0 | 0 | 3 | 3 |
| 35. | | Bioprocess Technology | PE | 3 | 0 | 0 | 3 | 3 |
| 36. | | Fermentation & Bioprocessing | PE | 3 | 0 | 0 | 3 | 3 |
| 37. | | Bio Separation & Downstream processing | PE | 3 | 0 | 0 | 3 | 3 |
| 38. | | Enzyme Immobilisation | PE | 3 | 0 | 0 | 3 | 3 |
| 39. | | Bio Reactor Design | PE | 3 | 0 | 0 | 3 | 3 |
| <u>VERTICAL-IV ENVIRONMENTAL AND SAFETY ENGINEERING</u> | | | | | | | | |
| 40. | | Air Pollution Engineering | PE | 3 | 0 | 0 | 3 | 3 |
| 41. | | Waste Water Treatment | PE | 3 | 0 | 0 | 3 | 3 |
| 42. | | Solid waste Management | PE | 3 | 0 | 0 | 3 | 3 |
| 43. | | Environmental Impact Assessment | PE | 3 | 0 | 0 | 3 | 3 |
| 44. | | Process Safety Management | PE | 3 | 0 | 0 | 3 | 3 |
| 45. | | Risk and Hazop Analysis | PE | 3 | 0 | 0 | 3 | 3 |
| <u>VERTICAL-V COMPUTER APPLICATIONS IN CHEMICAL ENGINEERING</u> | | | | | | | | |
| 46. | | Computational Techniques | PE | 3 | 0 | 0 | 3 | 3 |
| 47. | | Optimization of Chemical Processes | PE | 3 | 0 | 0 | 3 | 3 |
| 48. | | Pinch Analysis and Heat Exchanger networks | PE | 3 | 0 | 0 | 3 | 3 |
| 49. | | Chemical Process Flow sheeting | PE | 3 | 0 | 0 | 3 | 3 |
| 50. | | Computational Fluid Dynamics | PE | 3 | 0 | 0 | 3 | 3 |
| 51. | | Design and Analysis of experiments | PE | 3 | 0 | 0 | 3 | 3 |

| <u>VERTICAL-VICHEMICAL PLANT DESIGN</u> | | | | | | | | |
|--|--|--|----|---|---|---|---|---|
| 52. | | Chemical Plant Design | PE | 3 | 0 | 0 | 3 | 3 |
| 53. | | Plant Layout | PE | 3 | 0 | 0 | 3 | 3 |
| 54. | | Design Safety | PE | 3 | 0 | 0 | 3 | 3 |
| 55. | | Material Selection | PE | 3 | 0 | 0 | 3 | 3 |
| 56. | | Statutory Requirements & Customer Care | PE | 3 | 0 | 0 | 3 | 3 |
| 57. | | Piping and Instrumentation | PE | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | UG PROGRAMME |
|---|-------------|--|----------|---|---|---|-----------------|---|--------------|
| 1. | | Industrial Safety Engineering | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 2. | | Risk Analysis and Hazop | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 3. | | Green Technology | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 4. | | Corrosion Science and Engineering | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 5. | | Nanomaterial Synthesis and Characterization Laboratory | OE | 0 | 0 | 6 | 6 | 3 | ALL |
| 6. | | Multivariate Statistics Laboratory | OE | 0 | 0 | 6 | 6 | 3 | ALL |
| <u>VERTICAL - ENVIRONMENTAL AND SUSTAINABILITY ENGINEERING</u> | | | | | | | | | |
| 7. | | Sustainable Infrastructure Development | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 8. | | Materials for Energy Sustainability | OE | 3 | 0 | 0 | 3 | 3 | ALL |
| 9. | | Environmental Quality Monitoring | OE | 3 | 0 | 0 | 3 | 3 | ALL |

LIST OF VALUE-ADDED COURSES

| S.NO | Name of the Course |
|------|---|
| 1. | Critical Thinking |
| 2. | Creativity & Innovation |
| 3. | Leadership |
| 4. | Emotional Intelligence |
| 5. | Health and Lifestyle |
| 6. | Psychology for Engineers |
| 7. | Fundamentals of Nanoscience |
| 8. | An Introduction to Environmental Ethics |
| 9. | Corporate Social Responsibilities |
| 10. | Energy Materials, Devices and Systems |
| 11. | Surface Engineering of Nanomaterials |
| 12. | Research Skills |

SUMMARY

Category; BSC – Basic sciences, HSC– Humanities and Social Sciences, ESC–Engineering sciences, PCC –Professional Core, PEC- Professional Elective, OEC-Open Elective Course, EEC –Employability Enhancement Course, MC – Mandatory Course

| B.E. CIVIL ENGINEERING | | | | | | | | | | |
|------------------------|--------------|----------------------|----|-----|----|----|----|-----|------|---------------|
| Sl. No. | Subject Area | Credits per Semester | | | | | | | | Credits Total |
| | | I | II | III | IV | V | VI | VII | VIII | |
| 1 | HSC | 4 | 2 | - | - | - | - | | | 6 |
| 2 | BSC | 10 | 10 | 7 | 4 | - | - | | | 31 |
| 3 | ESC | 8 | 8 | 3 | - | - | - | | | 19 |
| 4 | PCC | - | 3 | 13 | 18 | 15 | 15 | 15 | | 79 |
| 5 | PEC | - | - | - | - | 3 | 3 | 6 | 6 | 18 |
| 6 | OEC | - | - | - | - | 3 | 3 | | | 6 |
| 7 | EEC | - | - | 0 | - | 2 | 2 | | 6 | 10 |
| 8 | MC | 1 | 3 | 1 | - | 1 | 1 | | | 7 |
| TOTAL CREDITS | | | | | | | | | | 176 |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

COIMBATORE - 641 014, TAMILNADU, INDIA



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

B.TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Curriculum and Syllabi

(R2021)

Under Choice Based Credit System

(For the students admitted during the academic year 2021 - 2022 and onwards)

**SUBJECTS OF STUDY
SEMESTER I**

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|----------------------------------|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21FYM14 | Matrices and Calculus | BS | 3 | 1 | 0 | 4 |
| 21FYE11 | Technical English | HS | 2 | 0 | 1 | 2 |
| 21FYP13 | Engineering Physics | BS | 3 | 0 | 0 | 3 |
| 21FYC11 | Engineering Chemistry | BS | 3 | 0 | 0 | 3 |
| 21CS11 | C Programming | ES | 3 | 0 | 0 | 3 |
| 21CSL11 | C Programming Laboratory | ES | 0 | 0 | 4 | 2 |
| 21PL11 | Physics Laboratory I | BS | 0 | 0 | 2 | 0.5 |
| 21CL11 | Chemistry Laboratory I | BS | 0 | 0 | 2 | 0.5 |
| 21MEL12 | Engineering Practices Laboratory | BS | 0 | 0 | 2 | 1 |
| 21FYEL11 | Employability Skills | EEC | 0 | 0 | 2 | 1 |
| Total Credits | | | | | | 20 |

SEMESTER 8

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|---|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21FYM21 | Linear Algebra and Gradient Calculus | BS | 3 | 1 | 0 | 4 |
| 21AD21 | Fundamentals of Industry Revolution 4.0 | PC | 3 | 0 | 0 | 3 |
| 21FYC21 | Environmental Science and Engineering | ES | 3 | 0 | 0 | 1 |
| 21CS21 | Digital Design | ES | 3 | 0 | 0 | 3 |
| 21CSL22 | Python Programming | ES | 1 | 0 | 4 | 3 |
| 21MEL11 | Engineering Graphics | ES | 1 | 0 | 4 | 3 |
| 21PL21 | Physics Laboratory II | BS | 0 | 0 | 2 | 0.5 |
| 21CL21 | Chemistry Laboratory II | BS | 0 | 0 | 2 | 0.5 |
| 21CSL21 | Digital Design Laboratory | ES | 0 | 0 | 2 | 1 |
| 21FYEL21 | English for Employability | EEC | 0 | 0 | 2 | 1 |
| 21CC01 | Co-curricular Activities | - | - | - | - | 1 |
| Total Credits | | | | | | 21 |

SEMESTER 9

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|---|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21AD31 | Probability and Statistics | BS | 3 | 1 | 0 | 4 |
| 21AD32 | Data Structures and Algorithms | PC | 3 | 1 | 0 | 4 |
| 21AD33 | Principles of Artificial Intelligence | PC | 3 | 0 | 0 | 3 |
| 21AD34 | Software Engineering Principles and Practices | PC | 3 | 0 | 0 | 3 |
| 21AD35 | Web Development Technologies | PC | 3 | 0 | 0 | 3 |
| 21AD36 | Science of Creativity and Professional Ethics | HS | 1 | 1 | 0 | 1 |
| 21ADL37 | Data Structures and Algorithms Laboratory | PC | 0 | 0 | 3 | 1.5 |
| 21ADL38 | Web Development Laboratory | PC | 0 | 0 | 3 | 1.5 |
| 21ADOC01 | One Credit Course – Elective I | OCC | - | - | - | 1 |
| 21HOC01 | Communication Skills for Engineers – I | EEC | 0 | 0 | 2 | 1 |
| Total Credits | | | | | | 23 |

SEMESTER 10

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|--|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21AD41 | Discrete Mathematics and Automata Theory | BS | 3 | 1 | 0 | 4 |
| 21AD42 | Machine learning techniques | PC | 3 | 0 | 0 | 3 |
| 21AD43 | Database Management Systems | PC | 3 | 0 | 0 | 3 |
| 21AD44 | Principles of Computer Systems | PC | 3 | 0 | 0 | 3 |
| 21AD45 | Data communication and Networking | PC | 3 | 0 | 0 | 3 |
| 21AD46 | Foundation in Data Science | PC | 3 | 0 | 0 | 3 |
| 21ADL47 | Machine Learning Laboratory | PC | 0 | 0 | 3 | 1.5 |
| 21ADL48 | Database Management Systems Laboratory | PC | 0 | 0 | 3 | 1.5 |
| 21ADOC02 | One Credit Course-Elective II | OCC | - | - | - | 1 |
| 21HOC02 | Communication Skills for Engineers – II | EEC | 0 | 0 | 2 | 1 |
| Total Credits | | | | | | 24 |

SEMESTER

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|---|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21AD51 | Cloud Architecture | PC | 3 | 0 | 0 | 3 |
| 21AD52 | Mobile Application Development | PC | 3 | 0 | 0 | 3 |
| 21AD53 | Data Mining and Analysis | PC | 3 | 0 | 0 | 3 |
| 21AD54 | Big Data Architecture: Tools and Techniques | PC | 3 | 0 | 0 | 3 |
| | Professional Elective I | PE | 3 | 0 | 0 | 3 |
| | Open Elective I | OE | 3 | 0 | 0 | 3 |
| 21ADL55 | Mobile Application Development Laboratory | PC | 0 | 0 | 2 | 1 |
| 21ADL56 | Data Mining and Analysis Laboratory | PC | 0 | 0 | 2 | 1 |
| 21ADOC03 | Comprehensive Exam Training (One Credit Course) | EEC | - | - | - | 1 |
| 21AD66 | Mini Project <i>(** Evaluated at Sem VI)</i> | EEC | 0 | 0 | 6 | - |
| 21ADI57 | Internship I <i>*(To be completed during third/fourth semester vacation)</i> | EEC | 0 | 0 | 0 | 1 |
| Total Credits | | | | | | 22 |

SEMESTER 12

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|---|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21AD61 | Deep Learning Techniques | PC | 3 | 0 | 0 | 3 |
| 21AD62 | Computer Vision and Pattern Recognition | PC | 3 | 0 | 0 | 3 |
| 21AD63 | Data Visualization | PC | 3 | 0 | 0 | 3 |
| | Professional Elective II | PE | 3 | 0 | 0 | 3 |
| | Open Elective II | OE | 3 | 0 | 0 | 3 |
| 21ADL64 | Deep Learning Laboratory | PC | 0 | 0 | 4 | 2 |
| 21ADL65 | Data Visualization Laboratory | PC | 0 | 0 | 2 | 1 |
| 21AD66 | Mini Project | EEC | 0 | 0 | 6 | 3 |
| 21ADI67 | Internship II* (<i>To be completed during fourth/fifth semester vacation</i>) | EEC | 0 | 0 | 0 | 1 |
| Total Credits | | | | | | 22 |

SEMESTER 13

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|--|------|---------|---|---|-----------|
| | | | L | T | P | |
| 21AD71 | Data Security | PC | 3 | 0 | 0 | 3 |
| 21AD72 | IoT and its Applications | PC | 3 | 0 | 0 | 3 |
| 21AD73 | Applied Natural Language Processing | PC | 3 | 0 | 0 | 3 |
| | Professional Elective III | PE | 3 | 0 | 0 | 3 |
| | Professional Elective IV | PE | 3 | 0 | 0 | 3 |
| 21ADL74 | Applied Natural Language Processing Laboratory | PC | 0 | 0 | 2 | 1 |
| 21ADL75 | Internet of Things Laboratory | PC | 0 | 0 | 2 | 1 |
| 21AD76 | Project Phase-I | EEC | 0 | 0 | 6 | 3 |
| Total Credits | | | | | | 20 |

SEMESTER 14

| Subject Code | Subject | SCC# | Periods | | | Credits |
|----------------------|----------------------------|-------------|----------------|----------|----------|----------------|
| | | | L | T | P | |
| | Professional Elective – V | PE | 3 | 0 | 0 | 3 |
| | Professional Elective – VI | PE | 3 | 0 | 0 | 3 |
| 21AD81 | Project Phase-II | EEC | 0 | 0 | 10 | 5 |
| Total Credits | | | | | | 11 |

Note:

- **Open Electives can be opted from other departments too**
- **NPTEL 12-week courses, CISCO certifications, AWS certifications, PM certifications can be opted instead of electives with approval of department**

TOTAL CREDITS:**Semester I and Semester II : 41****Semester III to Semester VIII : 122****Total : 163**

PROFESSIONAL ELECTIVES

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|-----------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE01 | User Interface Design | PE | 3 | 0 | 0 | 3 |
| 21ADE02 | Design and Analysis of Algorithms | PE | 3 | 0 | 0 | 3 |
| 21ADE03 | Information Retrieval | PE | 3 | 0 | 0 | 3 |
| 21ADE04 | Generative AI | PE | 3 | 0 | 0 | 3 |
| 21ADE05 | Agile Software Development | PE | 3 | 0 | 0 | 3 |
| 21ADE06 | Optimization Techniques | PE | 3 | 0 | 0 | 3 |
| 21ADE07 | Graph Theory in Data Science | PE | 3 | 0 | 0 | 3 |
| 21ADE08 | Virtual Reality | PE | 3 | 0 | 0 | 3 |
| 21ADE09 | Regression Analysis | PE | 3 | 0 | 0 | 3 |
| 21ADE10 | Software Testing | PE | 3 | 0 | 0 | 3 |
| 21ADE11 | Reinforcement Learning | PE | 3 | 0 | 0 | 3 |
| 21ADE12 | Fundamentals of Blockchain | PE | 3 | 0 | 0 | 3 |
| 21ADE13 | Evolutionary Algorithms | PE | 3 | 0 | 0 | 3 |
| 21ADE14 | Digital Forensics | PE | 3 | 0 | 0 | 3 |
| 21ADE15 | Distributed Systems | PE | 3 | 0 | 0 | 3 |
| 21ADE16 | Cyber-Physical Systems | PE | 3 | 0 | 0 | 3 |
| 21ADE17 | Social Media Analytics | PE | 3 | 0 | 0 | 3 |
| 21ADE18 | DevOps | PE | 3 | 0 | 0 | 3 |
| 21ADE19 | Mining Large Datasets | PE | 3 | 0 | 0 | 3 |

| | | | | | | |
|---------|--------------------------------------|----|---|---|---|---|
| 21ADE20 | Information Theory and Coding | PE | 3 | 0 | 0 | 3 |
| 21ADE21 | AI in healthcare | PE | 3 | 0 | 0 | 3 |
| 21ADE22 | Financial AI | PE | 3 | 0 | 0 | 3 |
| 21ADE23 | Intelligent Systems | PE | 3 | 0 | 0 | 3 |
| 21ADE24 | Fog Computing | PE | 3 | 0 | 0 | 3 |
| 21ADE25 | Business Analytics | PE | 3 | 0 | 0 | 3 |
| 21ADE26 | Speech Recognition | PE | 3 | 0 | 0 | 3 |
| 21ADE27 | Neural Networks in Cognitive Science | PE | 3 | 0 | 0 | 3 |
| 21ADE28 | Game theory in AI | PE | 3 | 0 | 0 | 3 |
| 21ADE29 | GPU computing | PE | 3 | 0 | 0 | 3 |
| 21ADE30 | Ethical Hacking | PE | 3 | 0 | 0 | 3 |

Professional Electives 1

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|-----------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE01 | User Interface Design | PE | 3 | 0 | 0 | 3 |
| 21ADE02 | Design and Analysis of Algorithms | PE | 3 | 0 | 0 | 3 |
| 21ADE03 | Information Retrieval | PE | 3 | 0 | 0 | 3 |
| 21ADE04 | Generative AI | PE | 3 | 0 | 0 | 3 |
| 21ADE05 | Agile Software Development | PE | 3 | 0 | 0 | 3 |

Professional Electives 2

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE06 | Optimization Techniques | PE | 3 | 0 | 0 | 3 |
| 21ADE07 | Graph Theory in Data Science | PE | 3 | 0 | 0 | 3 |
| 21ADE08 | Virtual Reality | PE | 3 | 0 | 0 | 3 |
| 21ADE09 | Regression Analysis | PE | 3 | 0 | 0 | 3 |
| 21ADE10 | Software Testing | PE | 3 | 0 | 0 | 3 |

Professional Electives 3

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|----------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE11 | Reinforcement Learning | PE | 3 | 0 | 0 | 3 |
| 21ADE12 | Fundamentals of Blockchain | PE | 3 | 0 | 0 | 3 |
| 21ADE13 | Evolutionary Algorithms | PE | 3 | 0 | 0 | 3 |
| 21ADE14 | Digital Forensics | PE | 3 | 0 | 0 | 3 |
| 21ADE15 | Distributed Systems | PE | 3 | 0 | 0 | 3 |

Professional Electives 4

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|-------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE16 | Cyber-Physical Systems | PE | 3 | 0 | 0 | 3 |
| 21ADE17 | Social Media Analytics | PE | 3 | 0 | 0 | 3 |
| 21ADE18 | DevOps | PE | 3 | 0 | 0 | 3 |
| 21ADE19 | Mining Large Datasets | PE | 3 | 0 | 0 | 3 |
| 21ADE20 | Information Theory and Coding | PE | 3 | 0 | 0 | 3 |

Professional Electives 5

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|---------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE21 | AI in healthcare | PE | 3 | 0 | 0 | 3 |
| 21ADE22 | Financial AI | PE | 3 | 0 | 0 | 3 |
| 21ADE23 | Intelligent Systems | PE | 3 | 0 | 0 | 3 |
| 21ADE24 | Fog Computing | PE | 3 | 0 | 0 | 3 |
| 21ADE25 | Business Analytics | PE | 3 | 0 | 0 | 3 |

Professional Electives 6

| Subject Code | Subject | SCC# | Periods | | | Credits |
|--------------|--------------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| 21ADE26 | Speech Recognition | PE | 3 | 0 | 0 | 3 |
| 21ADE27 | Neural Networks in Cognitive Science | PE | 3 | 0 | 0 | 3 |
| 21ADE28 | Game theory in AI | PE | 3 | 0 | 0 | 3 |

| | | | | | | |
|---------|-----------------|----|---|---|---|---|
| 21ADE29 | GPU computing | PE | 3 | 0 | 0 | 3 |
| 21ADE30 | Ethical Hacking | PE | 3 | 0 | 0 | 3 |

One Credit Course

| Subject Code | Subject | SCC# | Periods | | | Credits |
|-----------------------|-------------------------------------|------|---------|---|---|---------|
| | | | L | T | P | |
| Industry based | | | | | | |
| | Advanced Analytics | OCC | - | - | - | 1 |
| | Amazon Web Services | OCC | - | - | - | 1 |
| | Software Project Management | OCC | - | - | - | 1 |
| NPTEL | | | | | | |
| | Python for Data Science | OCC | - | - | - | 1 |
| | Introduction to Haskell Programming | OCC | - | - | - | 1 |
| | Social Networks | OCC | - | - | - | 1 |
| Institution | | | | | | |
| | Constitution of India | OCC | - | - | - | 1 |
| | Biology for Engineers | OCC | - | - | - | 1 |
| | Human Values | OCC | - | - | - | 1 |

| Department Based | | | | | | |
|-------------------------|-------------------------------------|-----|---|---|---|---|
| | R Programming | OCC | - | - | - | 1 |
| | Object Oriented Programming in Java | OCC | - | - | - | 1 |
| | Tensor Flow | OCC | - | - | - | 1 |

OPEN ELECTIVE COURSES (OEC)

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|---|---|---|---|---|-------------------|
| 21ADOE01 | AI Essentials | 3 | 0 | 0 | 3 | All Branches |
| 21ADOE02 | Introduction to Cloud and Virtualization | 3 | 0 | 0 | 3 | All Branches |
| 21ADOE03 | Data analysis using open-source tools | 3 | 0 | 0 | 3 | All Branches |
| 21ADOE04 | Python for Machine Learning and Deep Learning | 3 | 0 | 0 | 3 | All Branches |
| 21ADOE05 | Data Visualization using Power BI | 3 | 0 | 0 | 3 | All Branches |

| S/NO | Course Category | Summary of Credit Distribution | | | | | | | | Category Wise Credit | AICTE | TEQIP |
|------|------------------------|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|------------|------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| 1 | BS | 12 | 5 | 4 | 4 | 0 | 0 | 0 | 0 | 25 | 24 | 25 |
| 2 | HS | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 12 |
| 3 | ES | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 29 | 24 |
| 4 | PC | 0 | 3 | 16 | 18 | 14 | 12 | 11 | 0 | 74 | 49 | 57 |
| 5 | PE | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 6 | 18 | 18 | 15 |
| 6 | OE | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 6 | 12 | 12 |
| 7 | EEC | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 5 | 18 | 15 | 15 |
| 8 | OCC | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | | |
| | Sem wise Credit | 20 | 21 | 23 | 24 | 22 | 22 | 20 | 11 | 163 | 159 | 160 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF CIVIL ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

M. E. STRUCTURAL ENGINEERING

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|---|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MSE111 | Applied Mathematical methods | FC | 3 | 1 | 0 | 4 | 4 |
| 2. | 23MSE112 | Applied Elasticity and Plasticity | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MSE113 | Matrix Methods of Structural Analysis | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MSE114 | Advanced Reinforced Concrete Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective I | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Department Specific One Credit Course | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MSE121 | Structural Design studio | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MSE122 | Research Proposal Writing and IPR | EEC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 1 | 8 | 26 | 21 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MSE211 | Structural Dynamics | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MSE212 | Finite Element Method | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MSE213 | Advanced Steel Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Elective II | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective III | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Value Added Course | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MSE221 | Advanced Structural Engineering Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MSE222 | Finite Element Analysis Laboratory | EEC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 0 | 8 | 25 | 20 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Elective IV | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Elective V | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Elective VI/Open Elective | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 4. | 23MSE331 | Practical Training (4 Weeks) | EEC | 0 | 0 | 0 | 0 | 2 |
| 5. | 23MSE332 | Project Work Phase I | EEC | 0 | 0 | 6 | 6 | 3 |
| TOTAL | | | | 9 | 0 | 6 | 15 | 14 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|-----------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| PRACTICALS | | | | | | | | |
| 1. | 23MSE441 | Project Work Phase II | EEC | 0 | 0 | 30 | 30 | 15 |
| TOTAL | | | | 0 | 0 | 30 | 30 | 15 |

LIST OF PROFESSIONAL CORE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|--|----------|---|---|---|-----------------|---------|
| 1. | 23MSE112 | Applied Elasticity and Plasticity | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MSE113 | Matrix Methods of Structural Analysis | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MSE114 | Advanced Reinforced Concrete Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MSE121 | Structural Design studio | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23MSE211 | Structural Dynamics | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23MSE212 | Finite Element Method | PCC | 3 | 0 | 0 | 3 | 3 |
| 7. | 23MSE213 | Advanced Steel Structures | PCC | 3 | 0 | 0 | 3 | 3 |
| 8. | 23MSE221 | Advanced Structural Engineering Laboratory | PCC | 3 | 0 | 0 | 3 | 3 |
| 9. | 23MSE222 | Finite Element Analysis laboratory | PCC | 3 | 0 | 0 | 3 | 3 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|---|----------|---|---|---|-----------------|---------|
| 1. | 23MSEE01 | Stability of Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MSEE02 | Advanced Concrete Technology | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MSEE03 | Experimental Techniques and Instrumentation | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MSEE04 | Earthquake Resistant Design of Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23MSEE05 | Structural Optimization | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23MSEE06 | Health Monitoring of Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | 23MSEE07 | Prestressed Concrete Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | 23MSEE08 | Corrosion of Steel in Concrete Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 9. | 23MSEE09 | Theory of Plates | PEC | 3 | 0 | 0 | 3 | 3 |
| 10. | 23MSEE10 | Design of Concrete Bridges | PEC | 3 | 0 | 0 | 3 | 3 |
| 11. | 23MSEE11 | Design of Steel Concrete Composite Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 12. | 23MSEE12 | Offshore Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 13. | 23MSEE13 | Shell Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 14. | 23MSEE14 | Design of Tall Buildings | PEC | 3 | 0 | 0 | 3 | 3 |
| 15. | 23MSEE15 | Wind and Cyclone Effects on Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 16. | 23MSEE16 | Soil Structure Interaction | PEC | 3 | 0 | 0 | 3 | 3 |
| 17. | 23MSEE17 | Mechanics of Composite Materials | PEC | 3 | 0 | 0 | 3 | 3 |
| 18. | 23MSEE18 | Prefabricated Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 19. | 23MSEE19 | Design of Foundation Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 20. | 23MSEE20 | Design of Formwork | PEC | 3 | 0 | 0 | 3 | 3 |
| 21. | 23MSEE21 | Design of Masonry Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 22. | 23MSEE22 | Reliability Analysis of Structures | PEC | 3 | 0 | 0 | 3 | 3 |
| 23. | 23MSEE23 | Cold Formed Steel Structures | PEC | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER PG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | PG PROGRAMME |
|--------|-------------|-------------------------------|----------|---|---|---|-----------------|---|--------------|
| 1. | 23MSEOE01 | Disaster Management | OEC | 3 | 0 | 0 | 3 | 3 | EE, CM, ES |
| 2. | 23MSEOE02 | Energy Efficient Buildings | OEC | 3 | 0 | 0 | 3 | 3 | EE, CM, ES |
| 3. | 23MCMOE01 | Landscape And Architecture | OEC | 3 | 0 | 0 | 3 | 3 | EE, CM, ES |
| 4. | 23MENOE01 | Climate Change And Adaptation | OEC | 3 | 0 | 0 | 3 | 3 | EE, CM, ES |

Programme - M.E. - Environmental Engineering, Construction Management, Embedded and Real Time Systems

SUMMARY

Category; FC – Foundational course, PCC –Professional Core, PE- Professional Elective Course, OE-Open Elective Course, EEC –Employability Enhancement Course

| M.E. STRUCTURAL ENGINEERING | | | | | | |
|------------------------------------|--------------|----------------------|----|-----|----|---------------|
| Sl. No. | Subject Area | Credits per Semester | | | | Total Credits |
| | | I | II | III | IV | |
| 1. | FC | 4 | | | | 4 |
| 2. | PCC | 11 | 11 | | | 22 |
| 3. | PEC | 3 | 6 | 6 | | 15 |
| 4. | OEC | | | 3 | | 3 |
| 5. | EEC | 3 | 3 | 5 | 15 | 26 |
| TOTAL CREDITS | | | | | | 70 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)

DEPARTMENT OF CIVIL ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

M. E. CONSTRUCTION MANAGEMENT

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MCM111 | Statistical Methods and Research methodology for construction management | FCC | 3 | 1 | 0 | 4 | 4 |
| 2. | 23MCM112 | Construction Project Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MCM113 | Construction Project Formulation and Appraisal | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MCM114 | Construction Economics and Financial Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Program Elective – 1 | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Value added course -1 Green Buildings | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MCM121 | Data Analysis Laboratory for Construction Management | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MCM122 | Research proposal writing and IPR | EEC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 1 | 8 | 26 | 21 |

SEMESTER 4

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MCM211 | Construction Planning, Scheduling and Control | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MCM212 | Contract Management and Dispute Resolution | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MCM213 | Quantitative Techniques in Construction Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Program Elective – 2 | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Program Elective – 3 | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Value added Course – 2 | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MCM221 | Project Planning Laboratory for Construction Management | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MCM222 | Advanced Construction Engineering and Experimental Techniques Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 0 | 8 | 25 | 20 |

SEMESTER 5

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--------------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Program Elective – 4 | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Program Elective – 5 | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Open Elective / Program Elective - 6 | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 4. | 23MCM331 | Practical Training | EEC | 0 | 0 | 0 | 0 | 2 |
| 5. | 23MCM332 | Project Work – Phase 1 | EEC | 0 | 0 | 6 | 6 | 3 |
| TOTAL | | | | 9 | 0 | 6 | 15 | 14 |

SEMESTER 6

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| PRACTICALS | | | | | | | | |
| 1. | 23MCM441 | Project Work – Phase 2 | EEC | 0 | 0 | 30 | 30 | 15 |
| TOTAL | | | | 0 | 0 | 30 | 30 | 15 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|---|----------|---|---|---|-----------------|---------|
| 1. | 23MCME01 | Advanced Construction Materials and Equipment | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MCME02 | Quality Management for Construction Projects | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MCME03 | Management Information systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MCME04 | Advanced Construction Techniques | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23MCME05 | Functional Planning, Building Services and Maintenance Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23MCME06 | Construction Risk Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | 23MCME07 | Shoring, Scaffolding and Formwork | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | 23MCME08 | Advanced concrete technology | PEC | 3 | 0 | 0 | 3 | 3 |
| 9. | 23MCME09 | Valuation of Real Properties | PEC | 3 | 0 | 0 | 3 | 3 |
| 10. | 23MCME10 | Building Information Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 11. | 23MCME11 | Construction Safety and Health Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 12. | 23MCME12 | Lean Construction Concepts, Tools and Practices | PEC | 3 | 0 | 0 | 3 | 3 |
| 13. | 23MCME13 | Construction Personal Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 14. | 23MCME14 | Design of Energy Efficient Buildings | PEC | 3 | 0 | 0 | 3 | 3 |
| 15. | 23MCME15 | Maintenance, Repair and Rehabilitation of | PEC | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|-----|----------|--|-----|---|---|---|---|---|
| | | structures | | | | | | |
| 16. | 23MCME16 | Environmental Impact Assessment for Construction Engineers | PEC | 3 | 0 | 0 | 3 | 3 |
| 17. | 23MCME17 | Supply chain management & logistics in construction | PEC | 3 | 0 | 0 | 3 | 3 |
| 18. | 23MCME18 | Resource Management and control in construction | PEC | 3 | 0 | 0 | 3 | 3 |
| 19. | 23MCME19 | GIS in Construction Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 20. | 23MCME20 | Digital Design and construction | PEC | 3 | 0 | 0 | 3 | 3 |
| 21. | 23MCME21 | 3D Printing and Design | | | | | | |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER PG PROGRAMMES:

| Sl. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | PG PROGRAMME |
|--------|-------------|-------------------------------|----------|---|---|---|-----------------|---|--------------|
| 1. | 23MSEOE01 | Disaster Management | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM & ES |
| 2. | 23MSEOE02 | Energy Efficient buildings | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM & ES |
| 3. | 23MCMOE01 | Landscaping and architecture | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM & ES |
| 4. | 23MENOE01 | Climate change and Adaptation | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM & ES |

SUMMARY

**Category; FC – Foundational course, PCC –Professional Core, PE- Professional Elective Course,
OE-Open Elective Course, EEC –Employability Enhancement Course**

| M.E. CONSTRUCTIONMANAGEMENT | | | | | | |
|------------------------------------|--------------|----------------------|----|-----|----|---------------|
| Sl. No. | Subject Area | Credits per Semester | | | | Total Credits |
| | | I | II | III | IV | |
| 1. | FC | 4 | | | | 4 |
| 2. | PCC | 11 | 11 | | | 22 |
| 3. | PEC | 3 | 6 | 6 | | 15 |
| 4. | OEC | | | 3 | | 3 |
| 5. | EEC | 3 | 3 | 5 | 15 | 26 |
| TOTAL CREDITS | | | | | | 70 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF CIVIL ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM

M. E. ENVIRONMENTAL ENGINEERING

CURRICULA AND SYLLABI

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MEN111 | Applied Statistics and Probability | FC | 3 | 1 | 0 | 4 | 4 |
| 2. | 23MEN112 | Environmental Chemistry | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MEN113 | Environmental Microbiology | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MEN114 | Physical and Chemical Treatment Systems for Water and Wastewater | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective I | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Department Specific One Credit Course | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MEN221 | Environmental and Processes Monitoring Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MEN222 | Environmental Microbiology and Quality Analysis Laboratory | EEC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 1 | 8 | 26 | 21 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | 23MEN211 | Biological Treatment Process for Wastewater | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MEN212 | Air and Noise Pollution Control Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MEN213 | Industrial Wastewater Pollution-Prevention and Control | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Elective II | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective III | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Value Added Course | EEC | 2 | 0 | 0 | 2 | 1 |
| PRACTICALS | | | | | | | | |
| 7. | 23MEN221 | Environmental and Processes Monitoring Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | 23MEN222 | Environmental Microbiology and Quality Analysis Laboratory | EEC | 0 | 0 | 4 | 4 | 2 |
| TOTAL | | | | 17 | 0 | 8 | 25 | 20 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|------------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1. | | Elective IV | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | | Elective V | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Elective VI/Open Elective | PEC/OEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 4. | 23MEN331 | Practical Training (4 Weeks) | EEC | 0 | 0 | 0 | 0 | 2 |
| 5. | 23MEN332 | Project Work Phase I | EEC | 0 | 0 | 6 | 4 | 2 |
| TOTAL | | | | 9 | 0 | 6 | 15 | 14 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|-----------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| PRACTICALS | | | | | | | | |
| 1. | 23MEN441 | Project Work Phase II | EEC | 0 | 0 | 30 | 30 | 15 |
| TOTAL | | | | 0 | 0 | 30 | 30 | 15 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | CREDITS |
|--------|-------------|---|----------|---|---|---|-----------------|---------|
| 1. | 23MENE01 | Solid and Hazardous Waste Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MENE02 | Natural Systems for Wastewater Treatment | PEC | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MENE03 | Environmental System Analysis | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MENE04 | Environmental Impact Assessment | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | 23MENE05 | Septage and Onsite Wastewater Treatment Technologies | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | 23MENE06 | Sustainability Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | 23MENE07 | Project Formulation and Implementation | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | 23MENE08 | Advanced Oxidation Process | PEC | 3 | 0 | 0 | 3 | 3 |
| 9. | 23MENE09 | Computing Techniques in Environmental Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 10. | 23MENE10 | Geo Environmental Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 11. | 23MENE11 | Environmental Monitoring Instruments | PEC | 3 | 0 | 0 | 3 | 3 |
| 12. | 23MENE12 | Water Quality Modeling | PEC | 3 | 0 | 0 | 3 | 3 |
| 13. | 23MENE13 | Marine Pollution and Control | PEC | 3 | 0 | 0 | 3 | 3 |
| 14. | 23MENE14 | Climate Change and Modeling | PEC | 3 | 0 | 0 | 3 | 3 |
| 15. | 23MENE15 | Operation and Maintenance of Water and Wastewater Treatment Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 16. | 23MENE16 | Air Quality Modeling | PEC | 3 | 0 | 0 | 3 | 3 |
| 17. | 23MENE17 | Fate and Remediation of Emerging Contaminants | PEC | 3 | 0 | 0 | 3 | 3 |
| 18. | 23MENE18 | Environmental Reaction Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 19. | 23MENE19 | Membrane Separation for Water and Wastewater Treatment | PEC | 3 | 0 | 0 | 3 | 3 |
| 20. | 23MENE20 | Ecological Engineering | PEC | 3 | 0 | 0 | 3 | 3 |
| 21. | 23MENE21 | Water Transmission, Water Distribution and Sewerage Systems | PEC | 3 | 0 | 0 | 3 | 3 |
| 22. | 23MENE22 | Carbon Management | PEC | 3 | 0 | 0 | 3 | 3 |
| 23. | 23MENE23 | Environmental Sustainability Governance Model | PEC | 3 | 0 | 0 | 3 | 3 |
| 24. | 23MENE24 | Environmental Risk Analysis | PEC | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER PG PROGRAMMES:

| SI. No | COURSE CODE | COURSE TITLE | CATEGORY | L | T | P | CONTACT PERIODS | C | PG PROGRAMME |
|--------|-------------|-------------------------------|----------|---|---|---|-----------------|---|--------------|
| 1. | 23MSEOE01 | Disaster Management | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM, ES |
| 2. | 23MSEOE02 | Energy Efficient Buildings | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM, ES |
| 3. | 23MCMOE01 | Landscape And Architecture | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM, ES |
| 4. | 23MENOE01 | Climate Change And Adaptation | OEC | 3 | 0 | 0 | 3 | 3 | SE, CM, ES |

SUMMARY

Category; FC – Foundational course, PCC –Professional Core, PE- Professional Elective Course, OE-Open Elective Course, EEC –Employability Enhancement Course

| M.E. ENVIRONMENTAL ENGINEERING | | | | | | |
|---------------------------------------|--------------|----------------------|----|-----|----|---------------|
| SI. No. | Subject Area | Credits per Semester | | | | Total Credits |
| | | I | II | III | IV | |
| 1. | FC | 4 | | | | 4 |
| 2. | PCC | 11 | 11 | | | 22 |
| 3. | PEC | 3 | 6 | 6 | | 15 |
| 4. | OEC | | | 3 | | 3 |
| 5. | EEC | 3 | 3 | 5 | 15 | 26 |
| TOTAL CREDITS | | | | | | 70 |



COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM
CURRICULUM AND SYLLABI

M.E. – EMBEDDED AND REAL TIME SYSTEMS (ERTS)

SEMESTER I

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|---|-----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23MER111 | Higher Engineering Mathematics | BSC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23MER112 | System Design & Embedded Controllers | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23MER113 | Embedded System Design using FPGA | PCC | 3 | 0 | 0 | 3 | 3 |
| 4 | 23MER114 | Electromagnetic Interference and Compatibility | PCC | 3 | 0 | 0 | 3 | 3 |
| 5 | | Elective I | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23MER121 | System Design & Embedded controllers Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23MER122 | Embedded System Design using FPGA Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSE | | | | | | | | |
| 8 | OC1 | Value added course I | OCC | | | | 15 | 1 |
| TOTAL | | | | 15 | 1 | 8 | 24 | 21 |

SEMESTER II

| S. NO. | COURSE CODE | COURSE TITLE | CATE GOR Y | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|--------------------------------------|------------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | 23MER211 | Automotive Embedded System | PCC | 3 | 1 | 0 | 4 | 4 |
| 2 | 23MER212 | Robotics Technology and Intelligence | PCC | 3 | 0 | 0 | 3 | 3 |
| 3 | 23MER231 | Real Time Operating Systems | PCC | 2 | 0 | 2 | 4 | 3 |
| 4 | Elective | Elective II | PEC | 3 | 0 | 0 | 3 | 3 |
| 5 | Elective | Elective III | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 6 | 23MER221 | Internet of Things Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 7 | 23MER222 | Feasibility Report Writing | PCC | 0 | 0 | 4 | 4 | 2 |
| ONE CREDIT COURSE | | | | | | | | |
| 8 | OC1 | Value added course II | OCC | | | | 15 | 1 |
| TOTAL | | | | 16 | 1 | 10 | 25 | 21 |

SEMESTER III

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------------------------|-------------|------------------------|----------|------------------|----------|----------|-----------------------|-----------|
| | | | | L | T | P | | |
| THEORY | | | | | | | | |
| 1 | Elective | Elective IV | PEC | 3 | 0 | 0 | 3 | 3 |
| 2 | Elective | Elective V | PEC | 3 | 0 | 0 | 3 | 3 |
| 3 | Elective | Elective VI | PEC | 3 | 0 | 0 | 3 | 3 |
| PRACTICALS | | | | | | | | |
| 4 | P1 | Project – Phase I | EEC | 0 | 0 | 6 | 6 | 3 |
| ONE CREDIT COURSE | | | | | | | | |
| 5 | OC1 | Value added course III | OCC | | | | 15 | 1 |
| TOTAL | | | | 9 | 0 | 6 | 15 | 13 |

SEMESTER IV

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|-------------------|-------------|--------------------|----------|------------------|----------|-----------|-----------------------|-----------|
| | | | | L | T | P | | |
| PRACTICALS | | | | | | | | |
| 1 | P2 | Project – Phase II | EEC | 0 | 0 | 30 | 30 | 15 |
| TOTAL | | | | 10 | 0 | 30 | 30 | 15 |

LIST OF PROFESSIONAL ELECTIVE COURSES:

| S. NO. | COURSE CODE | COURSE TITLE | CATEGORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|---|----------|------------------|---|---|-----------------------|---------|
| | | | | L | T | P | | |
| 1. | 23MERE01 | Smart Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 2. | 23MERE02 | Embedded System Security | PE | 3 | 0 | 0 | 3 | 3 |
| 3. | 23MERE03 | Data Science and Analytics | PE | 3 | 0 | 0 | 3 | 3 |
| 4. | 23MERE04 | Intelligent Systems and Control | PE | 3 | 0 | 0 | 3 | 3 |
| 5. | 23MERE05 | Intelligent Controllers for Power Quality Enhancement | PE | 3 | 0 | 0 | 3 | 3 |
| 6. | 23MERE06 | Embedded Control of Industrial Drives | PE | 3 | 0 | 0 | 3 | 3 |
| 7. | 23MERE07 | Design of Green Transportation System | PE | 3 | 0 | 0 | 3 | 3 |
| 8. | 23MERE08 | Embedded Sensor Networks | PE | 3 | 0 | 0 | 3 | 3 |
| 9. | 23MERE09 | Modeling and Design of Embedded Systems | PE | 3 | 0 | 0 | 3 | 3 |
| 10. | 23MERE10 | Multicore Architecture | PE | 3 | 0 | 0 | 3 | 3 |

| | | | | | | | | |
|-----|----------|--|----|---|---|---|---|---|
| 11. | 23MERE11 | System Simulation and Modeling | PE | 3 | 0 | 0 | 3 | 3 |
| 12. | 23MERE12 | Digital System Design and Testing | PE | 3 | 0 | 0 | 3 | 3 |
| 13. | 23MERE13 | Synthesis and Optimization of Digital Circuits | PE | 3 | 0 | 0 | 3 | 3 |
| 14. | 23MERE14 | Computer Vision | PE | 3 | 0 | 0 | 3 | 3 |
| 15. | 23MERE15 | High Performance Computer Architecture | PE | 3 | 0 | 0 | 3 | 3 |
| 16. | 23MERE16 | Cryptography and Block Chain Technologies | PE | 3 | 0 | 0 | 3 | 3 |
| 17. | 23MERE17 | Augmented Reality | PE | 3 | 0 | 0 | 3 | 3 |
| 18. | 23MERE18 | Network Virtualization | PE | 3 | 0 | 0 | 3 | 3 |
| 19. | 23MERE19 | Soft Computing | PE | 3 | 0 | 0 | 3 | 3 |
| 20. | 23MERE20 | Edge Computing | PE | 3 | 0 | 0 | 3 | 3 |
| 21. | 23MERE21 | Computer Security | PE | 3 | 0 | 0 | 3 | 3 |

SUMMARY

Category; BSC – Basic sciences, HSC– Humanities and Social Sciences, ESC–Engineering sciences, PCC – Professional Core, PEC- Professional Elective, EEC –Employability Enhancement Course

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER APPLICATIONS

MCA 2 YEARS PROGRAMME 2020

Curriculum from the Academic Year 2020 and onwards

Under Choice Based Credit System

Name of the degree : MCA

Specialization : Computer Applications

Semester I

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|----|-----|
| 20MCA11 | Mathematical Foundations of Computer Applications | 3 | 0 | 0 | 3 | FC |
| 20MCA12 | Data Structures and Algorithms | 3 | 0 | 0 | 3 | FC |
| 20MCA13 | Database Management Systems | 3 | 0 | 0 | 3 | FC |
| 20MCA14 | Operating System Principles | 3 | 0 | 0 | 3 | FC |
| 20MCA15 | Software Engineering | 3 | 0 | 0 | 3 | FC |
| 20MCA16 | Data Structures Laboratory | 0 | 0 | 4 | 2 | FC |
| 20MCA17 | Database Management Systems Laboratory | 0 | 0 | 4 | 2 | FC |
| 20MCA18 | Python Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MCA19 | Communication Skills | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | CY |
|-------------|------------------------------------|---|---|---|----|-----|
| 20MCA21 | Artificial Intelligence | 3 | 0 | 0 | 3 | FC |
| 20MCA22 | Advanced Java Programming | 3 | 0 | 0 | 3 | PC |
| 20MCA23 | Virtualization and Cloud Computing | 3 | 0 | 0 | 3 | FC |
| 20MCA24 | SOA and Web Services | 3 | 0 | 0 | 3 | FC |
| | Elective I | 3 | 0 | 0 | 3 | PE |
| 20MCA25 | Artificial Intelligence Laboratory | 0 | 0 | 4 | 2 | FC |
| 20MCA26 | Advanced Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MCA27 | Professional English | 0 | 0 | 2 | 1 | EEC |
| 20MCA28 | Mini Project | 0 | 0 | 2 | 1 | EEC |
| 20HAC01 | Hackathon | 0 | 0 | 0 | 1 | EEC |
| | One Credit Course | 1 | 0 | 0 | 1 | OC |
| | Total Credits | | | | 23 | |

Semester III

| Course Code | Course Name | L | T | P | C | CY |
|-------------|--|---|---|---|----|-----|
| 20MCA31 | Cryptography and Network Security | 3 | 0 | 0 | 3 | FC |
| 20MCA32 | Machine Learning | 3 | 0 | 0 | 3 | FC |
| | Elective II | 3 | 0 | 0 | 3 | PE |
| | Elective III | 3 | 0 | 0 | 3 | PE |
| | Elective IV (Management Elective) | 3 | 0 | 0 | 3 | PE |
| 20MCA33 | Cryptography and Network Security Laboratory | 0 | 0 | 4 | 2 | FC |
| 20MCA34 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | FC |
| | Elective Lab | 0 | 0 | 4 | 2 | PE |
| 20MCAIT01 | Inplant Training | 0 | 0 | 0 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester IV

| Course Code | Course Name | L | T | P | C | CY |
|-------------|----------------------------|---|---|---|----|-----|
| 20MCA41 | Project work and viva voce | - | - | - | 13 | EEC |
| | Total Credits | | | | 13 | |

Total Credits

80

#One Credit Course

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---------------------------------|---|---|---|---|----|
| 20MCAOC01 | Recent Trends in Web Technology | 1 | 0 | 0 | 1 | OC |
| 20MCAOC02 | Devops Essentials | 1 | 0 | 0 | 1 | OC |

Professional Electives - IT Electives

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|---|----|
| 20MCAE101 | Graphics and Multimedia | 3 | 0 | 0 | 3 | PE |
| 20MCAE102 | Advanced Database Management Systems | 3 | 0 | 0 | 3 | PE |
| 20MCAE103 | Distributed Systems | 3 | 0 | 0 | 3 | PE |
| 20MCAE104 | Grid and Cluster Computing | 3 | 0 | 0 | 3 | PE |
| 20MCAE105 | Internet of Things | 3 | 0 | 0 | 3 | PE |
| 20MCAE106 | Software Metrics and Measurement | 3 | 0 | 0 | 3 | PE |
| 20MCAE107 | Agile Methods for Software Development | 3 | 0 | 0 | 3 | PE |
| 20MCAE108 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |
| 20MCAE109 | Basics of Robotics | 3 | 0 | 0 | 3 | PE |
| 20MCAE110 | GPU and Parallel Programming | 3 | 0 | 0 | 3 | PE |
| 20MCAE111 | Digital Image Processing | 3 | 0 | 0 | 3 | PE |
| 20MCAE112 | Blockchain Technologies | 3 | 0 | 0 | 3 | PE |
| 20MCAE113 | Single page web applications | 3 | 0 | 0 | 3 | PE |

| Course Code | Course Name | L | T | P | C | CY |
|-------------|--|---|---|---|---|----|
| 20MCAE114 | Digital Marketing | 3 | 0 | 0 | 3 | PE |
| 20MCAE115 | Software Project Management | 3 | 0 | 0 | 3 | PE |
| 20MCAE116 | Computer Vision | 3 | 0 | 0 | 3 | PE |
| 20MCAE117 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PE |
| 20MCAE118 | Open Source Ecosystem | 3 | 0 | 0 | 3 | PE |
| 20MCAE119 | Enterprise Management and Computing | 3 | 0 | 0 | 3 | PE |

Professional Electives - Data Science Electives

| Course Code | Course Name | L | T | P | C | CY |
|-------------|-----------------------------------|---|---|---|---|----|
| 20MCAE201 | Data Analytics | 3 | 0 | 0 | 3 | PE |
| 20MCAE202 | Intelligent Information Retrieval | 3 | 0 | 0 | 3 | PE |
| 20MCAE203 | Big Data Technologies | 3 | 0 | 0 | 3 | PE |
| 20MCAE204 | Data Mining and Warehousing | 3 | 0 | 0 | 3 | PE |
| 20MCAE205 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| 20MCAE206 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |

Professional Electives - Networking Electives

| Course Code | Course Name | L | T | P | C | CY |
|-------------|--|---|---|---|---|----|
| 20MCAE301 | Computer Networks | 3 | 0 | 0 | 3 | PE |
| 20MCAE302 | Internetworking Protocols and Management | 3 | 0 | 0 | 3 | PE |
| 20MCAE303 | Mobile Computing | 3 | 0 | 0 | 3 | PE |
| 20MCAE304 | Wireless networks | 3 | 0 | 0 | 3 | PE |
| 20MCAE305 | Ad Hoc Networks | 3 | 0 | 0 | 3 | PE |

Professional Electives - Management Electives

| Course Code | Course Name | L | T | P | C | CY |
|-------------|-------------------------------------|---|---|---|---|----|
| 20MCAE401 | Organizational Behaviour | 3 | 0 | 0 | 3 | PE |
| 20MCAE402 | Principles of Management | 3 | 0 | 0 | 3 | PE |
| 20MCAE403 | Accounting and Financial Management | 3 | 0 | 0 | 3 | PE |
| 20MCAE404 | E-Commerce | 3 | 0 | 0 | 3 | PE |
| 20MCAE405 | Decision Making | 3 | 0 | 0 | 3 | PE |
| 20MCAE406 | Entrepreneurship Development | 3 | 0 | 0 | 3 | PE |
| 20MCAE407 | Principles of Environmental Science | 3 | 0 | 0 | 3 | PE |

Professional Electives Laboratories

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|---|----|
| 20MCAEL01 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL02 | Graphics and Multimedia Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL03 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL04 | Data Analytics Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL05 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL06 | GPU and Parallel Programming Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL07 | Image Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL08 | Web Frameworks Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL09 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL10 | Social Network Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL11 | Networks Programming Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MCAEL12 | Digital Marketing Laboratory | 0 | 0 | 4 | 2 | PE |

BRIDGE COURSE**

SEMESTER I

| Course Code | Course Name | L | T | P | C | CY |
|-------------|------------------------------------|---|---|---|---|----|
| 20MCAB11 | Basics of Data Structures | 1 | 0 | 0 | 0 | FC |
| 20MCAB12 | Programming in C | 1 | 0 | 0 | 0 | FC |
| 20MCAB13 | Computer Hardware and Organization | 1 | 0 | 0 | 0 | FC |

SEMESTER II

| Course Code | Course Name | L | T | P | C | CY |
|-------------|------------------------------------|---|---|---|---|----|
| 20MCAB21 | Basics of Internet | 1 | 0 | 0 | 0 | FC |
| 20MCAB22 | Software Project Management | 1 | 0 | 0 | 0 | FC |
| 20MCAB23 | Object Oriented Programming in C++ | 1 | 0 | 0 | 0 | FC |

** Applicable to the candidates who has been admitted with Non Computer Science Undergraduate Degree

FC- Foundation Course, PC - Professional Core, OC- One Credit Course, PE - Professional Elective, EEC - Employability Enhancement Course.

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF MANAGEMENT STUDIES (MBA)

VISION AND MISSION OF DEPARTMENT OF MANAGEMENT STUDIES (MBA)

VISION

To be a School of Management Studies with Global Mindset and bring out highly capable, engaged and ethical leaders who will create positive changes in the world of Business & Society.

MISSION

To develop MBA graduates with Self - Awareness, Self - Reflection, Responsible Leadership and Techno- Managerial Skills.

OBJECTIVES

To teach students the foundations of general management and develop skills in problem solving and decision making in a business environment along with honing their skills in leveraging technology for disruptive innovation/entrepreneurship.

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF MANAGEMENT STUDIES (MBA)

MASTER OF BUSINESS ADMINISTRATION REGULATIONS - 2021

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

MBA programme curriculum is designed to prepare the post graduate students

- I. To have a thorough understanding of the core aspects of the business.
- II. To provide the learners with the management tools to identify, analyze and create business opportunities as well as solve business problems.
- III. To prepare them to have a holistic approach towards management functions.
- IV. To motivate them for continuous learning.
- V. To inspire and make them practice ethical standards in business.

PROGRAMME OUTCOMES (POs) :

On successful completion of the programme,

1. Ability to apply the business acumen gained in practice.
2. Ability to understand and solve managerial issues.
3. Ability to communicate and negotiate effectively, to achieve organizational and individual goals.
4. Ability to upgrade their professional and managerial skills in their workplace.
5. Ability to explore and reflect about managerial challenges, develop informed managerial decisions in a dynamically unstable environment.
6. Ability to take up challenging assignments.
7. Ability to understand one's own ability to set achievable targets and complete them.
8. Ability to pursue life long learning.
9. To have a fulfilling business career.
10. Ability to have financial literacy.
11. Ability to fulfill social out reach
12. Ability to understand business analytics

MAPPING OF PEOs WITH POS :

| Programme Educational Objectives | Programme Outcomes | | | | | | | | | | | |
|----------------------------------|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| I | 3 | 3 | 2 | 1 | 3 | 3 | 1 | 2 | 1 | 1 | 1 | 3 |
| II | 1 | 3 | 1 | 2 | 3 | 1 | 3 | 2 | 1 | 3 | 1 | 3 |
| III | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 1 | 2 | 3 |
| IV | 2 | 1 | 2 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 2 | 1 |
| V | 1 | 3 | 3 | 2 | 2 | 3 | 1 | 2 | 3 | 1 | 3 | 1 |

| Year | Sem. | COURSE TITLE | Programme Outcomes | | | | | | | | |
|--------------------------------------|--------|---|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 |
| YEAR 1 | SEM 1 | Statistics for Management | | - | | | | | | | |
| | | Management Concepts and Organizational Behavior | - | | - | - | | | | | |
| | | Managerial Economics | - | | | | - | - | | | |
| | | Accounting for Decision Making | | | | | | | | | |
| | | Legal Aspects of Business | - | - | - | | | | | | |
| | | Information Management | - | | - | - | | | | - | - |
| | | Marketing Management | - | | | - | | | | | - |
| | | Indian Ethos and Business Ethics Seminar | | | | | - | - | | | - |
| | | Business Communication (Laboratory) | | | - | - | | | | - | - |
| | SEM 2 | Quantitative Techniques for Decision Making | | | | | | | | | |
| | | Financial Management | | | | | | | | | |
| | | Human Resource Management | - | | - | - | | | | - | - |
| | | Operations Management | - | - | | - | | | | - | |
| | | Business Research Methods | | | | | | | | - | |
| | | Business Analytics | | | | | | | | | - |
| | | Non-Functional Elective | | | | | | | | | |
| | | Data Analysis and Business Modelling (Laboratory) | | | | | | | | - | - |
| | | Rural Community Engagement | - | | - | | | | | - | - |
| | YEAR 2 | SEM 3 | Strategic Management | - | | - | - | | | - | |
| International Business | | | - | | - | | | | | | - |
| Creativity and Innovation Laboratory | | | - | - | | - | | | | - | - |
| Elective I | | | | | | | | | | | |
| Elective II | | | | | | | | | | | |
| Elective III | | | | | | | | | | | |
| Elective IV | | | | | | | | | | | |
| Elective V | | | | | | | | | | | |
| Elective VI | | | | | | | | | | | |
| Summer Internship | | | - | - | - | - | - | - | - | - | - |
| | SEM 4 | Project work - 16 weeks Project Work + Maximum 4 weeks for report writing | - | - | - | - | - | - | - | - | |

NON - FUNCTIONAL ELECTIVES

| Sl. No. | Subject | Programme Outcomes | | | | | | | | |
|---------|--|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 |
| 1. | Entrepreneurship Development | - | | | - | | | | | |
| 2. | Corporate Governance | - | | - | - | | | | - | |
| 3. | Event Management | | | | - | | | | - | |
| 4. | Micro and Small Business Management | - | | | - | | | | - | |
| 5. | Fuzzy logic for Management Decision Making | | - | | | - | - | - | | |
| 6. | Intellectual Property Rights | | | | - | | | | - | |
| 7. | Sustainable Management | - | | - | - | | | | - | |

STREAM / SPECIALIZATION : FINANCIAL MANAGEMENT

| Sl. No. | Subject | Programme Outcomes | | | | | | | | |
|---------|--|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 |
| 1. | Security Analysis and Portfolio Management | | | | | | - | | - | - |
| 2. | Financial markets | | | | | | - | | - | |
| 3. | Banking and Financial Services | | | | | | - | | - | |
| 4. | Financial Derivatives | | | | | | - | | - | |
| 5. | Financial Modelling | | | - | | | - | - | - | - |
| 6. | Business Analysis and Valuation | | | - | - | | - | - | - | |
| 7. | International Finance | | | | | | - | | - | |
| 8. | Behavioral Finance | - | | | | | - | | - | - |
| 9. | Fintech and Blockchain Applications in Finance | | | - | | | - | - | - | - |

STREAM / SPECIALIZATION : OPERATIONS MANAGEMENT

| | | | | | | | | | | |
|-----|--------------------------------|---|---|---|---|---|---|---|---|---|
| 10. | Supply Chain Management | | - | | - | - | | | | - |
| 11. | Quality Management | - | | | - | | | | - | - |
| 12. | Materials Management | | | | - | | | | | |
| 13. | Services Operations Management | - | - | - | - | - | | | | - |
| 14. | Process Management | - | - | | - | | | | | |
| 15. | Supply Chain Analytics | | - | | - | - | - | - | - | |
| 16. | Project Management | - | - | | - | | | | | - |
| 17. | Product design | | | | - | | | | | - |
| 18. | Lean Six Sigma | | - | | - | - | - | | - | |
| 19. | Robust Design | - | | | - | | | | - | - |

STREAM / SPECIALIZATION : MARKETING MANAGEMENT

| Sl. No. | Subject | Programme Outcomes | | | | | | | | |
|---------|--|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 |
| 20. | Retail Marketing | | | | - | | | | | - |
| 21. | Consumer Behavior | - | | - | - | | | | - | - |
| 22. | Integrated Marketing Communications | | | | - | - | | | | |
| 23. | Services Marketing | - | | - | - | | | | | - |
| 24. | Sales and Distribution Management | | | | - | | | | | - |
| 25. | Product and Brand Management | | | | - | | | | | |
| 26. | Digital Marketing | | - | | - | - | - | - | | |
| 27. | International Marketing | - | | | - | | - | | | - |
| 28. | Marketing Analytics | | - | | - | - | - | - | - | |
| 29. | B2B & B2C Sales & Marketing | | | | | | | | | |

STREAM / SPECIALIZATION : HUMAN RESOURCE MANAGEMENT

| | | | | | | | | | | |
|-----|--|---|---|---|---|---|---|---|---|---|
| 30. | Strategic Human Resource Management | - | | | - | | - | | - | - |
| 31. | Industrial Relations and Labour Legislations | - | | | - | | | | | - |
| 32. | Social Psychology | - | | - | - | - | | | - | |
| 33. | Organizational, Design, Change and Development | | | | - | | - | | | - |
| 34. | Managerial Behavior and Effectiveness | - | | - | - | - | | | - | - |
| 35. | Negotiation and Conflict Management | - | | - | - | - | | | | - |
| 36. | Reward and Compensation Management | | | | - | - | | | - | |
| 37. | Personal Effectiveness | - | | - | - | - | | - | - | - |
| 38. | International Human Resources Management | | | | - | | - | | - | |
| 39. | Human Resource Analytics | | - | | - | | - | - | | |
| 40. | Talent Acquisition and Management | | | | | | | | | |

STREAM / SPECIALIZATION : SYSTEMS MANAGEMENT

| | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|
| 41. | e-business | | | - | - | | | | - | - |
| 42. | Internet of Things | | | | - | | - | | - | - |
| 43. | Cloud computing | | | | - | - | | | - | |
| 44. | Enterprise Resource Planning | - | | | - | | | | - | - |
| 45. | Software Project and quality management | | | | - | - | | | | |
| 46. | Data Mining for Business Intelligence | | - | | - | | | | - | - |
| 47. | Big Data Analytics | | - | | - | - | - | - | | |
| 48. | Deep Learning & Artificial Intelligence | | | - | - | - | - | - | - | |
| 49. | R Programming | | - | | | - | - | - | | |
| 50. | Python Programming | | - | | | - | - | - | | |

STREAM / SPECIALIZATION : BUSINESS ANALYTICS

| Sl. No. | Subject | Programme Outcomes | | | | | | | | |
|---------|---|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 |
| 51. | Block Chain Technology | | | | - | - | - | | | |
| 52. | Social media web Analytics | | - | | - | - | - | - | | - |
| 53. | Stochastic Modelling | | - | | | - | - | - | | |
| 54. | Time Series Analysis | | - | | | - | - | - | | |
| 55. | Multivariate data analysis | | - | | | - | - | - | | |
| 56. | Data Mining for Business Intelligence | | - | | - | | | | - | - |
| 57. | Big Data Analytics | | - | | - | - | - | - | | |
| 58. | Deep Learning & Artificial Intelligence | | | - | - | - | - | - | - | |
| 59. | R Programming | | - | | | - | - | - | | |
| 60. | Python Programming | | - | | | - | - | - | | |
| 61. | Logistics & Supply Chain Management | | | | | | | | | |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF MANAGEMENT STUDIES (MBA)

REGULATIONS - 2021 ONWARDS

FOR THE STUDENTS ADMITTED DURING 2021 - 22 AND ONWARDS

CHOICE BASED CREDIT SYSTEM

MASTER OF BUSINESS ADMINISTRATION (FULL - TIME)

CURRICULUM AND SYLLABI FOR I TO IV SEMESTERS

SEMESTER I

| Sl No. | Course Code | Course Title | Category | Periods per week | | | Total contact periods | Credits |
|--------|-------------|---|----------|------------------|---|---|-----------------------|-----------|
| | | | | L | T | P | | |
| | | THEORY | | | | | | |
| 1. | 21MBA11 | Statistics for Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 21MBA12 | Management Concepts and Organizational Behavior | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 21MBA13 | Managerial Economics | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 21MBA14 | Accounting for Decision Making | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | 21MBA15 | Legal Aspects of Business | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | 21MBA16 | Information Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 7. | 21MBA17 | Marketing Management | PCC | 3 | 0 | 0 | 3 | 3 |
| | | PRACTICALS | | | | | | |
| 8. | 21MBAL18 | Indian Ethos and Business Ethics (Seminar) | EEC | 0 | 0 | 4 | 4 | 2 |
| 9. | 21MBAL19 | Business Communications (Laboratory) | EEC | 0 | 0 | 4 | 4 | 2 |
| | | TOTAL CREDITS | | | | | | 25 |

SEMESTER II

| Sl No. | Course Code | Course Title | Category | Periods per week | | | Total contact periods | Credits |
|--------|-------------|--|----------|------------------|---|---|-----------------------|-----------|
| | | | | L | T | P | | |
| | | THEORY | | | | | | |
| 1. | 21MBA21 | Quantitative Techniques for Decision Making | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 21MBA22 | Financial Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | 21MBA23 | Human Resource Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | 21MBA24 | Operations Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | 21MBA25 | Business Research Methods | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | 21MBA26 | Business Analytics | PCC | 3 | 0 | 0 | 3 | 3 |
| 7. | | Non-Functional Elective | PEC | 3 | 0 | 0 | 3 | 3 |
| | | PRACTICALS | | | | | | |
| 8. | 21MBAL27 | Data analysis and Business Modeling (Laboratory) | PCC | 0 | 0 | 4 | 4 | 2 |
| 9. | 21MBAL28 | Rural Community Engagement | EEC | 0 | 0 | 4 | 4 | 2 |
| | | TOTAL CREDITS | | | | | | 25 |

NOTE : In the second semester Students need to choose one elective from the Non-Functional stream

Summer internship - minimum of 4 weeks of internship Training Report has to be submitted

SEMESTER III

| Sl No. | Course Code | Course Title | Category | Periods per week | | | Total contact periods | Credits |
|--------|-------------|--------------------------------------|----------|------------------|---|---|-----------------------|-----------|
| | | | | L | T | P | | |
| | | THEORY | | | | | | |
| 1. | 21MBA31 | Strategic Management | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | 21MBA32 | International Business | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | | Elective I | PEC | 3 | 0 | 0 | 3 | 3 |
| 4. | | Elective II | PEC | 3 | 0 | 0 | 3 | 3 |
| 5. | | Elective III | PEC | 3 | 0 | 0 | 3 | 3 |
| 6. | | Elective IV | PEC | 3 | 0 | 0 | 3 | 3 |
| 7. | | Elective V | PEC | 3 | 0 | 0 | 3 | 3 |
| 8. | | Elective VI | PEC | 3 | 0 | 0 | 3 | 3 |
| | | PRACTICALS | | | | | | |
| 9. | 21MBAL33 | Creativity and Innovation Laboratory | EEC | 0 | 0 | 4 | 4 | 2 |
| 10. | 21MBAL34 | Summer Internship | EEC | 0 | 0 | 4 | 4 | 2 |
| | | TOTAL CREDITS | | | | | | 28 |

NOTE : In the third semester Students need to choose -Three electives from 2 functional streams for Dual Specialization

SEMESTER IV

| SI No. | Course Code | Course Title | Category | Periods per week | | | Total contact periods | Credits |
|--------|-------------|----------------------|----------|------------------|---|----|-----------------------|-----------|
| | | | | L | T | P | | |
| | | THEORY | | | | | | |
| 1. | 21MBA41 | Project Work | EEC | 0 | 0 | 24 | 24 | 12 |
| | | TOTAL CREDITS | | | | | | 12 |

GRAND TOTAL NO. OF CREDITS : 90

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University)

DEPARTMENT OF CIVIL ENGINEERING

B.E. CIVIL ENGINEERING-FULL TIME

(III TO VIII SEMESTER)

Curriculum from the Academic Year 2019 - 2020 and onwards

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|----------------|---|----------|----------|----------|-----------|------------|
| 19CEM31 | Differential Equations and Boundary Value Problems | 3 | 1 | 0 | 4 | BSC |
| 19CE31 | Mechanics of Solids | 3 | 1 | 0 | 4 | ES |
| 19CE32 | Engineering Geology | 3 | 0 | 0 | 3 | PC |
| 19CE33 | Mechanics of Fluids | 3 | 0 | 0 | 3 | PC |
| 19CE34 | Surveying | 3 | 0 | 0 | 3 | PC |
| 19CE35 | Water Supply Engineering | 3 | 0 | 0 | 3 | PC |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HSC |
| 19CEL36 | Strength of Materials Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CEL37 | Survey Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 1 | 0 | 0 | 1 | EEC |
| 19HOC31 | Communication Skills for Engineers I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 25 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|----------------|---|----------|----------|----------|-----------|------------|
| 19CE41 | Construction Technology | 3 | 0 | 0 | 3 | PC |
| 19CE42 | Strength of Materials | 3 | 1 | 0 | 4 | PC |
| 19CE43 | Transportation Engineering | 3 | 0 | 0 | 3 | PC |
| 19CE44 | Applied Hydraulics and Hydraulic Machinery | 3 | 0 | 0 | 3 | PC |
| 19CE45 | Waste Water Engineering | 3 | 0 | 0 | 3 | PC |
| 19CE46 | Professional Practices and Ethics | 3 | 0 | 0 | 3 | BSC |
| 19CEL47 | Hydraulics Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CEL48 | Environmental Engineering Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 1 | 0 | 0 | 1 | EEC |
| 19HOC41 | Communication Skills for Engineers II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |
| | * Not to be counted for GPA. Pass is required | | | | | |

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|----------------|---|----------|----------|----------|-----------|------------|
| 19CE51 | Structural Analysis - I | 3 | 0 | 0 | 3 | PC |
| 19CE52 | Design of Reinforced Concrete Structural Elements | 3 | 0 | 0 | 3 | PC |
| 19CE53 | Mechanics of Soils | 3 | 0 | 0 | 3 | PC |
| 19CE54 | Concrete Technology | 3 | 0 | 0 | 3 | PC |
| | Elective- I | 3 | 0 | 0 | 3 | EC |
| | Elective - II | 3 | 0 | 0 | 3 | EC |
| 19CEL55 | Computer Aided Civil Engineering Drawing | 0 | 0 | 2 | 1 | ES |
| 19CEL56 | Highway Engineering Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 1 | 0 | 0 | 1 | EEC |
| | Mini Project | - | - | - | - | EEC |
| 19INT51 | Internship* | 0 | 0 | 2 | 1 | EEC |
| 19HOC51 | Employability and Personality Development Skills I # | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

***2 weeks of Internship to be completed during 4th semester vacation**

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|----------------|---|----------|----------|----------|-----------|------------|
| 19CE61 | Structural Analysis - II | 3 | 0 | 0 | 3 | PC |
| 19CE62 | Design of Steel Structures | 3 | 0 | 0 | 3 | PC |
| 19CE63 | Foundation Engineering | 3 | 0 | 0 | 3 | PC |
| | Elective- III | 3 | 0 | 0 | 3 | EC |
| | Elective- IV | 3 | 0 | 0 | 3 | EC |
| 19CEL64 | Soil Mechanics Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CEL65 | Quantity Surveying and Project Planning Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 1 | 0 | 0 | 1 | EEC |
| 19CE66 | Mini Project | 0 | 0 | 6 | 3 | EEC |
| 19INT61 | Internship* | 0 | 0 | 2 | 1 | EEC |
| 19HOC61 | Employability and Personality Development Skills # | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

***2 weeks of Internship to be completed during 5th semester vacation**

Not to be counted for GPA. Pass is required

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19CE71 | Irrigation Engineering | 3 | 0 | 0 | 3 | PC |
| 19CE72 | Earthquake Resistant Design of Structures | 3 | 0 | 0 | 3 | PC |
| 19CE73 | Construction Management | 3 | 0 | 0 | 3 | PC |
| | Elective- V | 3 | 0 | 0 | 3 | EC |
| | Elective- VI | 3 | 0 | 0 | 3 | EC |
| 19CEL74 | Computer Applications Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CEL75 | Concrete Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CE76 | Project Work Phase I | 0 | 0 | 6 | 3 | EEC |
| | TOTAL CREDITS | | | | 20 | |

Semester VIII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|-----------------------|---|---|----|-----------|----------|
| | Elective- VII | 3 | 0 | 0 | 3 | EC |
| | Elective-VIII | 3 | 0 | 0 | 3 | EC |
| 19CE81 | Project Work Phase II | 0 | 0 | 10 | 5 | EEC |
| | TOTAL CREDITS | | | | 11 | |

* Including first year credits

TOTAL CREDITS = 164*

BSC - Basic Sciences

HSC - Humanities and Social Sciences

ES - Engineering Sciences

PC - Professional Core

PE - Professional Elective

OE - Open Elective

EEC - Employability Enhancement Course

EC - Elective Course - PE / OE

LIST OF ELECTIVES**PROFESSIONAL ELECTIVES****1. STRUCTURAL ENGINEERING**

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|--|---|---|---|---|----------|
| 1 | 19CEE01 | Design of Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 2 | 19CEE02 | Advanced Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 3 | 19CEE03 | Prestressed Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 4 | 19CEE04 | Design of Bridges | 3 | 0 | 0 | 3 | PE |
| 5 | 19CEE05 | Advanced Steel Structures | 3 | 0 | 0 | 3 | PE |
| 6 | 19CEE06 | Advanced Structural Analysis | 3 | 0 | 0 | 3 | PE |
| 7 | 19CEE07 | Prefabricated Structures | 3 | 0 | 0 | 3 | PE |
| 8 | 19CEE08 | Advanced Surveying | 3 | 0 | 0 | 3 | PE |
| 9 | 19CEE09 | Numerical Methods for Civil Engineering | 3 | 0 | 0 | 3 | PE |
| 10 | 19CEE10 | Finite Element Method | 3 | 0 | 0 | 3 | PE |
| 11 | 19CEE11 | Industrial Structures | 3 | 0 | 0 | 3 | PE |
| 12 | 19CEE12 | Smart Materials and Structures | 3 | 0 | 0 | 3 | PE |
| 13 | 19CEE13 | Safety in Civil Engineering Practice | 3 | 0 | 0 | 3 | PE |
| 14 | 19CEE14 | Remote Sensing and GIS | 3 | 0 | 0 | 3 | PE |
| 15 | 19CEE15 | Ground Improvement Techniques | 3 | 0 | 0 | 3 | PE |
| 16 | 19CEE16 | Design of Deep Foundation | 3 | 0 | 0 | 3 | PE |
| 17 | 19CEE17 | Earthquake Resistant Design of Masonry and Timber Structures | 3 | 0 | 0 | 3 | PE |
| 18 | 19CEE18 | Building Services and Maintenance Engineering | 3 | 0 | 0 | 3 | PE |
| 19 | 19CEE19 | Optimization Techniques in Civil Engineering | 3 | 0 | 0 | 3 | PE |
| 20 | 19CEE20 | Theory of Architecture | 3 | 0 | 0 | 3 | PE |
| 21 | 19CEE21 | Green Building Concepts and Practices | 3 | 0 | 0 | 3 | PE |

2. ENVIRONMENTAL ENGINEERING

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|--|---|---|---|---|----------|
| 1 | 19CEE22 | Design of Environmental Structures and Drawing | 3 | 0 | 0 | 3 | PE |
| 2 | 19CEE23 | Air Pollution and Control | 3 | 0 | 0 | 3 | PE |
| 3 | 19CEE24 | Solid and Hazardous Waste Management | 3 | 0 | 0 | 3 | PE |
| 4 | 19CEE25 | Environmental Impact Assessment | 3 | 0 | 0 | 3 | PE |
| 5 | 19CEE26 | Industrial Waste Water Management | 3 | 0 | 0 | 3 | PE |
| 6 | 19CEE27 | Geo Environmental Engineering | 3 | 0 | 0 | 3 | PE |

3. TRANSPORTATION ENGINEERING

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|---------------------------------|---|---|---|---|----------|
| 1 | 19CEE28 | Pavement Engineering | 3 | 0 | 0 | 3 | PE |
| 2 | 19CEE29 | Airport and Harbour Engineering | 3 | 0 | 0 | 3 | PE |
| 3 | 19CEE30 | Traffic Engineering | 3 | 0 | 0 | 3 | PE |
| 4 | 19CEE31 | Urban Transportation Planning | 3 | 0 | 0 | 3 | PE |
| 5 | 19CEE32 | Intelligent Transport System | 3 | 0 | 0 | 3 | PE |

4. HYDRAULICS

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|-----------------------|---|---|---|---|----------|
| 1 | 19CEE33 | Hydraulic Structures | 3 | 0 | 0 | 3 | PE |
| 2 | 19CEE34 | Engineering Hydrology | 3 | 0 | 0 | 3 | PE |

5. CONSTRUCTION ENGINEERING AND MANAGEMENT

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|--|---|---|---|---|----------|
| 1 | 19CEE35 | Valuation of Immovable Properties | 3 | 0 | 0 | 3 | PE |
| 2 | 19CEE36 | Engineering Economics | 3 | 0 | 0 | 3 | PE |
| 3 | 19CEE37 | Maintenance and Rehabilitation of Structures | 3 | 0 | 0 | 3 | PE |
| 4 | 19CEE38 | Advanced Construction Technology | 3 | 0 | 0 | 3 | PE |
| 5 | 19CEE39 | Contract Management | 3 | 0 | 0 | 3 | PE |
| 6 | 19CEE40 | Construction Equipments and Techniques | 3 | 0 | 0 | 3 | PE |
| 7 | 19CEE41 | Formwork for Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 8 | 19CEE42 | Entrepreneurship in Civil Engineering | 3 | 0 | 0 | 3 | PE |

ONE CREDIT COURSES***A) INDUSTRY BASED ONE CREDIT COURSES**

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|---|---|---|---|---|----------|
| 1 | 19CEOC01 | Building Construction Process- An Overview | 1 | 0 | 0 | 1 | OC |
| 2 | 19CEOC02 | Applications of IOT in Civil Engineering | 1 | 0 | 0 | 1 | OC |
| 3 | 19CEOC03 | Certification and Career Roadmap in Civil Engineering | 1 | 0 | 0 | 1 | OC |
| 4 | 19CEOC04 | Environmental Monitoring | 1 | 0 | 0 | 1 | OC |
| 5 | 19CEOC05 | Python for Civil Engineers | 1 | 0 | 0 | 1 | OC |
| 6 | 19CEOC06 | 3D Printing of Civil Engineering Structures | 1 | 0 | 0 | 1 | OC |

B) DEPARTMENT BASED ONE CREDIT COURSES

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|---|---|---|---|---|----------|
| 1 | 19CEOC07 | Alternative Building Materials from Waste | 1 | 0 | 0 | 1 | OC |
| 2 | 19CEOC08 | Structural Drawing | 0 | 0 | 2 | 1 | OC |
| 3 | 19CEOC09 | Sustainability in Construction | 1 | 0 | 0 | 1 | OC |
| 4 | 19CEOC10 | Introduction to Image Processing and GIS | 0 | 0 | 2 | 1 | OC |

C) NPTEL ONLINE COURSES

* One credit courses could be opted from Department / Industry / NPTEL

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

LIST OF OPEN ELECTIVES

DEPARTMENT OF CIVIL ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|---------------------------------------|---|---|---|---|-------------------|
| 19CEOE01 | Town Planning and Architecture | 3 | 0 | 0 | 3 | All Branches |
| 19CEOE02 | Climate Change and Adaptation | 3 | 0 | 0 | 3 | All Branches |
| 19CEOE03 | Metro Systems and Engineering | 3 | 0 | 0 | 3 | All Branches |
| 19CEOE04 | Renewable Energy Sources | 3 | 0 | 0 | 3 | All Branches |
| 19CEOE05 | Principles of Sustainable Development | 3 | 0 | 0 | 3 | All Branches |
| 19CEOE06 | Disaster Management | 3 | 0 | 0 | 3 | All Branches |

DEPARTMENT OF MECHANICAL ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|---|---|---|---|---|--------------------------------|
| 19MEOE01 | Design of Experiments | 3 | 0 | 0 | 3 | All branches |
| 19MEOE02 | Engineering Optimization | 3 | 0 | 0 | 3 | All branches |
| 19MEOE03 | Engineering Polymers, Composites and Allied Manufacturing Processes | 3 | 0 | 0 | 3 | Mechanical Chemical & Civil |
| 19MEOE04 | Industrial Robotics | 3 | 0 | 0 | 3 | Mechanical EEE and ECE |
| 19MEOE05 | Business Process Re-engineering | 3 | 0 | 0 | 3 | All branches |
| 19MEOE06 | Engineering Economics and Financial Management | 3 | 0 | 0 | 3 | All branches |

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|---|---|---|---|---|--|
| 19EEOE01 | Energy Auditing | 3 | 0 | 0 | 3 | ECE, Mech, Chemical, Civil |
| 19EEOE02 | Solar and Wind Energy systems | 3 | 0 | 0 | 3 | ECE, Mech, Chemical |
| 19EEOE03 | Electrical Safety Procedures and Management | 3 | 0 | 0 | 3 | All Branches |
| 19EEOE04 | Energy Efficient Illumination Systems | 3 | 0 | 0 | 3 | All Branches |
| 19EEOE05 | Electric Vehicle Technology | 3 | 0 | 0 | 3 | All Branches except Civil & Chemical |
| 19EEOE06 | Energy Efficiency in Thermal and Electrical Utilities | 3 | 0 | 0 | 3 | EEE & Mechanical |

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--|---|---|---|---|------------------------------|
| 19ECEOE01 | Signal Processing and its Applications | 3 | 0 | 0 | 3 | Chemical, Mechanical & Civil |
| 19ECEOE02 | Smart Sensors and IoT | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE03 | Consumer Electronics | 3 | 0 | 0 | 3 | Mechanical & Civil |
| 19ECEOE04 | Robotics | 3 | 0 | 0 | 3 | Mechanical, CSE & IT |
| 19ECEOE05 | Information Theory and Coding Techniques | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE06 | Wireless Sensor Networks | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE07 | Automotive Embedded Systems | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE08 | 5G Technologies and Applications | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE09 | Vehicular Communication | 3 | 0 | 0 | 3 | All Branches |
| 19ECEOE010 | Sensing for Automotive Systems | 3 | 0 | 0 | 3 | All Branches |

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--|---|---|---|---|-------------------|
| 19CSOE01 | Customer Relationship Management | 3 | 0 | 0 | 3 | All Branches |
| 19CSOE02 | Fundamentals of Software Engineering | 3 | 0 | 0 | 3 | All Branches |
| 19CSOE03 | Internet Programming | 3 | 0 | 0 | 3 | All Branches |
| 19CSOE04 | Introduction to Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | All Branches |
| 19CSOE05 | Introduction to Embedded Systems | 3 | 0 | 0 | 3 | All Branches |

DEPARTMENT OF INFORMATION TECHNOLOGY

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--|---|---|---|---|----------------------------------|
| 19ITOE01 | Digital Computer Basics | 3 | 0 | 0 | 3 | Civil, Mech, Chem |
| 19ITOE02 | Programming in Java | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |
| 19ITOE03 | Fundamentals of Database Systems | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |
| 19ITOE04 | Cloud Computing Fundamentals | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |
| 19ITOE05 | Information Security Fundamentals | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |
| 19ITOE06 | Introduction to Human Computer Interaction | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |
| 19ITOE07 | Enterprise Resource planning Concepts | 3 | 0 | 0 | 3 | EEE, ECE, Mech, Civil & Chemical |

DEPARTMENT OF CHEMICAL ENGINEERING

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--|---|---|---|---|-------------------|
| 19CHOE01 | Industrial Safety Engineering | 3 | 0 | 0 | 3 | All Branches |
| 19CHOE02 | Risk Analysis and Hazop | 3 | 0 | 0 | 3 | All Branches |
| 19CHOE03 | Green Technology | 3 | 0 | 0 | 3 | All Branches |
| 19CHOE04 | Corrosion Science and Engineering | 3 | 0 | 0 | 3 | All Branches |
| 19CHOE05 | Introduction to Chemical Engineering | 3 | 0 | 0 | 3 | All Branches |
| 19CHOE06 | Nanomaterial Synthesis and Characterization Laboratory | 0 | 0 | 6 | 3 | All Branches |
| 19CHOE07 | Multivariate Statistics Laboratory | 0 | 0 | 6 | 3 | All Branches |

DEPARTMENT OF MATHEMATICS

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|-------------------------------------|---|---|---|---|-------------------|
| 19MOE01 | Graph Theory & its Applications | 3 | 0 | 0 | 3 | All Branches |
| 19MOE02 | Methods of Applied Mathematics | 3 | 0 | 0 | 3 | All Branches |
| 19MOE03 | Linear and Non - Linear Programming | 3 | 0 | 0 | 3 | All Branches |
| 19MOE04 | Probability and Random Processes | 3 | 0 | 0 | 3 | All Branches |

DEPARTMENT OF PHYSICS

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--|---|---|---|---|---------------------------------|
| 19POE01 | Introduction to Nanoscience and Nanotechnology | 3 | 0 | 0 | 3 | All Branches except IT |
| 19POE02 | Physics and Technology of Thin Films | 3 | 0 | 0 | 3 | Mechanical, EEE, Chemical & ECE |
| 19POE03 | Solar Cell Fundamentals and Materials | 3 | 0 | 0 | 3 | EEE, ECE & Chemical |
| 19POE04 | Advanced Material Processing Technologies | 3 | 0 | 0 | 3 | Mechanical & Chemical |

DEPARTMENT OF CHEMISTRY

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|-------------|--------------------------------|---|---|---|---|------------------------------|
| 19COE01 | Medical Nanotechnology | 3 | 0 | 0 | 3 | Chemical |
| 19COE02 | Advanced Drug Delivery Systems | 3 | 0 | 0 | 3 | Chemical |
| 19COE03 | Biosensors | 3 | 0 | 0 | 3 | Chemical, ECE & EEE |
| 19COE04 | Nanocomposites | 3 | 0 | 0 | 3 | Mechanical, Chemical & Civil |
| 19COE05 | Biorefinery | 3 | 0 | 0 | 3 | Mechanical & Chemical |

DEPARTMENT OF HUMANITIES

| Course Code | Course Name | L | T | P | C | Eligible Branches |
|--------------------|----------------------------------|----------|----------|----------|----------|--------------------------|
| 19HOE01 | Principles of Management | 3 | 0 | 0 | 3 | Common to all branches |
| 19HOE02 | Current Trends in Indian Economy | 3 | 0 | 0 | 3 | Common to all branches |
| 19HOE03 | Monetary Economics | 3 | 0 | 0 | 3 | Common to all branches |
| 19HOE04 | English for Academic Purposes | 3 | 0 | 0 | 3 | Common to all branches |
| 19HOE05 | English for Competitive Exams | 3 | 0 | 0 | 3 | Common to all branches |
| 19HOE06 | Life and Literature | 3 | 0 | 0 | 3 | Common to all branches |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University)

DEPARTMENT OF MECHANICAL ENGINEERING

BACHELOR OF MECHANICAL ENGINEERING

CHOICE BASED CREDIT SYSTEM

Curriculum from the Academic Year 2019 - 2020 and onwards

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|------------------------|---|---|---|---|-------------|----------|
| 19MEM31 | Ordinary and Partial Differential Equations | 3 | 1 | 0 | 4 | BSC |
| 19ME31 | Engineering Thermodynamics | 3 | 1 | 0 | 4 | PCC |
| 19ME32 | Engineering Mechanics for Mechanical Engineers | 3 | 1 | 0 | 4 | PCC |
| 19ME33 | Fluid Mechanics and Machinery | 3 | 0 | 0 | 3 | PCC |
| 19ME34 | Embedded Processor Architecture and Programming | 3 | 0 | 0 | 3 | ESC |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 1 | 0 | 1 | HS |
| 19MEL35 | Computer Aided Machine Drawing - I | 0 | 0 | 2 | 1 | PCC |
| 19MEL36A / 19MEL36B | Fluid Mechanics & Machinery Laboratory / Electrical Machines & Drives and Embedded Systems Laboratory | 0 | 0 | 2 | 0.5 | PCC |
| | One Credit Course - Elective I | 1 | 0 | 0 | 1 | EEC |
| 19HOC31 | Communication Skills for Engineers - I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22.5 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|------------------------|---|---|---|---|-----|----------|
| 19ME41 | Applied Thermodynamics | 3 | 1 | 0 | 4 | PCC |
| 19ME42 | Strength of Materials | 3 | 1 | 0 | 4 | PCC |
| 19ME43 | Mechanics of Machines | 3 | 1 | 0 | 4 | PCC |
| 19ME44 | Materials Engineering | 3 | 0 | 0 | 3 | PCC |
| 19ME45 | Manufacturing Processes - I | 3 | 0 | 0 | 3 | PCC |
| 19MEL46 | Computer Aided Machine Drawing - II | 0 | 0 | 2 | 1 | PCC |
| 19MEL36A / 19MEL36B | Fluid Mechanics & Machinery Laboratory / Electrical Machines & Drives and Embedded Systems Laboratory | 0 | 0 | 2 | 0.5 | PCC |

| | | | | | | |
|------------------------|--|---|---|---|-----------|-----|
| 19MEL47A / 19MEL47B | Material Characterization and Testing Laboratory / Manufacturing Processes Laboratory | 0 | 0 | 2 | 0.5 | PCC |
| | One Credit Course - Elective II | 1 | 0 | 0 | 1 | EEC |
| 19HOC41 | Communication Skills for Engineers - II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

* Not to be counted for GPA. Pass is required.

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|------------------------|--|---|---|---|-----------|----------|
| 19ME51 | Heat and Mass Transfer | 3 | 1 | 0 | 4 | PCC |
| 19ME52 | Design of Machine Elements | 3 | 1 | 0 | 4 | PCC |
| 19ME53 | Manufacturing Processes - II | 3 | 0 | 0 | 3 | PCC |
| 19ME54 | Metrology and Quality Control | 3 | 0 | 0 | 3 | PCC |
| 19ME55 | Operations Research | 3 | 1 | 0 | 4 | HS |
| | Elective 1 | 3 | 0 | 0 | 3 | PEC |
| 19MEL47A / 19MEL47B | Material Characterization and Testing Laboratory / Manufacturing Processes Laboratory | 0 | 0 | 2 | 0.5 | PCC |
| 19MEL56A / 19MEL56B | Applied Thermal Sciences Laboratory / Dynamics and Metrology Laboratory | 0 | 0 | 2 | 0.5 | PCC |
| | One Credit Course - Elective III | 1 | 0 | 0 | 1 | EEC |
| 19INT51 | Internship - I | 0 | 0 | 0 | 1 | EEC |
| 19ME67 | Mini Project | 0 | 0 | 3 | 0 | EEC |
| 19HOC51 | Employability and Personality Development Skills - I* | 0 | 0 | 2 | 1 | |
| | TOTAL CREDITS | | | | 25 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|------------------------|--|---|---|---|-------------|----------|
| 19ME61 | Refrigeration and Air-conditioning | 3 | 0 | 0 | 3 | PCC |
| 19ME62 | Finite Element Analysis | 3 | 1 | 0 | 4 | PCC |
| 19ME63 | Design of Transmission Systems | 3 | 1 | 0 | 4 | PCC |
| 19ME64 | Computer Aided Engineering | 3 | 1 | 0 | 4 | PCC |
| | Elective 2 | 3 | 0 | 0 | 3 | PEC |
| 19MEL56A / 19MEL56B | Applied Thermal Sciences Laboratory / Dynamics and Metrology Laboratory | 0 | 0 | 2 | 0.5 | PCC |
| 19MEL65 | CAD / CAM Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course - Elective IV | 1 | 0 | 0 | 1 | PCC |
| 19INT61 | Internship - II | 0 | 0 | 0 | 1 | EEC |
| 19ME67 | Mini Project | 0 | 0 | 3 | 3 | EEC |
| 19HOC61 | Employability and Personality Development Skills - II* | 0 | 0 | 2 | 1 | |
| | TOTAL CREDITS | | | | 25.5 | |

* Not to be counted for GPA. Pass is required.

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|---------------|------------------------------------|---|---|---|-----------|----------|
| 19ME71 | Control Theory and Mechatronics | 2 | 0 | 2 | 3 | PCC |
| 19ME72 | Quality Engineering and Management | 3 | 0 | 0 | 3 | PCC |
| | Elective 3 | 3 | 0 | 0 | 3 | PEC |
| | Elective 4 | 3 | 0 | 0 | 3 | PEC |
| | Elective 5 | 3 | 0 | 0 | 3 | OEC |
| | Elective 6 | 3 | 0 | 0 | 3 | OEC |
| 19ME73 | Project Work Phase - I | 0 | 0 | 6 | 3 | EEC |
| | TOTAL CREDITS | | | | 21 | |

Semester VIII

| Course Code | Course Name | L | T | P | C | Category |
|---------------|--------------------------------|---|---|----|-----------|----------|
| | Elective 7 | 3 | 0 | 0 | 3 | PEC |
| | Elective 8 | 3 | 0 | 0 | 3 | PEC |
| 19ME81 | Project Work Phase - II | 0 | 0 | 10 | 5 | EEC |
| | TOTAL CREDITS | | | | 11 | |

| | |
|----------------------|------------|
| Semester 1 | 20 |
| Semester 2 | 19 |
| Semester 3 | 22.5 |
| Semester 4 | 22 |
| Semester 5 | 25 |
| Semester 6 | 25.5 |
| Semester 7 | 21 |
| Semester 8 | 11 |
| Total Credits | 166 |

List of Professional Elective Courses (PEC)**STREAM : MATERIALS AND DESIGN**

| Course Code | Course Name | L | T | P | C |
|-------------|--|---|---|---|---|
| 19MEE01 | Composite Materials | 3 | 0 | 0 | 3 |
| 19MEE02 | Design for Manufacturing and Assembly | 3 | 0 | 0 | 3 |
| 19MEE03 | Design of Jigs and Fixtures | 3 | 0 | 0 | 3 |
| 19MEE04 | Mechanical Behaviour of Materials | 3 | 0 | 0 | 3 |
| 19MEE05 | Machine Tool Design | 3 | 0 | 0 | 3 |
| 19MEE06 | Mechanical Vibrations and Control | 3 | 0 | 0 | 3 |
| 19MEE07 | Tribology | 3 | 0 | 0 | 3 |
| 19MEE08 | Experimental Stress Analysis | 3 | 0 | 0 | 3 |
| 19MEE09 | Fluid Power Control Systems | 3 | 0 | 0 | 3 |
| 19MEE10 | Sensor Technology | 3 | 0 | 0 | 3 |
| 19MEE11 | Smart Materials | 3 | 0 | 0 | 3 |
| 19MEE12 | Non-Destructive Evaluation and Imaging | 3 | 0 | 0 | 3 |
| 19MEE13 | Automotive Electronics and Power Train Systems | 3 | 0 | 0 | 3 |
| 19MEE14 | Bio-materials | 3 | 0 | 0 | 3 |
| 19MEE15 | Micro and Nano Electro-mechanical Systems | 3 | 0 | 0 | 3 |

STREAM : THERMAL SCIENCES

| Course Code | Course Name | L | T | P | C |
|-------------|---|---|---|---|---|
| 19MEE16 | Solar Energy Technology | 3 | 0 | 0 | 3 |
| 19MEE17 | Gas Dynamics and Space Propulsion | 3 | 0 | 0 | 3 |
| 19MEE18 | Computational Fluid Dynamics | 3 | 0 | 0 | 3 |
| 19MEE19 | Alternative Energy Conversion Techniques | 3 | 0 | 0 | 3 |
| 19MEE20 | Advanced Fluid Mechanics | 3 | 0 | 0 | 3 |
| 19MEE21 | Advanced Thermodynamics | 3 | 0 | 0 | 3 |
| 19MEE22 | Cryogenics | 3 | 0 | 0 | 3 |
| 19MEE23 | Combustion and Internal Combustion Engines | 3 | 0 | 0 | 3 |
| 19MEE24 | Energy Conservation and Waste Heat Recovery | 3 | 0 | 0 | 3 |
| 19MEE25 | Design of Heat Exchangers | 3 | 0 | 0 | 3 |
| 19MEE26 | Turbo machines | 3 | 0 | 0 | 3 |
| 19MEE27 | Power Plant Engineering | 3 | 0 | 0 | 3 |

STREAM : MANUFACTURING AND MANAGEMENT

| Course Code | Course Name | L | T | P | C |
|-------------|--|---|---|---|---|
| 19MEE28 | Industrial Psychology | 3 | 0 | 0 | 3 |
| 19MEE29 | Work System Design | 3 | 0 | 0 | 3 |
| 19MEE30 | Total Productivity Management | 3 | 0 | 0 | 3 |
| 19MEE31 | Plant Layout and Material Handling | 3 | 0 | 0 | 3 |
| 19MEE32 | Project Management | 3 | 0 | 0 | 3 |
| 19MEE33 | Rapid Prototyping | 3 | 0 | 0 | 3 |
| 19MEE34 | Advanced Welding Technology | 3 | 0 | 0 | 3 |
| 19MEE35 | Advanced Foundry Technology | 3 | 0 | 0 | 3 |
| 19MEE36 | Supply Chain Management | 3 | 0 | 0 | 3 |
| 19MEE37 | Quantity Production Methods | 3 | 0 | 0 | 3 |
| 19MEE38 | Production Planning and Control | 3 | 0 | 0 | 3 |
| 19MEE39 | Lean and Agile Manufacturing | 3 | 0 | 0 | 3 |
| 19MEE40 | Production and Operations Management | 3 | 0 | 0 | 3 |
| 19MEE41 | Smart Manufacturing | 3 | 0 | 0 | 3 |
| 19MEE42 | Manufacturing Planning and Cost Estimation | 3 | 0 | 0 | 3 |
| 19MEE43 | Manufacturing Systems Management | 3 | 0 | 0 | 3 |

ONE CREDIT COURSES (ELECTIVES) OFFERED

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--|----------|---|---|---|---|
| 19MEOC01 | MATLAB Programming* | OC | 1 | 0 | 0 | 1 |
| 19MEOC02 | Non-Destructive Evaluation | OC | 1 | 0 | 0 | 1 |
| 19MEOC03 | Advanced Industrial Automation Systems* | OC | 1 | 0 | 0 | 1 |
| 19MEOC04 | Recent Trends in Quality | OC | 1 | 0 | 0 | 1 |
| 19MEOC05 | Foundry Practice and Procedures | OC | 1 | 0 | 0 | 1 |
| 19MEOC06 | Basics of Automotive Electrical Systems* | OC | 1 | 0 | 0 | 1 |
| 19MEOC07 | Design Thinking - A Primer | OC | 1 | 0 | 0 | 1 |
| 19MEOC08 | Aircraft Maintenance* | OC | 1 | 0 | 0 | 1 |
| 19MEOC09 | Inspection and Quality Control in Manufacturing* | OC | 1 | 0 | 0 | 1 |
| 19MEOC10 | Constitution of India | OC | 1 | 0 | 0 | 1 |
| 19MEOC11 | Biology for Engineers | OC | 1 | 0 | 0 | 1 |
| 19MEOC12 | Human Values | OC | 1 | 0 | 0 | 1 |
| 19MEOC13 | E-Commerce Security* | OC | 1 | 0 | 0 | 1 |
| 19MEOC14 | Innovation and Entrepreneurship | OC | 1 | 0 | 0 | 1 |
| 19MEOC15 | 3-D Scanning Technology | OC | 1 | 0 | 0 | 1 |

* Employability enhancement courses

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

CHOICE BASED CREDIT SYSTEM

Curriculum from the academic year 2019-2020 onwards

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19ECM31 | Matrices, Linear Algebra and Numerical Methods | 3 | 1 | 0 | 4 | BSC |
| 19EC31 | Digital Electronics | 3 | 1 | 0 | 4 | PCC |
| 19EC32 | Analog Electronics | 3 | 0 | 0 | 3 | PCC |
| 19EC33 | Signals and Systems | 3 | 1 | 0 | 4 | PCC |
| 19EC34 | Computer Architecture and Organization | 3 | 0 | 0 | 3 | PCC |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HSC |
| 19ECL35 | Digital Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19ECL36 | Analog Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course - Elective I | | | | 1 | EEC |
| 19HOC31 | Communication Skills for Engineers - I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

*Pass is required not accounted for GPA

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19EC41 | Probability and Stochastic Process | 3 | 1 | 0 | 4 | PCC |
| 19EC42 | Principles of Communication | 3 | 1 | 0 | 4 | PCC |
| 19EC43 | Microcontroller Based Systems | 3 | 1 | 0 | 4 | PCC |
| 19EC44 | Linear Integrated Circuits | 3 | 0 | 0 | 3 | PCC |
| 19EC45 | Electromagnetic Fields and Waveguides | 3 | 0 | 0 | 3 | PCC |
| 19ECL46 | Microcontrollers Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19ECL47 | Linear Integrated Circuits Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course - Elective II | | | | 1 | EEC |
| 19HOC41 | Communication Skills for Engineers -II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

*Pass is required not accounted for GPA

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19EC51 | Control Systems | 3 | 0 | 0 | 3 | PCC |
| 19EC52 | Digital Signal Processing | 3 | 0 | 0 | 3 | PCC |
| 19EC53 | Embedded Systems and IoT | 3 | 0 | 0 | 3 | PCC |
| 19EC54 | Antennas and Wave Propagation | 3 | 0 | 0 | 3 | PCC |
| | Elective - I | 3 | 0 | 0 | 3 | PEC |
| | Elective - II | 3 | 0 | 0 | 3 | PEC/OEC |
| 19ECL55 | Signal Processing Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19ECL56 | Embedded Systems and IoT Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course - Elective III | 0 | 0 | 2 | 1 | EEC |
| 19EC66 | Mini Project | | | | - | EEC |
| 19INT51 | Internship - I* | | | | 1 | EEC |
| 19HOC51 | Employability and Personality Development Skills- I** | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

* Internship / Project to be completed during 4th semester vacation

** Pass is required not accounted for GPA

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19EC61 | VLSI Design | 4 | 0 | 0 | 4 | PCC |
| 19EC62 | Digital Communication | 3 | 0 | 0 | 3 | PCC |
| 19EC63 | Data Communication Networks | 3 | 0 | 0 | 3 | PCC |
| | Elective - III | 3 | 0 | 0 | 3 | PEC |
| | Elective - IV | 3 | 0 | 0 | 3 | PEC/OEC |
| 19ECL64 | VLSI Design Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19ECL65 | Analog and Digital Communication Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course - Elective IV | 1 | 0 | 0 | 1 | EEC |
| 19EC66 | Mini Project | 0 | 0 | 6 | 3 | EEC |
| 19INT61 | Internship - II* | | | | 1 | EEC |
| 19HOC61 | Employability And Personality Development Skills - II** | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 24 | |

* Internship to be completed during 5th semester vacation

** Pass is required not accounted for GPA

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19EC71 | Digital Image Processing | 4 | 0 | 0 | 4 | PCC |
| 19EC72 | Microwave Engineering and Optical Communication | 4 | 0 | 0 | 4 | PCC |
| 19EC73 | Wireless Communication and Networks | 3 | 0 | 0 | 3 | PCC |
| | Elective - V | 3 | 0 | 0 | 3 | PEC |
| | Elective - VI | 3 | 0 | 0 | 3 | PEC |
| 19ECL74 | Wireless Communication and Networking Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19ECL75 | High Frequency Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19EC76 | Project Phase I | 0 | 0 | 6 | 3 | EEC |
| | TOTAL CREDITS | | | | 22 | |

SEMESTER VIII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------|---|---|----|-----------|----------|
| | Elective -VII | 3 | 0 | 0 | 3 | PEC |
| | Elective -VIII | 3 | 0 | 0 | 3 | PEC |
| 19EC81 | Project Phase II | 0 | 0 | 10 | 5 | EEC |
| | TOTAL CREDITS | | | | 11 | |

TOTAL CREDITS : 165 (4 year B.E ECE)

TOTAL CREDITS : 129* (Lateral-B.E ECE)

*125 credits-from 3rd to 8th semester,

4 credits-Bridge Courses (Engineering Mathematics-2 Credits & Physical Sciences -2 Credits)

Category; BSC - Basic Sciences Course, HSC- Humanities and Social Sciences Course, ESC-Engineering Sciences Course, PCC -Professional Core Course, PEC- Professional Elective Course, OEC-Open Elective Course, EEC -Employability Enhancement Course

LIST OF PROFESSIONAL ELECTIVES**COMMUNICATION & SIGNAL PROCESSING**

| S. No. | Course Code | Course Name | L | T | P | C |
|--------|-------------|---|---|---|---|---|
| 1 | 19ECE01 | Multimedia Compression and Communication | 3 | 0 | 0 | 3 |
| 2 | 19ECE02 | Digital Switching and Transmission | 3 | 0 | 0 | 3 |
| 3 | 19ECE03 | Introduction to Machine Learning | 3 | 0 | 0 | 3 |
| 4 | 19ECE04 | Signal Processing Using Python | 3 | 0 | 0 | 3 |
| 5 | 19ECE05 | Advanced Digital Signal Processing | 3 | 0 | 0 | 3 |
| 6 | 19ECE06 | Speech Signal Processing | 3 | 0 | 0 | 3 |
| 7 | 19ECE07 | Wearable Systems | 3 | 0 | 0 | 3 |
| 8 | 19ECE08 | Adaptive Signal Processing | 3 | 0 | 0 | 3 |
| 9 | 19ECE09 | Information Theory and Coding | 3 | 0 | 0 | 3 |
| 10 | 19ECE10 | Communication System Design | 3 | 0 | 0 | 3 |
| 11 | 19ECE11 | Overview of Industry 4.0 | 3 | 0 | 0 | 3 |
| 12 | 19ECE12 | Cryptography and Network Security | 3 | 0 | 0 | 3 |
| 13 | 19ECE13 | Parallel and Distributed Processing | 3 | 0 | 0 | 3 |
| 14 | 19ECE14 | Optical Communication Networks | 3 | 0 | 0 | 3 |
| 15 | 19ECE15 | Soft Computing and Applications | 3 | 0 | 0 | 3 |
| 16 | 19ECE16 | Cognitive Radio Communication Systems | 3 | 0 | 0 | 3 |
| 17 | 19ECE17 | Next Generation Networks | 3 | 0 | 0 | 3 |
| 18 | 19ECE18 | Wireless Adhoc and Sensor Networks | 3 | 0 | 0 | 3 |
| 19 | 19ECE19 | Wireless Networks and Standards | 3 | 0 | 0 | 3 |
| 20 | 19ECE20 | 5G Networks | 3 | 0 | 0 | 3 |
| 21 | 19ECE21 | Network Routing and Infrastructure Management | 3 | 0 | 0 | 3 |
| 22 | 19ECE22 | Radar and Navigational Aids | 3 | 0 | 0 | 3 |
| 23 | 19ECE23 | Satellite Communication | 3 | 0 | 0 | 3 |

EMBEDDED SYSTEMS

| S. No. | Course Code | Course Name | L | T | P | C |
|--------|-------------|---|---|---|---|---|
| 1 | 19ECE24 | Data Structures and Algorithms | 3 | 0 | 0 | 3 |
| 2 | 19ECE25 | Operating Systems | 3 | 0 | 0 | 3 |
| 3 | 19ECE26 | Real Time Applications Using Python | 3 | 0 | 0 | 3 |
| 4 | 19ECE27 | Design Fundamentals of Electric and Hybrid Vehicles | 3 | 0 | 0 | 3 |
| 5 | 19ECE28 | Automotive Electronics | 3 | 0 | 0 | 3 |
| 6 | 19ECE29 | Advanced Processor Architectures | 3 | 0 | 0 | 3 |
| 7 | 19ECE30 | IoT Based System Design | 3 | 0 | 0 | 3 |
| 8 | 19ECE31 | Real Time Operating Systems | 3 | 0 | 0 | 3 |
| 9 | 19ECE32 | Robotics | 3 | 0 | 0 | 3 |
| 10 | 19ECE33 | Real Time Controllers | 3 | 0 | 0 | 3 |
| 11 | 19ECE34 | Real Time Microcomputer Systems | 3 | 0 | 0 | 3 |

ELECTRONICS & VLSI

| S. No. | Course Code | Course Name | L | T | P | C |
|---------------|--------------------|--|----------|----------|----------|----------|
| 1 | 19ECE35 | Biomedical Instrumentation | 3 | 0 | 0 | 3 |
| 2 | 19ECE36 | Power Electronics | 3 | 0 | 0 | 3 |
| 3 | 19ECE37 | Sensors and Transducers | 3 | 0 | 0 | 3 |
| 4 | 19ECE38 | Biomedical Transducers and Biosensors | 3 | 0 | 0 | 3 |
| 5 | 19ECE39 | Nano Electronics | 3 | 0 | 0 | 3 |
| 6 | 19ECE40 | Nano Sensors and Devices | 3 | 0 | 0 | 3 |
| 7 | 19ECE41 | Verilog HDL | 3 | 0 | 0 | 3 |
| 8 | 19ECE42 | HDL Based System Design | 3 | 0 | 0 | 3 |
| 9 | 19ECE43 | Introduction to Miniaturization Technologies | 3 | 0 | 0 | 3 |
| 10 | 19ECE44 | Mems | 3 | 0 | 0 | 3 |
| 11 | 19ECE45 | VLSI Process Technology | 3 | 0 | 0 | 3 |
| 12 | 19ECE46 | Low Power VLSI Design | 3 | 0 | 0 | 3 |
| 13 | 19ECE47 | IC Fabrication Technology | 3 | 0 | 0 | 3 |
| 14 | 19ECE48 | CMOS Analog IC Design | 3 | 0 | 0 | 3 |

MICROWAVE & RF

| S. No. | Course Code | Course Name | L | T | P | C |
|---------------|--------------------|--|----------|----------|----------|----------|
| 1 | 19ECE49 | Electromagnetic Radiation Hazards and Safety | 3 | 0 | 0 | 3 |
| 2 | 19ECE50 | Modern Antennas | 3 | 0 | 0 | 3 |
| 3 | 19ECE51 | Advanced Antenna Technology | 3 | 0 | 0 | 3 |
| 4 | 19ECE52 | Electromagnetic Interference and Compatibility | 3 | 0 | 0 | 3 |
| 5 | 19ECE53 | RF Microelectronics | 3 | 0 | 0 | 3 |

LIST OF ONE CREDIT COURSES

| S. No. | Course Code | Title of the Course | Group |
|--------|-------------|--|-------|
| 1 | 19ECOC01 | Basics of Python | I |
| 2 | 19ECOC02 | Quantitative Aptitude for Engineers/ Verbal Aptitude for Engineers | III |
| 3 | 19ECOC03 | Problem Solving with Algorithms and Data Structures | I |
| 4 | 19ECOC04 | Programming in C: A Practical Approach | I |
| 5 | 19ECOC05 | Programming in C++ | I |
| 6 | 19ECOC06 | Web Designing and Java | I |
| 7 | 19ECOC07 | Virtual Instrumentation | I |
| 8 | 19ECOC08 | Internet of Things : A Hands-on Approach | I |
| 9 | 19ECOC09 | Machine Learning Algorithms Using Python | I |
| 10 | 19ECOC10 | Programming in Scilab | I |
| 11 | 19ECOC11 | PCB Design and Fabrication | II |
| 12 | 19ECOC12 | Drone - Design & Development | II |
| 13 | 19ECOC13 | Lora Technology | II |
| 14 | 19ECOC14 | Application Design Using Raspberry PI & Python | II |
| 15 | 19ECOC15 | Internet of Things (IoT) Communication Protocols | II |
| 16 | 19ECOC16 | Communication Skills for Engineers | III |
| 17 | 19ECOC17 | Entrepreneurship and Management | III |
| 18 | 19ECOC18 | Professional Skills for Engineers | III |
| 19 | 19ECOC19 | Leadership and Management Skills for Engineers | III |
| 20 | 19ECOC20 | Innovation Management | III |
| 21 | 19ECOC21 | Project Management | III |
| 22 | 19ECOC22 | HMS foundation course on Mobile App Development | II |
| 23 | 19ECOC23 | Baseband Communication - Signal generation and analysis | II |
| 24 | 19ECOC24 | RF Measurement Laboratory | II |
| 25 | | NPTEL COURSES | IV |

| GROUP | GROUP NAME |
|-------|---------------------------------|
| I | PROGRAMMING COURSES |
| II | INDUSTRY COLLABORATED COURSES |
| III | SOFT SKILLS DEVELOPMENT COURSES |
| IV | NPTEL COURSES |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University)

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING (FULL TIME)

CHOICE BASED CREDIT SYSTEM

Curriculum from the Academic Year 2019 - 2020 and onwards

SUBJECTS OF STUDY

Semester III

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|---|-------------|---|---|---|---|-----------|----------|
| 1 | 19EEM31 | Transforms, Probability and Random Variables | 3 | 0 | 0 | 3 | BS |
| 2 | 19EE31 | Electric Circuit Analysis | 2 | 1 | 0 | 3 | PCC |
| 3 | 19EE32 | Electromagnetic Fields | 2 | 1 | 0 | 3 | PCC |
| 4 | 19EE33 | DC Machines and Transformers | 3 | 0 | 0 | 3 | PCC |
| 5 | 19EE34 | Analog Electronics | 3 | 0 | 0 | 3 | PCC |
| 6 | 19EE35 | Digital Electronics | 3 | 0 | 0 | 3 | PCC |
| 7 | 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HS |
| 8 | 19EEL36 | DC Machines and Transformers Laboratory | 0 | 0 | 2 | 1 | PCC |
| 9 | 19EEL37 | Analog and Digital Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 10 | | One Credit Course 1 | | | | 1 | OCC |
| 11 | 19HOC31 | Communication Skills For Engineers I* | 0 | 0 | 2 | 1 | EEC |
| (BS - 3, HS - 1, PCC - 17, OCC - 1, EEC - 1) TOTAL CREDITS | | | | | | 23 | |
| * Not to be counted for GPA. Pass is required | | | | | | | |

Semester IV

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|---|-------------|--|---|---|---|-----------|----------|
| 1 | 19EE41 | AC Rotating Machines | 3 | 0 | 0 | 3 | PCC |
| 2 | 19EE42 | Networks and Systems | 3 | 0 | 0 | 3 | PCC |
| 3 | 19EE43 | Measurements and Instrumentation | 3 | 0 | 0 | 3 | PCC |
| 4 | 19EE44 | Linear Integrated Circuits | 3 | 0 | 0 | 3 | PCC |
| 5 | 19EE45 | Transmission and Distribution | 3 | 0 | 0 | 3 | PCC |
| 6 | 19EE46 | OOPS and C++ for Electrical Engineers | 3 | 0 | 0 | 3 | PCC |
| 7 | 19EEL47 | AC Rotating Machines Laboratory | 0 | 0 | 2 | 1 | PCC |
| 8 | 19EEL48 | Linear Integrated Circuits Laboratory | 0 | 0 | 2 | 1 | PCC |
| 9 | | One Credit Course 2 | | | | 1 | OCC |
| 10 | 19HOC41 | Communication Skills For Engineers II* | 0 | 0 | 2 | 1 | EEC |
| (PCC - 20, OCC - 1, EEC - 1) TOTAL CREDITS | | | | | | 22 | |
| * Not to be counted for GPA. Pass is required | | | | | | | |

Semester V

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|---|-------------|---|----------------------|---|---|-----------|----------|
| 1 | 19EE51 | Control Systems | 3 | 0 | 0 | 3 | PCC |
| 2 | 19EE52 | Power System Analysis | 3 | 0 | 0 | 3 | PCC |
| 3 | 19EE53 | Data Structures and Algorithms | 3 | 0 | 0 | 3 | PCC |
| 4 | 19EE54 | Embedded System Design | 3 | 0 | 0 | 3 | PCC |
| 5 | | Elective Course 1 | 3 | 0 | 0 | 3 | EC |
| 6 | | Elective Course 2 | 3 | 0 | 0 | 3 | EC |
| 7 | 19EEL55 | Control systems Laboratory | 0 | 0 | 2 | 1 | PCC |
| 8 | 19EEL56 | Embedded System Design Laboratory | 0 | 0 | 2 | 1 | PCC |
| 9 | | One Credit Course 3 | | | | 1 | OCC |
| 10 | 19EEL66 | Mini Project | - | - | 2 | - | EEC |
| 11 | 19INT51 | Internship - I | - | - | - | 1 | EEC |
| 12 | 19HOC51 | Employability and Personality Development Skills - I * | 0 | 0 | 2 | 1 | EEC |
| (PCC - 14, EC - 6, OCC - 1, EEC - 2) | | | TOTAL CREDITS | | | 23 | |
| * Not to be counted for GPA. Pass is required | | | | | | | |

Semester VI

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|---|-------------|---|----------------------|---|---|-----------|----------|
| 1 | 19EE61 | Power Electronics | 3 | 0 | 0 | 3 | PCC |
| 2 | 19EE62 | Digital Protection of Power Systems | 3 | 0 | 0 | 3 | PCC |
| 3 | 19EE63 | Digital Signal Processing | 3 | 1 | 0 | 4 | PCC |
| 4 | | Elective Course 3 | 3 | 0 | 0 | 3 | EC |
| 5 | | Elective Course 4 | 3 | 0 | 0 | 3 | EC |
| 6 | 19EEL64 | Power Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 7 | 19EEL65 | Power Systems Laboratory | 0 | 0 | 2 | 1 | PCC |
| 8 | | One Credit Course 4 | | | | 1 | OCC |
| 9 | 19EEL66 | Mini Project | 0 | 0 | 6 | 3 | EEC |
| 10 | 19INT61 | Internship - II | - | - | - | 1 | EEC |
| 11 | 19HOC61 | Employability and Personality Development Skills - II* | 0 | 0 | 2 | 1 | EEC |
| (PCC - 12, EC - 6, OCC - 1, EEC - 5) | | | TOTAL CREDITS | | | 24 | |
| * Not to be counted for GPA. Pass is required | | | | | | | |

Semester VII

| S. No. | Course Code | Course Name | L | T | P | C | Category | |
|-------------------------------------|-------------|---------------------------------|----------------------|---|---|---|-----------|--|
| 1 | 19EE71 | Solid State Drives and Control | 3 | 0 | 0 | 3 | PCC | |
| 2 | 19EE72 | Generation of Electrical Energy | 3 | 1 | 0 | 4 | PCC | |
| 3 | 19EE73 | Smart Grid | 3 | 0 | 0 | 3 | PCC | |
| 4 | | Elective Course 5 | 3 | 0 | 0 | 3 | EC | |
| 5 | | Elective Course 6 | 3 | 0 | 0 | 3 | EC | |
| 6 | 19EEL74 | Electrical Drives Laboratory | 0 | 0 | 2 | 1 | PCC | |
| 7 | 19EEL75 | Professional Competency | 0 | 0 | 4 | 2 | PCC | |
| 8 | 19EE76 | Project Work Phase - I | 0 | 0 | 6 | 3 | EEC | |
| (PCC - 13, EC - 6, EEC - 3) | | | TOTAL CREDITS | | | | 22 | |

Semester VIII

| S. No. | Course Code | Course Name | L | T | P | C | Category | |
|---------------------------|-------------|-------------------------|----------------------|---|----|---|-----------|--|
| 1 | | Elective Course 7 | 3 | 0 | 0 | 3 | EC | |
| 2 | | Elective Course 8 | 3 | 0 | 0 | 3 | EC | |
| 3 | 19EE81 | Project Work Phase - II | 0 | 0 | 10 | 5 | EEC | |
| (EC - 6, EEC - 5) | | | TOTAL CREDITS | | | | 11 | |

TOTAL CREDITS : 164 *

* Including First Year Credits

Category : **BS** - Basic Sciences, **HS** - Humanities and Social Sciences, **ES** - Engineering Sciences, **PCC** - Professional Core Course, **EC** - Elective Course, **EEC** - Employability Enhancement Course, **OCC** - One Credit Course.

ELECTIVE COURSES**PROFESSIONAL ELECTIVE COURSE : STREAM****I. ELECTRICAL MACHINES AND CONTROL (EMC)**

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|--|---|---|---|---|----------|
| 1 | 19EEE01 | Design of Electrical Machines | 3 | 0 | 0 | 3 | EC |
| 2 | 19EEE02 | Special Electrical Machines | 3 | 0 | 0 | 3 | EC |
| 3 | 19EEE03 | Modeling and Analysis of Electrical Machines | 3 | 0 | 0 | 3 | EC |
| 4 | 19EEE04 | Digital Control Systems | 3 | 0 | 0 | 3 | EC |
| 5 | 19EEE05 | Systems Theory | 3 | 0 | 0 | 3 | EC |
| 6 | 19EEE06 | Embedded control of electric drives | 3 | 0 | 0 | 3 | EC |
| 7 | 19EEE07 | Robust Control | 3 | 0 | 0 | 3 | EC |

II. POWER AND ENERGY (PE)

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|---|---|---|---|---|----------|
| 1 | 19EEE08 | Power Quality | 3 | 0 | 0 | 3 | EC |
| 2 | 19EEE09 | Advanced Power Electronics | 3 | 0 | 0 | 3 | EC |
| 3 | 19EEE10 | Power and Energy Management | 3 | 0 | 0 | 3 | EC |
| 4 | 19EEE11 | Energy Storage Technology | 3 | 0 | 0 | 3 | EC |
| 5 | 19EEE12 | Utilization and Conservation of Electrical Energy | 3 | 0 | 0 | 3 | EC |
| 6 | 19EEE13 | Electrical Safety | 3 | 0 | 0 | 3 | EC |
| 7 | 19EEE14 | Energy Efficient Lighting Systems | 3 | 0 | 0 | 3 | EC |
| 8 | 19EEE15 | Power System Design | 3 | 0 | 0 | 3 | EC |
| 9 | 19EEE16 | High Voltage Transmission Systems | 3 | 0 | 0 | 3 | EC |
| 10 | 19EEE17 | Deregulated Power System | 3 | 0 | 0 | 3 | EC |
| 11 | 19EEE18 | Electric Vehicles | 3 | 0 | 0 | 3 | EC |
| 12 | 19EEE19 | Energy Audit in Thermal & Electrical Utilities | 3 | 0 | 0 | 3 | EC |
| 13 | 19EEE41 | Switched Mode Power Conversion | 3 | 0 | 0 | 3 | EC |
| 14 | 19EEE42 | Utilization of Solar Energy | 3 | 0 | 0 | 3 | EC |

III. ELECTRONIC DESIGN (ED)

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|--|---|---|---|---|----------|
| 1 | 19EEE20 | Real Time Embedded Systems | 3 | 0 | 0 | 3 | EC |
| 2 | 19EEE21 | VLSI Design | 3 | 0 | 0 | 3 | EC |
| 3 | 19EEE22 | FPGA based System Design | 3 | 0 | 0 | 3 | EC |
| 4 | 19EEE23 | Robotics and Control | 3 | 0 | 0 | 3 | EC |
| 5 | 19EEE24 | Digital Consumer technology | 3 | 0 | 0 | 3 | EC |
| 6 | 19EEE25 | Electronic Product Design | 3 | 0 | 0 | 3 | EC |
| 7 | 19EEE26 | Medical Electronics | 3 | 0 | 0 | 3 | EC |
| 8 | 19EEE27 | Analog and Digital Communication | 3 | 0 | 0 | 3 | EC |
| 9 | 19EEE28 | Multimedia system | 3 | 0 | 0 | 3 | EC |
| 10 | 19EEE29 | Automation, Renewable Energy & FPGA Laboratory | 0 | 0 | 6 | 3 | EC |
| 11 | 19EEE43 | Wearable Sensors | 3 | 0 | 0 | 3 | EC |

IV. COMPUTER AND COMMUNICATION (CC)

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|--------|-------------|---|---|---|---|---|----------|
| 1 | 19EEE30 | Computer Architecture and Parallel Processing | 3 | 0 | 0 | 3 | EC |
| 2 | 19EEE31 | Multi Core Architecture | 3 | 0 | 0 | 3 | EC |
| 3 | 19EEE32 | Data Communication Networks | 3 | 0 | 0 | 3 | EC |
| 4 | 19EEE33 | Fog Computing | 3 | 0 | 0 | 3 | EC |
| 5 | 19EEE34 | Internet of Things | 3 | 0 | 0 | 3 | EC |
| 6 | 19EEE35 | Data Analytics | 3 | 0 | 0 | 3 | EC |
| 7 | 19EEE36 | Virtual Instrumentation | 3 | 0 | 0 | 3 | EC |
| 8 | 19EEE37 | Cyber Physical Systems | 3 | 0 | 0 | 3 | EC |
| 9 | 19EEE38 | Intelligent Techniques for Electrical Engineers | 3 | 0 | 0 | 3 | EC |
| 10 | 19EEE39 | Industrial Automation | 3 | 0 | 0 | 3 | EC |
| 11 | 19EEE40 | Deep Learning | 3 | 0 | 0 | 3 | EC |

BS - BASIC SCIENCES

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|----------------------|-------------|--|---|---|---|-----------|----------|
| 1 | 19FYM12 | Calculus and Numerical Methods | 3 | 1 | 0 | 4 | BS |
| 2 | 19FYP13 | Engineering Physics | 3 | 0 | 0 | 3 | BS |
| 3 | 19FYC11 | Engineering Chemistry | 3 | 0 | 0 | 3 | BS |
| 4 | 19PL11 | Physics Laboratory-I | 0 | 0 | 1 | 0.5 | BS |
| 5 | 19CL11 | Chemistry Laboratory-I | 0 | 0 | 1 | 0.5 | BS |
| 6 | 19FYM22 | Vector Calculus, Linear Algebra and Partial Differential Equations | 3 | 1 | 0 | 4 | BS |
| 7 | 19PL21 | Physics Laboratory-II | 0 | 0 | 1 | 0.5 | BS |
| 8 | 19CL21 | Chemistry Laboratory-II | 0 | 0 | 1 | 0.5 | BS |
| 9 | 19MEL12 | Engineering Practices Laboratory | 0 | 0 | 2 | 1 | BS |
| 10 | 19EEM31 | Transforms, Probability and Random Variables | 3 | 0 | 0 | 3 | BS |
| TOTAL CREDITS | | | | | | 20 | |

HS - HUMANITIES AND SOCIAL SCIENCES

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|----------------------|-------------|---|---|---|---|----------|----------|
| 1 | 19FYE11 | Technical English | 1 | 0 | 2 | 2 | HS |
| 2 | 19FYE21 | Language Elective | 1 | 0 | 2 | 2 | HS |
| 3 | 19FYC21 | Environmental Science and Engineering | 1 | 0 | 0 | 1 | HS |
| 4 | 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HS |
| TOTAL CREDITS | | | | | | 6 | |

ES - ENGINEERING SCIENCES

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|----------------------|-------------|--|---|---|---|-----------|----------|
| 1 | 19CM11 | Basic Civil and Mechanical Engineering | 3 | 0 | 0 | 3 | ES |
| 2 | 19MEL11 | Engineering Graphics | 1 | 0 | 4 | 3 | ES |
| 3 | 19FYP23 | Electron Devices | 3 | 0 | 0 | 3 | ES |
| 4 | 19EE22 | Electric and Magnetic Circuits | 3 | 0 | 0 | 3 | ES |
| 5 | 19CSL21 | C Programming and Data Bases | 0 | 0 | 4 | 2 | ES |
| TOTAL CREDITS | | | | | | 14 | |

PCC - PROFESSIONAL CORE COURSE

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|----------------------|-------------|---|---|---|---|-----------|----------|
| 1 | 19EE31 | Electric Circuit Analysis | 2 | 1 | 0 | 3 | PCC |
| 2 | 19EE32 | Electromagnetic Fields | 2 | 1 | 0 | 3 | PCC |
| 3 | 19EE33 | DC Machines and Transformers | 3 | 0 | 0 | 3 | PCC |
| 4 | 19EE34 | Analog Electronics | 3 | 0 | 0 | 3 | PCC |
| 5 | 19EE35 | Digital Electronics | 3 | 0 | 0 | 3 | PCC |
| 6 | 19EEL36 | DC Machines and Transformers Laboratory | 0 | 0 | 2 | 1 | PCC |
| 7 | 19EEL37 | Analog and Digital Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 8 | 19EE41 | AC Rotating Machines | 3 | 0 | 0 | 3 | PCC |
| 9 | 19EE42 | Networks and Systems | 3 | 0 | 0 | 3 | PCC |
| 10 | 19EE43 | Measurements and Instrumentation | 3 | 0 | 0 | 3 | PCC |
| 11 | 19EE44 | Linear Integrated Circuits | 3 | 0 | 0 | 3 | PCC |
| 12 | 19EE45 | Transmission and Distribution | 3 | 0 | 0 | 3 | PCC |
| 13 | 19EE46 | OOPS and C++ for Electrical Engineers | 3 | 0 | 0 | 3 | PCC |
| 14 | 19EEL47 | AC Rotating Machines Laboratory | 0 | 0 | 2 | 1 | PCC |
| 15 | 19EEL48 | Linear Integrated Circuits Laboratory | 0 | 0 | 2 | 1 | PCC |
| 16 | 19EE51 | Control Systems | 3 | 0 | 0 | 3 | PCC |
| 17 | 19EE52 | Power System Analysis | 3 | 0 | 0 | 3 | PCC |
| 18 | 19EE53 | Data Structures and Algorithms | 3 | 0 | 0 | 3 | PCC |
| 19 | 19EE54 | Embedded System Design | 3 | 0 | 0 | 3 | PCC |
| 20 | 19EEL55 | Control systems Laboratory | 0 | 0 | 2 | 1 | PCC |
| 21 | 19EEL56 | Embedded System Design Laboratory | 0 | 0 | 2 | 1 | PCC |
| 22 | 19EE61 | Power Electronics | 3 | 0 | 0 | 3 | PCC |
| 23 | 19EE62 | Digital Protection of Power Systems | 3 | 0 | 0 | 3 | PCC |
| 24 | 19EE63 | Digital Signal Processing | 3 | 1 | 0 | 4 | PCC |
| 25 | 19EEL64 | Power Electronics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 26 | 19EEL65 | Power Systems Laboratory | 0 | 0 | 2 | 1 | PCC |
| 27 | 19EE71 | Solid State Drives and Control | 3 | 0 | 0 | 3 | PCC |
| 28 | 19EE72 | Generation of Electrical Energy | 3 | 1 | 0 | 4 | PCC |
| 29 | 19EE73 | Smart Grid | 3 | 0 | 0 | 3 | PCC |
| 30 | 19EEL74 | Electrical Drives Laboratory | 0 | 0 | 2 | 1 | PCC |
| 31 | 19EEL75 | Professional Competency | 0 | 0 | 4 | 2 | PCC |
| TOTAL CREDITS | | | | | | 76 | |

EEC - EMPLOYABILITY ENHANCEMENT COURSE

| S. No. | Course Code | Course Name | L | T | P | C | Category |
|----------------------|-------------|---|---|---|----|-----------|----------|
| 1 | 19FYEL11 | Employability Skills | 0 | 0 | 2 | 1 | EEC |
| 2 | 19FYEL21 | English for Employability | 0 | 0 | 2 | 1 | EEC |
| 3 | 19HOC31 | Communication Skills For Engineers I* | 0 | 0 | 2 | 1 | EEC |
| 4 | 19HOC41 | Communication Skills For Engineers II* | 0 | 0 | 2 | 1 | EEC |
| 5 | 19HOC51 | Employability and Personality Development Skills - I * | 0 | 0 | 2 | 1 | EEC |
| 6 | 19HOC61 | Employability and Personality Development Skills - II * | 0 | 0 | 2 | 1 | EEC |
| 7 | 19INT51 | Internship - I | - | - | - | 1 | EEC |
| 8 | 19EEL66 | Mini Project | 0 | 0 | 6 | 3 | EEC |
| 9 | 19INT61 | Internship - II | - | - | - | 1 | EEC |
| 10 | 19EE76 | Project Work Phase - I | 0 | 0 | 6 | 3 | EEC |
| 11 | 19EE81 | Project Work Phase - II | 0 | 0 | 10 | 5 | EEC |
| TOTAL CREDITS | | | | | | 19 | |

LIST OF ONE CREDIT COURSES ***1. DEPARTMENT BASED ONE CREDIT COURSES**

| S. No. | Course Code | Course Name | Credit | Category |
|--------|-------------|---|--------|----------|
| 1 | 19EEOC06 | Electrical Safety Standards and Practices | 1 | OCC |
| 2 | 19EEOC07 | Scilab Programming | 1 | OCC |

2. INDUSTRY BASED ONE CREDIT COURSES

| S. No. | Course Code | Course Name | Credit | Category |
|--------|-------------|--|--------|----------|
| 1 | 19EEOC08 | Machine Vision | 1 | OCC |
| 2 | 19EEOC09 | Cyber Security in Manufacturing and Smart Grid | 1 | OCC |
| 3 | 19EEOC10 | Robotics and Automation | 1 | OCC |
| 4 | 19EEOC12 | AWS Cloud Practitioner Essentials | 1 | OCC |
| 5 | 19EEOC13 | Introduction to IoT | 1 | OCC |
| 6 | 19EEOC14 | TCS ION Career Edge Young Professional | 1 | OCC |

* One credit courses could be opted from Department/Industry/NPTEL

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

B.E. COMPUTER SCIENCE AND ENGINEERING

CHOICE BASED CREDIT SYSTEM

Curriculum from the academic year 2019 - 2020 onwards

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|--|---------|---|---|-----------|----------|
| | | L | T | P | | |
| 19CIM31 | Linear Algebra, Complex Variables and Transform Techniques | 3 | 1 | 0 | 4 | BSC |
| 19CI31 | Data Structures and Algorithms - I | 3 | 1 | 0 | 4 | PCC |
| 19CI32 | Digital Design | 3 | 0 | 0 | 3 | ESC |
| 19CS31 | Discrete Mathematics | 2 | 0 | 0 | 2 | PCC |
| 19CI33 | Object Oriented Programming and Java | 3 | 0 | 0 | 3 | PCC |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HSC |
| 19CIL34 | Digital Design Laboratory | 0 | 0 | 3 | 1.5 | ESC |
| 19CIL35 | Object Oriented Programming Laboratory | 0 | 0 | 3 | 1.5 | PCC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC31 | Communication Skills for Engineers - I* | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester IV

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|---|---------|---|---|-----------|----------|
| | | L | T | P | | |
| 19CI41 | Data Structures and Algorithms- II | 3 | 0 | 0 | 3 | PCC |
| 19CI42 | Database Management Systems | 3 | 0 | 0 | 3 | PCC |
| 19CI43 | Computer Architecture | 3 | 0 | 0 | 3 | PCC |
| 19CI44 | Operating Systems | 3 | 0 | 0 | 3 | PCC |
| 19CI45 | Software Engineering | 2 | 1 | 0 | 3 | PCC |
| 19CS41 | Formal Languages and Automata Theory | 2 | 0 | 0 | 2 | PCC |
| 19CIL46 | Database Management Systems Laboratory | 0 | 0 | 3 | 1.5 | PCC |
| 19CIL47 | Data Structures and Algorithms Laboratory | 0 | 0 | 3 | 1.5 | PCC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC41 | Communication Skills for Engineers - II* | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

* Not to be counted for GPA. Pass is required.

Semester V

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|---|---------|---|---|-----------|----------|
| | | L | T | P | | |
| 19CI51 | Computer Networks | 3 | 0 | 0 | 3 | PCC |
| 19CS51 | Unix Internals | 3 | 0 | 0 | 3 | PCC |
| 19CI52 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | PCC |
| 19CS52 | Statistical Data Analysis | 2 | 1 | 0 | 3 | PCC |
| | Elective - I | 3 | 0 | 0 | 3 | PEC/OEC |
| | Elective - II | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CIL54 | Computer Networks Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CIL48 | Operating Systems Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC51 | Employability and Personality Development Skills - I* | 0 | 0 | 2 | 1 | EEC |
| 19CS65 | Mini Project | 0 | 0 | 3 | - | EEC |
| 19INT51 | Internship-I* | - | - | - | 1 | EEC |
| | Total Credits | | | | 23 | |

Semester VI

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|--|---------|---|---|-----------|----------|
| | | L | T | P | | |
| 19CI53 | Embedded Systems | 3 | 0 | 0 | 3 | PCC |
| 19CS61 | Internet of Things and Its Applications | 3 | 0 | 0 | 3 | PCC |
| 19CS62 | Machine Learning | 3 | 0 | 0 | 3 | PCC |
| | Elective - III | 3 | 0 | 0 | 3 | PEC/OEC |
| | Elective - IV | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CSL63 | Embedded Systems & IOT Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CSL64 | Machine Learning Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19HOC61 | Employability and Personality Development Skills-II* | 0 | 0 | 2 | 1 | EEC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19CS65 | Mini Project | 0 | 0 | 3 | 3 | EEC |
| 19INT61 | Internship-II* | - | - | - | 1 | EEC |
| | Total Credits | | | | 23 | |

*Internship to be completed during 4th semester and 5th semester vacation

* Not to be counted for GPA. Pass is required.

Semester VII

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|------------------------------------|---------|---|---|-----------|----------|
| | | L | T | P | | |
| 19CS71 | Principles of Compiler Design | 3 | 1 | 0 | 4 | PCC |
| 19CI61 | Artificial Intelligence | 3 | 0 | 0 | 3 | PCC |
| 19CI71 | Cryptography and Network Security | 3 | 1 | 0 | 4 | PCC |
| | Elective - V | 3 | 0 | 0 | 3 | PEC/OEC |
| | Elective - VI | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CSL72 | Compiler Design Laboratory | 0 | 0 | 3 | 1.5 | PCC |
| 19CSL73 | Artificial Intelligence Laboratory | 0 | 0 | 3 | 1.5 | PCC |
| 19CS74 | Project Phase-I | 0 | 0 | 6 | 3 | EEC |
| | Total Credits | | | | 23 | |

Semester VIII

| Course Code | Course Name | Periods | | | Credits | Category |
|-------------|----------------------|---------|---|----|-----------|----------|
| | | L | T | P | | |
| | Elective - VII | 3 | 0 | 0 | 3 | PEC/OEC |
| | Elective - VIII | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CS81 | Project Phase-II | 0 | 0 | 10 | 5 | EEC |
| | Total Credits | | | | 11 | |

Note :

- Open Electives (Maximum 2) can be opted from other departments as approved by CSE department.
- NPTEL 3 credit courses can be opted instead of electives with approval of department.

TOTAL CREDITS

CREDITS (First and Second semester) : 40

CREDITS (Third to Eight semester) : 124

TOTAL : 164 Credits

SCC-Subject Category Code:

HSC - Humanities and Social Sciences, BSC - Basic Science Courses, ESC - Engineering Science Courses, PCC- Professional Core Courses, PEC - Professional Elective Courses, OEC - Open Elective Courses, EEC - Project Work, Entrepreneurship, Seminar, Soft skills, Internship, Comprehensive Test, MCC - Mandatory Courses, OCC - One Credit Courses

PROFESSIONAL ELECTIVE COURSES (PEC)

| Course Code | Course Name | L | T | P | C |
|-------------|---|---|---|---|---|
| 19CIE01 | Ad-hoc Networks | 3 | 0 | 0 | 3 |
| 19CIE02 | Big Data Analytics | 3 | 0 | 0 | 3 |
| 19CIE03 | Bioinformatics | 3 | 0 | 0 | 3 |
| 19CIE04 | Block Chain Technology | 3 | 0 | 0 | 3 |
| 19CIE05 | Cloud and Virtualization | 3 | 0 | 0 | 3 |
| 19CIE06 | Digital Forensics | 3 | 0 | 0 | 3 |
| 19CIE07 | Entrepreneurship Skill Development | 3 | 0 | 0 | 3 |
| 19CIE08 | Graph Theory | 3 | 0 | 0 | 3 |
| 19CIE09 | Graphics and Multimedia Systems | 3 | 0 | 0 | 3 |
| 19CIE10 | Information Security | 3 | 0 | 0 | 3 |
| 19CIE11 | Information Storage Management | 3 | 0 | 0 | 3 |
| 19CIE12 | Information Theory and coding | 3 | 0 | 0 | 3 |
| 19CIE13 | Neural Networks and Deep Learning | 3 | 0 | 0 | 3 |
| 19CIE14 | Object Oriented Analysis and Design | 3 | 0 | 0 | 3 |
| 19CIE15 | Open Source Systems | 3 | 0 | 0 | 3 |
| 19CIE16 | Parallel Architecture and Programming | 3 | 0 | 0 | 3 |
| 19CIE17 | Resource Management Techniques | 3 | 0 | 0 | 3 |
| 19CIE18 | Service Oriented Architecture and Web Services | 3 | 0 | 0 | 3 |
| 19CIE19 | Software Metrics and Measurement | 3 | 0 | 0 | 3 |
| 19CIE20 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 |
| 19CIE21 | Wireless Sensor Networks | 3 | 0 | 0 | 3 |
| 19ECI01 | Professional Readiness for Innovation, Employability and Entrepreneurship | 0 | 0 | 6 | 3 |
| 19CSE01 | Data Science | 3 | 0 | 0 | 3 |
| 19CSE02 | Natural Language Processing | 3 | 0 | 0 | 3 |
| 19IT61 | Mobile Computing | 3 | 0 | 0 | 3 |
| 19IT62 | Internet Technology | 3 | 0 | 0 | 3 |
| 19IT71 | Distributed Systems | 3 | 0 | 0 | 3 |

HUMANITIES AND SOCIAL SCIENCE COURSES (HSC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|---|---|----------|
| 19FYE11 | Technical English | 2 | 0 | 1 | 2 | I |
| 19FYE21 | Language Elective | 2 | 0 | 1 | 2 | I |
| 19FYC21 | Environmental Science and Engineering | 3 | 0 | 0 | 1 | I |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | II |

BASIC SCIENCE COURSES (BSC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|--|---|---|---|-----|----------|
| 19FYM14 | Matrices and Calculus | 3 | 1 | 0 | 4 | I |
| 19FYP13 | Engineering Physics | 3 | 0 | 0 | 3 | I |
| 19FYC11 | Engineering Chemistry | 3 | 0 | 0 | 3 | I |
| 19PL11 | Physics Laboratory-I | 0 | 0 | 2 | 0.5 | I |
| 19CL11 | Chemistry Laboratory-I | 0 | 0 | 2 | 0.5 | I |
| 19MEL12 | Engineering Practices Laboratory | 0 | 0 | 2 | 1 | I |
| 19FYM24 | Fourier Series and Partial Differential Equation | 3 | 1 | 0 | 4 | II |
| 19PL21 | Physics Laboratory-II | 0 | 0 | 2 | 0.5 | II |
| 19CL21 | Chemistry Laboratory-II | 0 | 0 | 2 | 0.5 | II |
| 19CIM31 | Linear Algebra, Complex Variables and Transform Techniques | 3 | 1 | 0 | 4 | III |

ENGINEERING SCIENCE COURSES (ESC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|------------------------------------|---|---|---|-----|----------|
| 19CSL12 | Python Programming | 1 | 0 | 4 | 3 | I |
| 19FYP24 | Introduction to Electronic Devices | 3 | 0 | 0 | 3 | II |
| 19CS21 | C Programming | 3 | 1 | 0 | 4 | II |
| 19CSL11 | C Programming Laboratory | 0 | 0 | 4 | 2 | II |
| 19MEL11 | Engineering Graphics | 1 | 0 | 4 | 3 | II |
| 19CI32 | Digital Design | 3 | 0 | 0 | 3 | III |
| 19CIL34 | Digital Design Laboratory | 0 | 0 | 3 | 1.5 | III |

PROFESSIONAL CORE COURSES (PCC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|---|-----|----------|
| 19CI31 | Data Structures and Algorithms - I | 3 | 1 | 0 | 4 | III |
| 19CS31 | Discrete Mathematics | 2 | 0 | 0 | 2 | III |
| 19CI33 | Object Oriented Programming and Java | 3 | 0 | 0 | 3 | III |
| 19CIL35 | Object Oriented Programming Laboratory | 0 | 0 | 3 | 1.5 | III |
| 19CI41 | Data Structures and Algorithms- II | 3 | 0 | 0 | 3 | IV |
| 19CI42 | Database Management Systems | 3 | 0 | 0 | 3 | IV |
| 19CI43 | Computer Architecture | 3 | 0 | 0 | 3 | IV |
| 19CI44 | Operating Systems | 3 | 0 | 0 | 3 | IV |
| 19CI45 | Software Engineering | 2 | 1 | 0 | 3 | IV |
| 19CS41 | Formal Languages and Automata Theory | 2 | 0 | 0 | 2 | IV |
| 19CIL46 | Database Management Systems Laboratory | 0 | 0 | 3 | 1.5 | IV |
| 19CIL47 | Data Structures and Algorithms Laboratory | 0 | 0 | 3 | 1.5 | IV |
| 19CI51 | Computer Networks | 3 | 0 | 0 | 3 | V |

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|---|-----|----------|
| 19CS51 | Unix Internals | 3 | 0 | 0 | 3 | V |
| 19CI52 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | V |
| 19CS52 | Statistical Data Analysis | 2 | 1 | 0 | 3 | V |
| 19CIL54 | Computer Networks Laboratory | 0 | 0 | 2 | 1 | V |
| 19CIL48 | Operating Systems Laboratory | 0 | 0 | 2 | 1 | V |
| 19CI53 | Embedded Systems | 3 | 0 | 0 | 3 | VI |
| 19CS61 | Internet of Things and Its Applications | 3 | 0 | 0 | 3 | VI |
| 19CS62 | Machine Learning | 3 | 0 | 0 | 3 | VI |
| 19CSL63 | Embedded Systems & IOT Laboratory | 0 | 0 | 2 | 1 | VI |
| 19CSL64 | Machine Learning Laboratory | 0 | 0 | 2 | 1 | VI |
| 19CS71 | Principles of Compiler Design | 3 | 1 | 0 | 4 | VI |
| 19CI61 | Artificial Intelligence | 3 | 0 | 0 | 3 | VI |
| 19CI71 | Cryptography and Network Security | 3 | 1 | 0 | 4 | VI |
| 19CSL72 | Compiler Design Laboratory | 0 | 0 | 3 | 1.5 | VI |
| 19CSL73 | Artificial Intelligence Laboratory | 0 | 0 | 3 | 1.5 | VI |

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|----|---|----------|
| 19FYE11 | Employability Skills | 0 | 0 | 2 | 1 | I |
| 19FYEL21 | English for Employability | 0 | 0 | 2 | 1 | II |
| 19HOC31 | Communication Skills for Engineers - I | 0 | 0 | 2 | 1 | III |
| 19HOC41 | Communication Skills for Engineers - II | 0 | 0 | 2 | 1 | IV |
| 19HOC51 | Employability and Personality Development Skills-I | 0 | 0 | 2 | 1 | V |
| 19HOC61 | Employability and Personality Development Skills-II | 0 | 0 | 2 | 1 | VI |
| 19INT51 | Internship-I | - | - | - | 1 | V |
| 19CS65 | Mini Project | 0 | 0 | 6 | 3 | VI |
| 19INT61 | Internship-II | - | - | - | 1 | VI |
| 19CS74 | Project Phase-I | 0 | 0 | 6 | 3 | VII |
| 19CS81 | Project Phase-II | 0 | 0 | 10 | 5 | VIII |

ONE CREDIT COURSES (OCC)

1. Department Offered :

| Course Code | Course Name | L | T | P | C |
|-------------|--|---|---|---|---|
| 19CIIOC01 | C++ Programming | 0 | 0 | 2 | 1 |
| 19CIIOC02 | R Programming | 0 | 0 | 2 | 1 |
| 19CIIOC03 | Applications of Probability | 0 | 0 | 2 | 1 |
| 19CIIOC04 | User Interface Design | 0 | 0 | 2 | 1 |
| 19CIIOC05 | Open-Source Tools for Network Analysis | 0 | 0 | 2 | 1 |
| 19CIIOC06 | Comprehensive Exam Training | 0 | 0 | 2 | 1 |

2. Industry Offered :

| Course Code | Course Name | L | T | P | C |
|-------------|-----------------------------------|---|---|---|---|
| 19CSOC01 | Software Testing Tools - Selenium | 0 | 0 | 2 | 1 |
| 19CSOC02 | Software Testing Tools - JMeter | 0 | 0 | 2 | 1 |
| 19CSOC03 | Software Testing Tools - TOSCA | 0 | 0 | 2 | 1 |
| 19CSOC04 | Data Science Tools- Jupyter | 0 | 0 | 2 | 1 |
| 19CSOC05 | MATLAB/SCILAB | 0 | 0 | 2 | 1 |

3. NPTEL Offered (4 weeks courses not part of the curriculum)

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

B.Tech. INFORMATION TECHNOLOGY

CHOICE BASED CREDIT SYSTEM

Curriculum from the academic year 2019-2020 onwards

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19CIM31 | Linear Algebra, Complex Variables and Transform Techniques | 3 | 1 | 0 | 4 | BS |
| 19CI31 | Data Structures and Algorithms - I | 3 | 1 | 0 | 4 | PC |
| 19CI32 | Digital Design | 3 | 0 | 0 | 3 | ES |
| 19IT31 | Discrete Mathematics And Automata Theory | 3 | 0 | 0 | 3 | PC |
| 19CI33 | Object Oriented Programming and Java | 3 | 0 | 0 | 3 | PC |
| 19HSS01 | Science Of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HS |
| 19CIL34 | Digital Design Laboratory | 0 | 0 | 3 | 1.5 | ES |
| 19CIL35 | Object Oriented Programming Laboratory | 0 | 0 | 3 | 1.5 | PC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC31 | Communication Skills for Engineers - I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19CI41 | Data Structures and Algorithms II | 3 | 0 | 0 | 3 | PC |
| 19CI42 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 19CI43 | Computer Architecture | 3 | 0 | 0 | 3 | PC |
| 19CI44 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| 19CI45 | Software Engineering | 2 | 1 | 0 | 3 | PC |
| 19CIL46 | Database Management Systems Laboratory | 0 | 0 | 3 | 1.5 | PC |
| 19CIL47 | Data Structures and Algorithms Laboratory | 0 | 0 | 3 | 1.5 | PC |
| 19CIL48 | Operating Systems Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC41 | Communication Skills for Engineers -II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 21 | |

* Not to be counted for GPA. Pass is required.

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19CI51 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 19CI52 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | PC |
| 19CI53 | Embedded Systems | 3 | 0 | 0 | 3 | PC |
| 19IT51 | Economics for Engineers | 2 | 0 | 0 | 2 | HS |
| | Elective-I | 3 | 0 | 0 | 3 | PE/OE |
| | Elective-II | 3 | 0 | 0 | 3 | PE/OE |
| 19ITL52 | Embedded Systems Laboratory | 0 | 0 | 2 | 1 | PC |
| 19CIL54 | Computer Networks Laboratory | 0 | 0 | 2 | 1 | PC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC51 | Employability and Personality Development Skills - I* | 0 | 0 | 2 | 1 | EEC |
| 19IT65 | Mini Project | 0 | 0 | 3 | - | EEC |
| 19INT51 | Internship-I | 0 | 0 | 0 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19CI61 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| 19IT61 | Mobile Computing | 3 | 0 | 0 | 3 | PC |
| 19IT62 | Internet Technology | 3 | 0 | 0 | 3 | PC |
| | Elective-III | 3 | 0 | 0 | 3 | PE/OE |
| | Elective-IV | 3 | 0 | 0 | 3 | PE/OE |
| 19ITL63 | Data Analytics and Artificial Intelligence Laboratory | 0 | 0 | 3 | 1.5 | PC |
| 19ITL64 | Internet Technology & Software Engineering Laboratory | 0 | 0 | 3 | 1.5 | PC |
| | One Credit Course | 0 | 0 | 2 | 1 | OCC |
| 19HOC61 | Employability and Personality Development Skills - II* | 0 | 0 | 2 | 1 | EEC |
| 19IT65 | Mini Project | 0 | 0 | 3 | 3 | EEC |
| 19INT61 | Internship -II | 0 | 0 | 0 | 1 | EEC |
| | TOTAL CREDITS | | | | 24 | |

• Internship/Project to be completed during 4th and 5th semester vacation

* Not to be counted for GPA. Pass is required.

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| 19CI71 | Cryptography and Network Security | 3 | 1 | 0 | 4 | PC |
| 19IT71 | Distributed Systems | 3 | 0 | 0 | 3 | PC |
| 19IT72 | Internet of Things | 3 | 1 | 0 | 4 | PC |
| | Elective-V | 3 | 0 | 0 | 3 | PE/OE |
| | Elective-VI | 3 | 0 | 0 | 3 | PE/OE |
| 19ITL73 | Internet of Things Laboratory | 0 | 0 | 3 | 1.5 | PC |
| 19ITL74 | Mobile Application Development Laboratory | 0 | 0 | 3 | 1.5 | PC |
| 19IT75 | Project Phase-I | 0 | 0 | 6 | 3 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester VIII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------|---|---|----|-----------|----------|
| | Elective-VII | 3 | 0 | 0 | 3 | PE/OE |
| | Elective-VIII | 3 | 0 | 0 | 3 | PE/OE |
| 19IT81 | Project Phase-II | 0 | 0 | 10 | 5 | EEC |
| | TOTAL CREDITS | | | | 11 | |

Total Credits : 164 (4 years B.Tech (IT))

Total Credits : 126 (Lateral B.Tech (IT))

122* Credits for Laterals + 4 Credits - Bridge

Course (Engineering Mathematics - 2 Credits & Physical - Sciences - 2 Credits)

LIST OF PROFESSIONAL ELECTIVES (PE)

| Course Code | Course Name | L | T | P | C |
|-------------|--|---|---|---|---|
| 19ITE01 | Advanced Algorithms | 3 | 0 | 0 | 3 |
| 19CIE01 | Ad-hoc Networks | 3 | 0 | 0 | 3 |
| 19ITE02 | Advanced Computer Architecture | 3 | 0 | 0 | 3 |
| 19ITE03 | Advanced Operating Systems | 3 | 0 | 0 | 3 |
| 19CIE02 | Big Data Analytics | 3 | 0 | 0 | 3 |
| 19CIE03 | Bioinformatics | 3 | 0 | 0 | 3 |
| 19CIE04 | Block Chain Technology | 3 | 0 | 0 | 3 |
| 19CIE05 | Cloud and Virtualization | 3 | 0 | 0 | 3 |
| 19ITE04 | Customer Relationship Management | 3 | 0 | 0 | 3 |
| 19ITE05 | Cyber Security | 3 | 0 | 0 | 3 |
| 19ITE06 | Data Communications | 3 | 0 | 0 | 3 |
| 19CIE06 | Digital Forensics | 3 | 0 | 0 | 3 |
| 19ITE07 | Digital Image Processing | 3 | 0 | 0 | 3 |
| 19CIE07 | Entrepreneurship Skill Development | 3 | 0 | 0 | 3 |
| 19CIE08 | Graph Theory | 3 | 0 | 0 | 3 |
| 19CIE09 | Graphics and Multimedia Systems | 3 | 0 | 0 | 3 |
| 19ITE08 | Human Computer Interaction | 3 | 0 | 0 | 3 |
| 19ITE09 | Information Retrieval | 3 | 0 | 0 | 3 |
| 19CIE10 | Information Security | 3 | 0 | 0 | 3 |
| 19CIE11 | Information Storage Management | 3 | 0 | 0 | 3 |
| 19CIE12 | Information Theory and coding | 3 | 0 | 0 | 3 |
| 19CS62 | Machine Learning | 3 | 0 | 0 | 3 |
| 19ITE10 | Multi-Agent Intelligent System | 3 | 0 | 0 | 3 |
| 19CIE13 | Neural Networks and Deep Learning | 3 | 0 | 0 | 3 |
| 19CIE14 | Object Oriented Analysis and Design | 3 | 0 | 0 | 3 |
| 19CIE15 | Open Source Systems | 3 | 0 | 0 | 3 |
| 19CS71 | Principles of Compiler Design | 3 | 0 | 0 | 3 |
| 19CIE16 | Parallel Architecture and Programming | 3 | 0 | 0 | 3 |
| 19ITE11 | Real Time Systems | 3 | 0 | 0 | 3 |
| 19CIE17 | Resource Management Techniques | 3 | 0 | 0 | 3 |
| 19ITE12 | Semantic Web | 3 | 0 | 0 | 3 |
| 19CIE18 | Service Oriented Architecture and Web Services | 3 | 0 | 0 | 3 |
| 19ITE13 | Soft Computing | 3 | 0 | 0 | 3 |
| 19ITE14 | Software Agents | 3 | 0 | 0 | 3 |
| 19CIE19 | Software Metrics and Measurement | 3 | 0 | 0 | 3 |
| 19CIE20 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 |
| 19CIE21 | Wireless Sensor Networks | 3 | 0 | 0 | 3 |
| 19CS51 | UNIX internals | 3 | 0 | 0 | 3 |
| 19ITE15 | Full Stack Development | 3 | 0 | 0 | 3 |
| 19ITE16 | Virtual and Augmented Reality | 3 | 0 | 0 | 3 |

HUMANITIES AND SOCIAL SCIENCES (HS)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|---|---|----------|
| 19FYE11 | Technical English | 2 | 0 | 1 | 2 | I |
| 19FYE21 | Language Elective | 2 | 0 | 1 | 2 | II |
| 19FYC21 | Environmental Science and Engineering | 3 | 0 | 0 | 1 | II |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | III |
| 19IT51 | Economics for Engineers | 2 | 0 | 0 | 2 | V |

BASIC SCIENCES(BS)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|--|---|---|---|-----|----------|
| 19FYM14 | Matrices and Calculus | 3 | 1 | 0 | 4 | I |
| 19FYP13 | Engineering Physics | 3 | 0 | 0 | 3 | I |
| 19FYC11 | Engineering Chemistry | 3 | 0 | 0 | 3 | I |
| 19PL11 | Physics Laboratory-I | 0 | 0 | 2 | 0.5 | I |
| 19CL11 | Chemistry Laboratory-I | 0 | 0 | 2 | 0.5 | I |
| 19MEL12 | Engineering Practices Laboratory | 0 | 0 | 2 | 1 | I |
| 19FYM24 | Fourier Series and Partial Differential Equation | 3 | 1 | 0 | 4 | II |
| 19PL21 | Physics Laboratory-II | 0 | 0 | 2 | 0.5 | II |
| 19CL21 | Chemistry Laboratory-II | 0 | 0 | 2 | 0.5 | II |
| 19CIM31 | Linear Algebra, Complex Variables and Transform Techniques | 3 | 1 | 0 | 4 | III |

ENGINEERING SCIENCES (ES)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|------------------------------------|---|---|---|-----|----------|
| 19CSL12 | Python Programming | 1 | 0 | 4 | 3 | I |
| 19FYP24 | Introduction to Electronic Devices | 3 | 0 | 0 | 3 | II |
| 19CS21 | C Programming | 3 | 1 | 0 | 4 | II |
| 19CSL11 | C Programming Laboratory | 0 | 0 | 4 | 2 | II |
| 19MEL11 | Engineering Graphics | 1 | 0 | 4 | 3 | II |
| 19CI32 | Digital Design | 3 | 0 | 0 | 3 | III |
| 19CIL34 | Digital Design Laboratory | 0 | 0 | 3 | 1.5 | III |

PROFESSIONAL CORE (PC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|---|-----|----------|
| 19CI31 | Data Structures and algorithms-I | 3 | 1 | 0 | 4 | III |
| 19IT31 | Discrete Mathematics and Automata Theory | 3 | 0 | 0 | 3 | III |
| 19CI33 | Object Oriented Programming and Java | 3 | 0 | 0 | 3 | III |
| 19CIL35 | Object Oriented Programming Laboratory | 0 | 0 | 3 | 1.5 | III |
| 19CI41 | Data Structures and Algorithms II | 3 | 0 | 0 | 3 | IV |
| 19CI42 | Database Management Systems | 3 | 0 | 0 | 3 | IV |
| 19CI43 | Computer Architecture | 3 | 0 | 0 | 3 | IV |
| 19CI44 | Operating Systems | 3 | 0 | 0 | 3 | IV |
| 19CI45 | Software Engineering | 2 | 1 | 0 | 3 | IV |
| 19CIL46 | Database Management Systems Laboratory | 0 | 0 | 3 | 1.5 | IV |
| 19CIL47 | Data Structures and Algorithms Laboratory | 0 | 0 | 3 | 1.5 | IV |
| 19CIL48 | Operating Systems Laboratory | 0 | 0 | 2 | 1 | IV |
| 19CI51 | Computer Networks | 3 | 0 | 0 | 3 | V |
| 19CI52 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | V |
| 19CI53 | Embedded Systems | 3 | 0 | 0 | 3 | V |
| 19ITL52 | Embedded Systems Laboratory | 0 | 0 | 2 | 1 | V |
| 19CIL54 | Computer Networks Laboratory | 0 | 0 | 2 | 1 | V |
| 19CI61 | Artificial Intelligence | 3 | 0 | 0 | 3 | VI |
| 19IT61 | Mobile Computing | 3 | 0 | 0 | 3 | VI |
| 19IT62 | Internet Technology | 3 | 0 | 0 | 3 | VI |
| 19ITL63 | Data Analytics and Artificial Intelligence Laboratory | 0 | 0 | 3 | 1.5 | VI |
| 19ITL64 | Internet Technology and Software Engineering Laboratory | 0 | 0 | 3 | 1.5 | VI |
| 19CI71 | Cryptography and Network Security | 3 | 1 | 0 | 4 | VII |
| 19IT71 | Distributed Systems | 3 | 0 | 0 | 3 | VII |
| 19IT72 | Internet of Things | 3 | 1 | 0 | 4 | VII |
| 19ITL73 | Internet of Things Laboratory | 0 | 0 | 3 | 1.5 | VII |
| 19ITL74 | Mobile Application Development Laboratory | 0 | 0 | 3 | 1.5 | VII |

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---|---|---|----|---|----------|
| 19FYEL11 | Employability Skills | 0 | 0 | 2 | 1 | I |
| 19FYEL21 | English for Employability | 0 | 0 | 2 | 1 | II |
| 19HOC31 | Communication Skills for Engineers - I | 1 | 0 | 0 | 1 | III |
| 19HOC41 | Communication Skills for Engineers -II | 1 | 0 | 0 | 1 | IV |
| 19HOC51 | Employability and Personality Development Skills-I | 0 | 0 | 2 | 1 | V |
| 19IT65 | Mini Project | 0 | 0 | 3 | - | V |
| 19INT51 | Internship-I | 0 | 0 | 0 | 1 | V |
| 19IT65 | Mini Project | 0 | 0 | 3 | 3 | VI |
| 19HOC61 | Employability and Personality Development Skills-II | 0 | 0 | 2 | 1 | VI |
| 19INT61 | Internship-II | 0 | 0 | 0 | 1 | VI |
| 19IT75 | Project Phase-I | 0 | 0 | 6 | 3 | VII |
| 19IT81 | Project Phase-II | 0 | 0 | 10 | 5 | VIII |

ONE CREDIT COURSES (OCC)**1. DEPARTMENT BASED**

| Course Code | Course Name | L | T | P | C |
|-------------|--|---|---|---|---|
| 19CIOC01 | C++ Programming | 0 | 0 | 2 | 1 |
| 19CIOC02 | R Programming | 0 | 0 | 2 | 1 |
| 19CIOC03 | Applications of Probability | 0 | 0 | 2 | 1 |
| 19CIOC04 | User Interface Design | 0 | 0 | 2 | 1 |
| 19CIOC05 | Open-Source Tools for Network Analysis | 0 | 0 | 2 | 1 |
| 19CIOC06 | Comprehensive Exam Training | 0 | 0 | 2 | 1 |
| 19ITOC01 | Aptitude Training | 0 | 0 | 2 | 1 |

2. INDUSTRY BASED

| Course Code | Course Name | L | T | P | C |
|-------------|------------------------------|---|---|---|---|
| 19ITOC02 | Data Visualization Tools | 0 | 0 | 2 | 1 |
| 19ITOC03 | Data Science Tools | 0 | 0 | 2 | 1 |
| 19ITOC04 | Cloud Computing Applications | 0 | 0 | 2 | 1 |
| 19ITOC05 | Agile Software Development | 0 | 0 | 2 | 1 |
| 19ITOC06 | Software Testing Tool | 0 | 0 | 2 | 1 |

3. NPTEL Offered (4 weeks courses not part of the curriculum)**4. Institute Based**

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University)

B.Tech. CHEMICAL ENGINEERING

Curriculum from the Academic Year - 2019

SUBJECTS OF STUDY

Semester III

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| 19CEM31 | Differential Equations and Boundary Value Problems | 2 | 1 | 0 | 3 | BS |
| 19CH31 | Mechanics of Solids | 3 | 0 | 0 | 3 | ES |
| 19CH32 | Fluid Mechanics | 2 | 1 | 0 | 3 | PCC |
| 19CH33 | Chemical Engineering Thermodynamics | 2 | 1 | 0 | 3 | PCC |
| 19CH34 | Environmental Science | 3 | 0 | 0 | 3 | PCC |
| 19CH35 | Chemical Process Calculations | 2 | 1 | 0 | 3 | PCC |
| 19HSS01 | Science of Creativity and Professional Ethics | 1 | 0 | 0 | 1 | HS |
| 19CHL36 | Computer Laboratory (Programming for problem solving) | 0 | 0 | 2 | 1 | ES |
| 19CHL37 | Electrical and Electronics Engineering Laboratory | 0 | 0 | 2 | 1 | ES |
| | One Credit Course | 1 | 0 | 0 | 1 | |
| 19HOC31 | Communication Skills for Engineers - I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester IV

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|-----------|-----|
| 19CH41 | Biology for Chemical Engineers | 3 | 0 | 0 | 3 | ES |
| 19CH42 | Mechanical Operations | 2 | 1 | 0 | 3 | PCC |
| 19CH43 | Chemical Reaction Engineering - I | 2 | 1 | 0 | 3 | PCC |
| 19CH44 | Heat Transfer | 2 | 1 | 0 | 3 | PCC |
| 19CH45 | Mass Transfer - I | 2 | 1 | 0 | 3 | PCC |
| 19CH46 | Instrumental Methods of Analysis | 3 | 0 | 0 | 3 | PCC |
| 19CHL47 | Fluid Mechanics Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CHL48 | Technical Analysis Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course | 1 | 0 | 0 | 1 | |
| 19HOC41 | Communication Skills for Engineers - II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

* Not to be counted for GPA. Pass is required.

Semester V

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| 19CH51 | Numerical Methods in Chemical Engineering | 2 | 1 | 0 | 3 | PCC |
| 19CH52 | Chemical Reaction Engineering- II | 2 | 1 | 0 | 3 | PCC |
| 19CH53 | Mass Transfer-II | 2 | 1 | 0 | 3 | PCC |
| | Elective - I | 3 | 0 | 0 | 3 | PEC |
| | Elective - II | 3 | 0 | 0 | 3 | PEC |
| 19CHL56 | Entrepreneurship Development | 0 | 0 | 2 | 1 | HS |
| 19CHL57 | Mechanical Operations Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CHL58 | Heat Transfer Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course | 1 | 0 | 0 | 1 | - |
| 19CH68 | Mini Project* | 0 | 0 | 2 | No Credit | EEC |
| 19INT51 | Internship-I# | 0 | 0 | 2 | 1 | EEC |
| 19HOC51 | Employability and Personality Development Skills-I* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 21 | |

Internship - I to be completed during 4th semester vacation

* Mini Project will be evaluated in 6th Semester

Semester VI

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|-----------|-----|
| 19CH61 | Process Dynamics and Control | 2 | 1 | 0 | 3 | PCC |
| 19CH62 | Chemical Process Industries | 3 | 0 | 0 | 3 | PCC |
| 19CH63 | Chemical Process Safety | 3 | 0 | 0 | 3 | PCC |
| | Elective - III | 3 | 0 | 0 | 3 | PEC |
| | Elective - IV | 3 | 0 | 0 | 3 | PEC |
| 19CHL66 | Chemical Reaction Engineering Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CHL67 | Mass Transfer Laboratory | 0 | 0 | 2 | 1 | PCC |
| | One Credit Course | 1 | 0 | 0 | 1 | - |
| 19CH68 | Mini Project | 0 | 0 | 4 | 2 | EEC |
| 19INT61 | Internship-II# | 0 | 0 | 2 | 1 | EEC |
| 19HOC61 | Employability and Personality Development Skills-II* | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Internship-II to be completed during 5th semester vacation

* Not to be counted for GPA. Pass is required.

Semester VII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|---------|
| 19CH71 | Transport Phenomena | 2 | 1 | 0 | 3 | PCC |
| 19CH72 | Process Economics and Technology Management | 3 | 0 | 0 | 3 | PCC |
| 19CH73 | Process Modeling and Simulation | 2 | 1 | 0 | 3 | PCC |
| 19CH74 | Electrochemical Engineering | 3 | 0 | 0 | 3 | PEC |
| | Elective - V | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CHL76 | Process Equipment Design and Drawing | 0 | 0 | 4 | 2 | PCC |
| 19CHL77 | Process Control and Simulation Laboratory | 0 | 0 | 2 | 1 | PCC |
| 19CH78 | Project Work Phase - I | 0 | 0 | 6 | 3 | EEC |
| | TOTAL CREDITS | | | | 21 | |

Semester VIII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-------------------------|---|---|----|-----------|---------|
| | Elective -VI | 3 | 0 | 0 | 3 | PEC |
| | Elective-VII | 3 | 0 | 0 | 3 | PEC |
| | Elective-VIII | 3 | 0 | 0 | 3 | PEC/OEC |
| 19CH84 | Project Work Phase - II | 0 | 0 | 10 | 5 | EEC |
| | TOTAL CREDITS | | | | 14 | |

Category : BS - Basic Science, HS - Humanities and Social Science, ES - Engineering Science, PCC - Professional Core Course, PEC - Professional Elective Course, OEC - Open Elective Course, EEC - Employability Enhancement Courses.

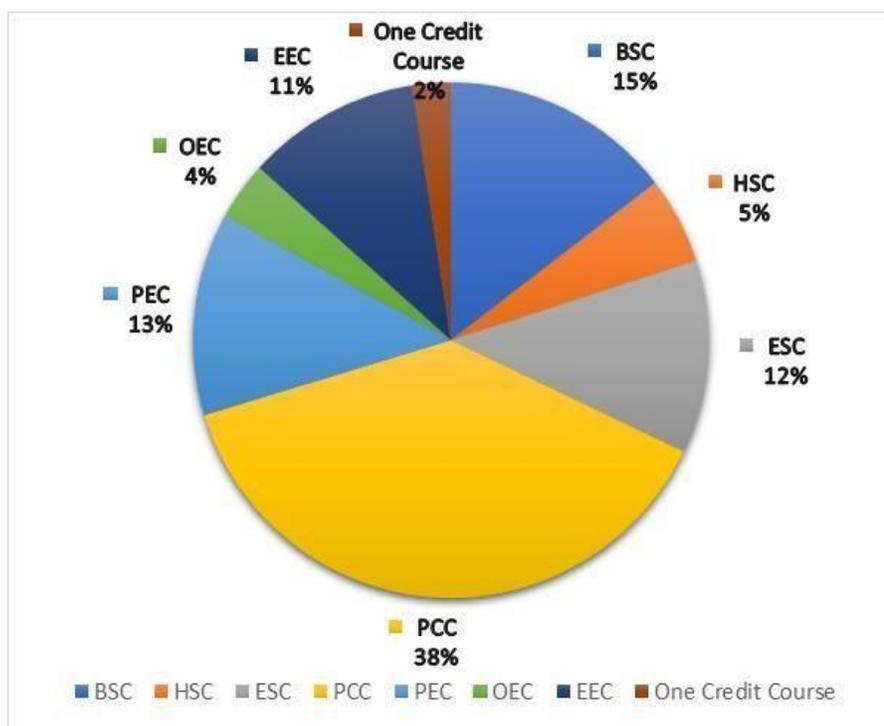
Total Credits

| Semester | Credits |
|--------------|------------|
| I | 21 |
| II | 21 |
| III | 23 |
| IV | 22 |
| V | 21 |
| VI | 22 |
| VII | 21 |
| VIII | 14 |
| TOTAL | 165 |

Category Wise Credit Distribution

| Curriculum Components | Sem-I | Sem-II | Sem-III | Sem-IV | Sem-V | Sem-VI | Sem-VII | Sem-VIII | Total |
|-----------------------|-------|--------|---------|--------|-------|--------|---------|----------|-------|
| BS | 12 | 9 | 3 | - | - | - | - | - | 24 |
| HS | 2 | 5 | 1 | - | 1 | - | - | - | 9 |
| ES | 6 | 6 | 5 | 3 | - | - | - | - | 20 |
| PCC | - | - | 12 | 17 | 11 | 11 | 12 | - | 63 |
| PEC | - | - | - | - | 6 | 6 | 3 | 6 | 21 |
| OEC | - | - | - | - | - | - | 3 | 3 | 06 |
| EEC | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 5 | 18 |
| One Credit Course | - | - | 1 | 1 | 1 | 1 | - | - | 4 |
| Total | 21 | 21 | 23 | 22 | 21 | 22 | 21 | 14 | 165 |

CATEGORY WISE CREDIT DISTRIBUTION



LIST OF PROFESSIONAL ELECTIVE COURSES

| S. No. | Course Code | Name of Subject | Credits |
|--------|-------------|---|---------|
| 1. | 19CHE01 | Water Conservation and Management | 3 |
| 2. | 19CHE02 | Sustainability Engineering | 3 |
| 3. | 19CHE03 | Nanoscience and Nanotechnology for Chemical Science | 3 |
| 4. | 19CHE04 | Polymer Science and Engineering | 3 |
| 5. | 19CHE05 | Renewable Energy | 3 |
| 6. | 19CHE06 | Advanced Separation Processes | 3 |
| 7. | 19CHE07 | Environmental Pollution and Control | 3 |
| 8. | 19CHE08 | Colloid and Interfacial Engineering | 3 |
| 9. | 19CHE09 | Energy Management in Chemical Industries | 3 |
| 10. | 19CHE10 | Biochemical Engineering | 3 |
| 11. | 19CHE11 | Process Engineering | 3 |
| 12. | 19CHE12 | Petroleum Refinery Engineering | 3 |
| 13. | 19CHE13 | Drugs and Pharmaceuticals Technology | 3 |
| 14. | 19CHE14 | Food Technology | 3 |
| 15. | 19CHE15 | Piping and Instrumentation | 3 |
| 16. | 19CHE16 | Process Automation | 3 |
| 17. | 19CHE17 | Process Instrumentation | 3 |
| 18. | 19CHE18 | Total Quality Management | 3 |
| 19. | 19CHE19 | Optimization Methods | 3 |
| 20. | 19CHE20 | Integrated Design of Chemical Processes | 3 |
| 21. | 19CHE21 | Computer Aided Process Equipment Design | 3 |
| 22. | 19CHE22 | Sugar Technology | 3 |
| 23. | 19CHE23 | Energy Technology | 3 |
| 24. | 19CHE24 | Petrochemicals Technology | 3 |
| 25. | 19CHE25 | Fertilizer Technology | 3 |
| 26. | 19CHE26 | Mineral Processing Technology | 3 |
| 27. | 19CHE27 | Fluidization Engineering | 3 |
| 28. | 19CHE28 | Pulp and Paper Technology | 3 |
| 29. | 19CHE29 | Surface Coating Technology | 3 |
| 30. | 19CHE30 | Heat Power Engineering | 3 |
| 31. | 19CHE31 | Carbon Capture | 3 |
| 32. | 19CHE32 | Material Science and Technology | 3 |
| 33. | 19CHE33 | Bioprocess Technology | 3 |
| 34. | 19CHE34 | Pilot Plant and Scale-up Methods | 3 |

LIST OF ONE CREDIT COURSES

| S. No. | Course Code | Title of the Course |
|--------|-------------|---|
| | | GROUP-I |
| | | Personality and Skill Development Courses |
| 1 | 19CHOC01 | Critical Thinking |
| 2 | 19CHOC02 | Creativity & Innovation |
| 3 | 19CHOC03 | Leadership |
| 4 | 19CHOC04 | Emotional Intelligence |
| 5 | 19CHOC05 | Health and Lifestyle |
| 6 | 19CHOC06 | Psychology for Engineers |
| | | GROUP-II |
| | | Social Responsibility & Environment Audit Courses |
| 7 | 19CHOC07 | Fundamentals of Nanoscience |
| 8 | 19CHOC08 | An Introduction to Environmental Ethics |
| 9 | 19CHOC09 | Corporate Social Responsibilities |
| 10 | 19CHOC10 | Composite Material Preparation and Characterization |
| 11 | 19CHOC11 | Environmental Impact Assessment and Audit |
| | | GROUP-III |
| | | Control and Automation Courses |
| 12 | 19CHOC12 | Factory Automation |
| 13 | 19CHOC13 | Controller Tuning |
| 14 | 19CHOC14 | Neural Networks and Fuzzy Systems |
| 15 | 19CHOC15 | Internet of Things |
| 16 | 19CHOC16 | Process Automation and Fault Diagnosis |
| 17 | 19CHOC17 | Process Control in Petrochemical Industries |
| 18 | 19CHOC18 | Power Plant Instrumentation |
| 19 | 19CHOC19 | Industrial Automation |
| 20 | 19CHOC20 | Biomedical Instrumentation |
| | | GROUP-IV |
| | | Energy and Nano Technology Courses |
| 21 | 19CHOC21 | Energy Materials, Devices and Systems |
| 22 | 19CHOC22 | Surface Engineering of Nanomaterials |
| 23 | 19CHOC23 | Nano sensors : Basic components, Characterization and Application |
| 24 | 19CHOC24 | Nanopolymers : Synthesis, Characterization and Applications |
| 25 | 19CHOC25 | An approach to Nanotribology and Nanomechanics |
| 26 | 19CHOC26 | Nanomaterials and Nanofibers |
| 27 | 19CHOC27 | Biomass Conversion to Biofuels and Bioenergy |
| 28 | 19CHOC28 | Biofuel: Fate and Future |
| 29 | 19CHOC29 | Dimensional Analysis and Theory of Models |
| 30 | 19CHOC30 | Pinch Technology |
| 31 | 19CHOC31 | Drug Delivery Systems |

| S. No. | Course Code | Title of the Course |
|--------|-------------|--|
| | | GROUP-V |
| | | Waste Treatment and Environment Science Courses |
| 32 | 19CHOC32 | Research Skills |
| 33 | 19CHOC33 | E-Waste Material Flow and Management Practices |
| 34 | 19CHOC34 | Chemicals in the Environment: Fate & Transport |
| 35 | 19CHOC35 | An Integrated approach for wastewater treatment |
| 36 | 19CHOC36 | Textile Effluents : Analysis and Treatment Methods |
| 37 | 19CHOC37 | Advanced Recycling and Recovery Technologies for E-Waste |
| | | GROUP-VI |
| | | Certification Courses |
| 38 | 19CHOC38 | NPTEL / MOOC Certification Courses (Chemical Engineering and Allied Courses) |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF CIVIL ENGINEERING

COURSES OF STUDY

For the students admitted during 2019 - 2020 and onwards

Under Choice Based Credit System

Name of the degree : M.E. (Full-Time)

Specialization : M.E. Structural Engineering

Semester I

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|-----------|----|
| 19MCE11 | Applied Mathematics | 4 | 0 | 0 | 4 | FC |
| 19MCE12 | Applied Elasticity and Plasticity | 3 | 0 | 0 | 3 | PC |
| 19MCE13 | Matrix Methods of Structural Analysis | 3 | 0 | 0 | 3 | PC |
| 19MCE14 | Advanced Reinforced Concrete Structures | 3 | 0 | 0 | 3 | PC |
| 19MCE15 | Advanced Steel Structures | 3 | 0 | 0 | 3 | PC |
| | Program Elective - I | 3 | 0 | 0 | 3 | PE |
| 19MCE16 | Computer Applications Laboratory | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 21 | |

Semester II

| Course Code | Course Name | L | T | P | C | CY |
|-------------|--|---|---|---|-----------|----|
| 19MCE21 | Structural Dynamics | 3 | 0 | 0 | 3 | PC |
| 19MCE22 | Finite Element Method | 3 | 0 | 0 | 3 | PC |
| 19MCE23 | Design of Foundation Structures | 3 | 0 | 0 | 3 | PC |
| | Program Elective - II | 3 | 0 | 0 | 3 | PE |
| | Program Elective - III | 3 | 0 | 0 | 3 | PE |
| | Program Elective - IV | 3 | 0 | 0 | 3 | PE |
| 19MCE24 | Advanced Structural Engineering Laboratory | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 20 | |

Semester III

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|-----------|-----|
| | Program Elective - V | 3 | 0 | 0 | 3 | PE |
| | Program Elective - VI | 3 | 0 | 0 | 3 | PE |
| | Open Elective / Professional Elective - VII | 3 | 0 | 0 | 3 | OE |
| | One Credit Course | 1 | 0 | 0 | 1 | EEC |
| 19MCE31 | Practical Training | 0 | 0 | 0 | 2 | EEC |
| | TOTAL CREDITS | | | | 12 | |

Semester IV

| Course Code | Course Name | L | T | P | C | CY |
|-------------|----------------------------|---|---|----|-----------|-----|
| 19MCE41 | Project Work and Viva Voce | 0 | 0 | 36 | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |

Total number of credits : 71

LIST OF OPEN ELECTIVES

| Course Code | Course Name | L | T | P | C | CY |
|-------------|-------------------------------|---|---|---|---|----|
| 19MCEOE01 | Disaster Management | 3 | 0 | 0 | 3 | OE |
| 19MCEOE02 | Energy Efficient Building | 3 | 0 | 0 | 3 | OE |
| 19MCMOE01 | Landscaping and Architecture | 3 | 0 | 0 | 3 | OE |
| 19MENOE01 | Climate Change and Adaptation | 3 | 0 | 0 | 3 | OE |

LIST OF ONE CREDIT COURSES

| Course Code | Course Name | L | T | P | C | CY |
|-------------|------------------------------------|---|---|---|---|-----|
| 19MCOC01 | Practical Geotechnical Engineering | 1 | 0 | 0 | 1 | EEC |
| 19MCOC02 | Green Buildings | 1 | 0 | 0 | 1 | EEC |
| 19MCOC03 | Geoinformatics Laboratory | 1 | 0 | 0 | 1 | EEC |
| 19MCOC04 | Sustainable Architecture | 1 | 0 | 0 | 1 | EEC |

LIST OF PROGRAM ELECTIVES

| Course Code | Course Name | L | T | P | C | CY |
|-------------|---|---|---|---|---|----|
| 19MCEE01 | Stability of Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE02 | Advanced Concrete Technology | 3 | 0 | 0 | 3 | PE |
| 19MCEE03 | Experimental Techniques and Instrumentation | 3 | 0 | 0 | 3 | PE |
| 19MCEE04 | Earthquake Resistant Design of Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE05 | Structural Optimization | 3 | 0 | 0 | 3 | PE |
| 19MCEE06 | Health Monitoring of Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE07 | Prestressed Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE08 | Corrosion of Steel in Concrete Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE09 | Theory of Plates | 3 | 0 | 0 | 3 | PE |
| 19MCEE10 | Design of Concrete Bridges | 3 | 0 | 0 | 3 | PE |
| 19MCEE11 | Design of Steel Concrete Composite Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE12 | Offshore Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE13 | Shell Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE14 | Design of Tall Buildings | 3 | 0 | 0 | 3 | PE |
| 19MCEE15 | Wind and Cyclone Effects on Structures | 3 | 0 | 0 | 3 | PE |
| 19MCEE16 | Soil Structure Interaction | 3 | 0 | 0 | 3 | PE |
| 19MCEE17 | Mechanics of Composite Materials | 3 | 0 | 0 | 3 | PE |
| 19MCEE18 | Prefabricated Structures | 3 | 0 | 0 | 3 | PE |

L : Lecture

T : Tutorial

P : Practical

C : Credits

CY : Category

PC : Program Core

PE : Program Elective

EEC : Employability Enhancement Course

OE : Open elective

OC : One credit course

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

M.E. (ENVIRONMENTAL ENGINEERING AND MANAGEMENT)

(Curriculum from the Academic Year 2019-2020 onwards)

SUBJECTS OF STUDY

Semester I

| Course Code | Course Name | Category | L | T | P | C |
|-------------|---|----------|-----------|----------|----------|-----------|
| 19MEN11 | Applied Statistics and Probability | FC | 3 | 0 | 0 | 3 |
| 19MEN12 | Environmental Chemistry | PC | 3 | 0 | 0 | 3 |
| 19MEN13 | Environmental Microbiology | PC | 3 | 0 | 0 | 3 |
| 19MEN14 | Separation Process In Environmental Engineering | PC | 3 | 0 | 0 | 3 |
| 19MEN15 | Industrial Wastewater Treatment and Management | PC | 3 | 0 | 0 | 3 |
| | Program Elective - I | PE | 3 | 0 | 0 | 3 |
| 19MEN16 | Process Engineering Laboratory - I | PC | 0 | 0 | 4 | 2 |
| | TOTAL | | 18 | 0 | 4 | 20 |

Semester II

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--|----------|-----------|----------|----------|-----------|
| 19MEN21 | Design of Water and wastewater treatment Plant | PC | 3 | 0 | 0 | 3 |
| 19MEN22 | Air Pollution and Control | PC | 3 | 0 | 0 | 3 |
| 19MEN23 | Solid and Hazardous Waste Management | PC | 3 | 0 | 0 | 3 |
| | Program Elective - 2 | PE | 3 | 0 | 0 | 3 |
| | Program Elective - 3 | PE | 3 | 0 | 0 | 3 |
| | Program Elective - 4 | PE | 3 | 0 | 0 | 3 |
| 19MEN24 | Process Engineering Laboratory - II | PC | 0 | 0 | 4 | 2 |
| | TOTAL | | 18 | 0 | 4 | 20 |

Semester III

| Course Code | Course Name | Category | L | T | P | C |
|-------------|---|----------|-----------|----------|----------|-----------|
| | Program Elective - 5 | PE | 3 | 0 | 0 | 3 |
| | Program Elective - 6 | PE | 3 | 0 | 0 | 3 |
| | Open Elective / Professional Elective - VII | OE | 3 | 0 | 0 | 3 |
| 19MEN31 | Practical Training | EEC | - | - | - | 2 |
| | One credit course | EEC | 0 | - | 2 | 1 |
| | TOTAL | | 10 | 0 | 2 | 12 |

Semester IV

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--------------|----------|----------|----------|-----------|-----------|
| 19MEN41 | Project | EEC | 0 | 0 | 36 | 18 |
| | TOTAL | | 0 | 0 | 36 | 18 |

Total Credits : 70

L - Lecture, T - Tutorial, P - Practical, C - Credit, FC - Foundation Course, PC - Professional Core, PE - Professional Elective, EEC - Employment Enhancement Course

LIST OF PROGRAM ELECTIVES

| Course Code | Course Name |
|-------------|--|
| 19MENE01 | Environmental Biotechnology |
| 19MENE02 | Adsorption Technology |
| 19MENE03 | Instrumental Method of Analysis |
| 19MENE04 | Noise Pollution and Management |
| 19MENE05 | Ecology and Ecosystem Management |
| 19MENE06 | Optimization of Environmental Systems |
| 19MENE07 | Air and Water Quality Modelling |
| 19MENE08 | Geo Environmental Engineering |
| 19MENE09 | Transport of Water and Wastewater |
| 19MENE10 | Environmental Impact Assessment |
| 19MENE11 | Design of Environmental Engineering Structures |
| 19MENE12 | Biodegradation and Bioremediation Techniques |
| 19MENE13 | Energy Management |
| 19MENE14 | Environmental Economics and Legislation |
| 19MENE15 | Sustainable Development and Cleaner Production |

LIST OF OPEN ELECTIVES

| Course Code | Course Name |
|-------------|-------------------------------|
| 19MENOE01 | Climate Change and Adaptation |
| 19MCEOE01 | Disaster Management |
| 19MCEOE02 | Energy Efficient Building |
| 19MCMOE01 | Landscaping and Architecture |

LIST OF ONE CREDIT COURSE

| Course Code | Course Name |
|-------------|------------------------------------|
| 19MCOC01 | Practical Geotechnical Engineering |
| 19MCOC02 | Green Buildings |
| 19MCOC03 | Geo Informatics Laboratory |
| 19MCOC04 | Sustainable Architecture |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

M.E. CONSTRUCTION MANAGEMENT

(Curriculum from the Academic Year 2019 - 2020 onwards)

Semester I

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--|----------|-----------|----------|----------|-----------|
| 19MCM11 | Statistical Methods and Research Methodology for Construction Management | FC | 3 | - | - | 3 |
| 19MCM12 | Construction Project Management | PC | 3 | - | - | 3 |
| 19MCM13 | Construction Project Formulation and Appraisal | PC | 3 | - | - | 3 |
| 19MCM14 | Construction Resource Planning and Management | PC | 3 | - | - | 3 |
| 19MCM15 | Construction Economics and Financial Management | PC | 3 | - | - | 3 |
| | Program Elective - 1 | PE | 3 | - | - | 3 |
| 19MCM16 | Data Analysis Laboratory for Construction Management | PC | - | - | 4 | 2 |
| | Total | | 18 | 0 | 2 | 20 |

Semester II

| Course Code | Course Name | Category | L | T | P | C |
|-------------|---|----------|-----------|----------|----------|-----------|
| 19MCM21 | Construction Planning, Scheduling and Control | PC | 3 | - | - | 3 |
| 19MCM22 | Contract Management and Dispute Resolution | PC | 3 | - | - | 3 |
| 19MCM23 | Quantitative Techniques in Construction Management | PC | 3 | - | - | 3 |
| | Program Elective - 2 | PE | 3 | - | - | 3 |
| | Program Elective - 3 | PE | 3 | - | - | 3 |
| | Program Elective - 4 | PE | 3 | - | - | 3 |
| 19MCM24 | Project Planning Laboratory for Construction Management | PC | - | - | 4 | 2 |
| | Total | | 18 | 0 | 2 | 20 |

Semester III

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--------------------------------------|----------|----------|----------|----------|-----------|
| | Program Elective - 5 | PE | 3 | - | - | 3 |
| | Program Elective - 6 | PE | 3 | - | - | 3 |
| | Open Elective / Program Elective - 7 | PE | 3 | - | - | 3 |
| 19MCM31 | Practical Training | EEC | - | - | - | 2 |
| | One Credit course | EEC | | | - | 1 |
| | Total | | 9 | - | - | 12 |

Semester IV

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--------------|----------|---|---|---|-----------|
| 19MCM41 | Project Work | EEC | - | - | - | 18 |
| | Total | | - | - | - | 18 |

Total Credits to be Earned for the Award of the Degree = 70

FC - Foundation Courses

PC - Professional Core

PE - Professional Electives

EEC - Employment Enhancement Courses

PROFESSIONAL ELECTIVE COURSES (PE)

| Course Code | Course Name | Category | L | T | P | C |
|-------------|---|----------|---|---|---|---|
| 19MCME01 | Advanced Construction Materials and Equipment | PE | 3 | - | - | 3 |
| 19MCME02 | Quality Management for Construction Projects | PE | 3 | - | - | 3 |
| 19MCME03 | Management Information systems | PE | 3 | - | - | 3 |
| 19MCME04 | Advanced Construction Techniques | PE | 3 | - | - | 3 |
| 19MCME05 | Functional Planning, Building Services and Maintenance Management | PE | 3 | - | - | 3 |
| 19MCME06 | Construction Risk Management | PE | 3 | - | - | 3 |
| 19MCME07 | Shoring, Scaffolding and Formwork | PE | 3 | - | - | 3 |
| 19MCME08 | Advanced Concrete Constructions | PE | 3 | - | - | 3 |
| 19MCME09 | Valuation of Real Properties | PE | 3 | - | - | 3 |
| 19MCME10 | Building Information Management | PE | 3 | - | - | 3 |
| 19MCME11 | Construction Safety and Health Management | PE | 3 | - | - | 3 |
| 19MCME12 | Lean Construction Concepts, Tools and Practices | PE | 3 | - | - | 3 |

ONE CREDIT COURSE

| Course Code | Course Name |
|-------------|------------------------------------|
| 19MCOC01 | Practical Geotechnical Engineering |
| 19MCOC02 | Green buildings |
| 19MCOC03 | Geo informatics laboratory |
| 19MCOC04 | Sustainable architecture |

PG OPEN ELECTIVES

| Course Code | Course Name | Category | L | T | P | C |
|-------------|-------------------------------|----------|---|---|---|---|
| 19MCEOE01 | Disaster Management | OE | 3 | - | - | 3 |
| 19MCEOE02 | Energy efficient buildings | OE | 3 | - | - | 3 |
| 19MCMOE01 | Landscaping and Architecture | OE | 3 | - | - | 3 |
| 19MENOE01 | Climate change and adaptation | OE | 3 | - | - | 3 |

* Add / Include Syllabus for one Credit Course & Open Electives

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Curriculum from the Academic Year 2019 - 2020 onwards

Under Choice Based Credit System

Specialization : Embedded And Real Time Systems

Semester I

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19MA11 | Linear Algebra and Stochastic Processes | 4 | 0 | 0 | 4 | FC |
| 19MER11 | Real Time Operating Systems | 3 | 1 | 0 | 4 | PC |
| 19MER12 | Embedded Processors | 3 | 0 | 0 | 3 | PC |
| 19MER13 | Wireless Communication Sensors | 3 | 0 | 0 | 3 | PC |
| 19MA14 | Electromagnetic Interference and Compatibility | 3 | 0 | 0 | 3 | PC |
| | ELECTIVE I | 3 | 0 | 0 | 3 | PE |
| 19MER14 | Embedded Processors Laboratory | 0 | 0 | 4 | 2 | PC |
| | Total | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| 19MA21 | Automation and Industrial Internet of Things | 3 | 0 | 0 | 3 | PC |
| 19MA22 | Robotics Technology and Intelligence | 3 | 0 | 0 | 3 | PC |
| 19MER21 | Embedded System Design using FPGA | 3 | 0 | 0 | 3 | PC |
| | ELECTIVE II | 3 | 0 | 0 | 3 | PE |
| | ELECTIVE III | 3 | 0 | 0 | 3 | PE |
| | ELECTIVE IV | 3 | 0 | 0 | 3 | PE |
| 19MER22 | FPGA based Embedded System Design Laboratory | 0 | 0 | 4 | 2 | PC |
| 19MAEE01 | Feasibility Report Preparation | 0 | 0 | 4 | 2 | EEC 1 |
| | One Credit Course | | | | 1 | OCC1 |
| | TOTAL | | | | 23 | |

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|------------------------|---|---|---|-----------|----------|
| | ELECTIVE V | 3 | 0 | 0 | 3 | PE |
| | ELECTIVE VI | 3 | 0 | 0 | 3 | PE |
| | OPEN ELECTIVE I | 3 | 0 | 0 | 3 | OE |
| | One Credit Course | | | | 1 | OCC 2 |
| | TOTAL | | | | 10 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|------------------------|---|---|----|-----------|----------|
| 19MER41 | PROJECT - DISSERTATION | 0 | 0 | 36 | 18 | EEC2 |
| | TOTAL | | | | 18 | |

TOTAL CREDITS: 73

(Note : FC - Foundation Course; PC - Professional Core; PE - Professional Elective; OC - Open Elective; EEC - Employability Enhancement Course; OCC - One Credit Course)

LIST OF PROFESSIONAL ELECTIVES

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| | EMBEDDED CONTROL OF INDUSTRIAL SYSTEMS | | | | | |
| 19MERE01 | Intelligent Controllers for Power Quality Enhancement | 3 | 0 | 0 | 3 | PE |
| 19MERE02 | Embedded Control of Industrial Drives | 3 | 0 | 0 | 3 | PE |
| 19MERE03 | Design of Green Transportation System | 3 | 0 | 0 | 3 | PE |
| 19MERE04 | Embedded Sensors Networks | 3 | 0 | 0 | 3 | PE |
| | ARCHITECTURE AND PROGRAMMING | | | | | |
| 19MERE05 | Modeling and Design of Embedded Systems | 3 | 0 | 0 | 3 | PE |
| 19MERE06 | Multicore Architecture | 3 | 0 | 0 | 3 | PE |
| 19MERE07 | System Simulation and Modeling | 3 | 0 | 0 | 3 | PE |
| | ELECTRONIC SYSTEM DESIGN | | | | | |
| 19MAE10 | Digital System Design and Testing | 3 | 0 | 0 | 3 | PE |
| 19MAE11 | Synthesis and Optimization of Digital Circuits | 3 | 0 | 0 | 3 | PE |
| 19MAE12 | Computer Vision | 3 | 0 | 0 | 3 | PE |
| 19MAE13 | High Performance Computer Architecture | 3 | 0 | 0 | 3 | PE |
| | EXPERT SYSTEMS | | | | | |
| 19MAE14 | Cryptography and Block Chain Technologies | 3 | 0 | 0 | 3 | PE |
| 19MAE15 | Augmented Reality | 3 | 0 | 0 | 3 | PE |
| 19MAE16 | Data science & Analytics | 3 | 0 | 0 | 3 | PE |
| 19MAE17 | Network Virtualization | 3 | 0 | 0 | 3 | PE |
| 19MAE18 | Soft Computing | 3 | 0 | 0 | 3 | PE |
| 19MAE19 | Edge Computing | 3 | 0 | 0 | 3 | PE |
| 19MAE20 | Computer Security | 3 | 0 | 0 | 3 | PE |

LIST OF OPEN ELECTIVES

| S.No. | Course Code | Course Name | L | T | P | C | Category |
|-------|-------------|---------------------------------------|---|---|---|---|----------|
| 1 | 19MEROE01 | Design of Green Transportation System | 3 | 0 | 0 | 3 | OE |
| 2 | 19MEROE02 | Embedded Sensor Networks | 3 | 0 | 0 | 3 | OE |
| 3 | 19MAOE04 | Digital System Design and Testing | 3 | 0 | 0 | 3 | OE |
| 4 | 19MAOE05 | Data Science & Analytics | 3 | 0 | 0 | 3 | OE |

LIST OF ONE CREDIT COURSES*

| S.No. | Course Code | Course Name | C | Category |
|-------|-------------|---|---|----------|
| 1 | 19MAOC01 | Essential of Research | 1 | OCC |
| 2 | 19MAOC02 | Data analysis in EXCEL | 1 | OCC |
| 3 | 19MAOC03 | Educational Technology | 1 | OCC |
| 4 | 19MAOC04 | Industrial IoT on Google cloud platform | 1 | OCC |
| 5 | 19MAOC05 | Behavioral Psychology | 1 | OCC |
| 6 | 19MAOC06 | Battery Management Systems | 1 | OCC |
| 7 | 19MAOC07 | Communication Network for IoT | 1 | OCC |
| 8 | 19MAOC08 | Digital Twin Technology | 1 | OCC |

* One Credit Courses opted from Industry / NPTEL / Institute / Department

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTING

M.SC. (SOFTWARE SYSTEMS)

Curriculum - For the Students admitted during 2020 - 2021 and onwards

Semester I

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|----|-----|
| | THEORY | | | | | |
| 20MSS11 | Technical English | 2 | 0 | 0 | 2 | HS |
| 20MSS12 | Applied Algebra and Calculus | 3 | 1 | 0 | 4 | BS |
| 20MSS13 | Structured Systems Analysis and Design | 3 | 0 | 0 | 3 | PC |
| 20MSS14 | Digital Electronics | 3 | 0 | 0 | 3 | PC |
| 20MSS15 | Problem Solving using C Programming | 3 | 1 | 0 | 4 | PC |
| | PRACTICALS | | | | | |
| 20MSS16 | Computing Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS17 | Programming Laboratory in C | 0 | 0 | 4 | 2 | PC |
| 20MSS18 | Digital Electronics Laboratory | 0 | 0 | 2 | 1 | PC |
| 20MSS19 | Employability Skills | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|----|-----|
| | THEORY | | | | | |
| | Language Elective | 2 | 0 | 0 | 2 | HS |
| 20MSS21 | Probability and Statistics - I | 3 | 1 | 0 | 4 | BS |
| 20MSS22 | Data Structures and Algorithms | 3 | 1 | 0 | 4 | PC |
| 20MSS23 | Fundamentals of Web Technology | 3 | 0 | 0 | 3 | PC |
| 20MSS24 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS25 | Web Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS26 | Data Structures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS27 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS28 | English for Employability | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester III

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-------------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS31 | Theoretical Computer Science | 3 | 0 | 0 | 3 | BS |
| 20MSS32 | Probability and Statistics - II | 3 | 1 | 0 | 4 | BS |
| 20MSS33 | Advanced Data Structures | 3 | 0 | 0 | 3 | PC |
| 20MSS34 | Computer Architecture | 3 | 0 | 0 | 3 | PC |
| 20MSS35 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS36 | Python Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS37 | Advanced Data Structures Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS38 | Operating Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 22 | |

Semester IV

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS41 | Resource Management Techniques | 3 | 0 | 0 | 3 | BS |
| 20MSS42 | Microprocessors and Microcontrollers | 3 | 0 | 0 | 3 | PC |
| 20MSS43 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| 20MSS44 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 20MSS45 | Java Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS46 | Microprocessors and Microcontrollers Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS47 | Database Management Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS48 | Java Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS49 | Personality Development | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester V

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS51 | Full Stack Application Development | 3 | 0 | 0 | 3 | PC |
| 20MSS52 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 20MSS53 | Design and Analysis of Algorithms | 3 | 1 | 0 | 4 | PC |
| 20MSS54 | Machine Learning | 3 | 0 | 0 | 3 | PC |
| | Elective I | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS55 | Full Stack Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS56 | Network Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory I | 0 | 0 | 4 | 2 | PC |
| 20MSS57 | Communications Skills | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester VI

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS61 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PC |
| 20MSS62 | Mobile Computing | 3 | 0 | 0 | 3 | PC |
| 20MSS63 | Cloud Computing | 3 | 0 | 0 | 3 | PC |
| 20MSS64 | Software Architecture | 3 | 0 | 0 | 3 | PC |
| | Elective II | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS65 | Software Engineering Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS66 | Cloud and Mobile Application Development Lab | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory II | 0 | 0 | 4 | 2 | PC |
| 20MSS67 | Hackathon | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester VII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|------------------------------|---|---|---|----|-----|
| 20MSS71 | Project Work and Viva Voce-I | 0 | 0 | 0 | 18 | EEC |

Semester VIII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--------------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS81 | Software Project Management | 3 | 0 | 0 | 3 | PC |
| 20MSS82 | Smart Sensors and Internet of Things | 3 | 0 | 0 | 3 | PC |
| 20MSS83 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| | Elective III | 3 | 0 | 0 | 3 | PC |
| | Elective IV | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS84 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PC |
| 20MSS85 | Artificial Intelligence Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory III | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 21 | |

Semester IX

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 20MSS91 | Agile Methods for Software Development | 3 | 0 | 0 | 3 | PC |
| 20MSS92 | Information Security | 3 | 0 | 0 | 3 | PC |
| 20MSS93 | Professional Ethics | 3 | 0 | 0 | 3 | EEC |
| | Elective V | 3 | 0 | 0 | 3 | PC |
| | Elective VI | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 20MSS94 | Information Security Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory IV | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory V | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 21 | |

Semester X

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-------------------------------|---|---|---|------------|-----|
| 20MSS10 | Project Work and Viva Voce-II | 0 | 0 | 0 | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |
| | GRAND TOTAL OF CREDITS | | | | 212 | |

ELECTIVE THEORY COURSES

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|---|-----|
| | DISTRIBUTED AND NETWORKED SYSTEMS STREAM | | | | | |
| 20MSSE01 | SOA and Web Services | 3 | 0 | 0 | 3 | PE |
| 20MSSE02 | Distributed Computing | 3 | 0 | 0 | 3 | PE |
| 20MSSE03 | Parallel Computing | 3 | 0 | 0 | 3 | PE |
| 20MSSE04 | Blockchain Technologies | 3 | 0 | 0 | 3 | PE |
| | DATAANALYTICS STREAM | | | | | |
| 20MSSE05 | Big Data Architecture | 3 | 0 | 0 | 3 | PE |
| 20MSSE06 | Information Retrieval | 3 | 0 | 0 | 3 | PE |
| 20MSSE07 | Advanced Database Management Systems | 3 | 0 | 0 | 3 | PE |
| 20MSSE08 | Predictive Analytics | 3 | 0 | 0 | 3 | PE |
| 20MSSE09 | Data Mining | 3 | 0 | 0 | 3 | PE |
| | INTELLIGENT SYSTEMS STREAM | | | | | |
| 20MSSE10 | Computer Vision | 3 | 0 | 0 | 3 | PE |
| 20MSSE11 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| 20MSSE12 | Meta-Heuristic Learning | 3 | 0 | 0 | 3 | PE |
| 20MSSE13 | Deep Learning | 3 | 0 | 0 | 3 | PE |
| 20MSSE14 | Decision Support Systems | 3 | 0 | 0 | 3 | PE |
| 20MSSE15 | Business Intelligence | 3 | 0 | 0 | 3 | PE |
| | GENERAL STREAM | | | | | |
| 20MSSE16 | Virtual and Augmented Reality | 3 | 0 | 0 | 3 | PE |
| 20MSSE17 | Compiler Design | 3 | 0 | 0 | 3 | PE |
| 20MSSE18 | Software User Interface Design | 3 | 0 | 0 | 3 | PE |
| 20MSSE19 | Enterprise Application Development | 3 | 0 | 0 | 3 | PE |
| 20MSSE20 | Design Thinking | 3 | 0 | 0 | 3 | PE |
| 20MSSE21 | Business Process Management | 3 | 0 | 0 | 3 | PE |
| 20MSSE22 | Software Language Engineering | 3 | 0 | 0 | 3 | PE |
| 20MSSE23 | Accounting and Financial Management | 3 | 0 | 0 | 3 | PE |
| 20MSSE24 | Human Computer Interaction and Interface | 3 | 0 | 0 | 3 | PE |
| 20MSSE25 | Quantum Computing | 3 | 0 | 0 | 3 | PE |
| 20MSSE26 | Real Time Systems | 3 | 0 | 0 | 3 | PE |

ELECTIVE LABS

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|---|-----|
| | DISTRIBUTED AND NETWORKED SYSTEMS STREAM | | | | | |
| 20MSSL01 | S0A and Web Services Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL02 | Parallel Computing Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL03 | Blockchain Technologies Laboratory | 0 | 0 | 4 | 2 | PE |
| | DATAANALYTICS STREAM | | | | | |
| 20MSSL04 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL05 | Big Data Architecture Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL06 | Predictive Analytics Laboratory | 0 | 0 | 4 | 2 | PE |
| | INTELLIGENT SYSTEMS STREAM | | | | | |
| 20MSSL07 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL08 | Meta-Heuristic Learning Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL09 | Deep Learning Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL10 | Business Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL11 | Computer Vision Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL12 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | PE |
| | GENERAL STREAM | | | | | |
| 20MSSL13 | Virtual and Augmented Reality Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL14 | Compiler Construction Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL15 | Enterprise Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL16 | Accounting and Financial Management Laboratory | 0 | 0 | 4 | 2 | PE |
| 20MSSL17 | Quantum Computing Laboratory | 0 | 0 | 4 | 2 | PE |

LANGUAGE ELECTIVES

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|----------------------|---|---|---|---|-----|
| 20MSSLE01 | Professional English | 2 | 0 | 0 | 2 | HS |
| 19FYG21 | Basic German | 2 | 0 | 0 | 2 | HS |
| 19FYF21 | Basic French | 2 | 0 | 0 | 2 | HS |

Coimbatore Institute of Technology, Coimbatore - 14.

(Government Aided Autonomous Institution Affiliated to Anna University)

Department of Computing

M. Sc. DATA SCIENCE

CHOICE BASED CREDIT SYSTEM

Five year Integrated Programme

Curriculum for the Academic Year 2021 – 2026

Semester 1

| Subject code | Name of the Subject | L | T | P | C | CAT |
|---------------------|---|----------|----------|----------|-----------|------------|
| | THEORY | | | | | |
| 21MDS11 | Technical English | 2 | 0 | 0 | 2 | HS |
| 21MDS12 | Algebra and Applications | 3 | 1 | 0 | 4 | BS |
| 21MDS13 | Statistical Methods | 3 | 0 | 0 | 3 | PC |
| 21MDS14 | Problem Solving and Programming in Python | 3 | 0 | 0 | 3 | PC |
| 21MDS15 | Principles of Digital Electronics | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 21MDS16 | Computing Laboratory I | 0 | 0 | 4 | 2 | PC |
| 21MDS17 | Programming Laboratory in Python | 0 | 0 | 4 | 2 | PC |
| 21MDS18 | Digital Electronics Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS19 | English for Employability | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester 2

| Subject code | Name of the Subject | L | T | P | C | CAT |
|---------------------|----------------------------|----------|----------|----------|----------|------------|
| | THEORY | | | | | |
| 21MDSLE01 | Language Elective | 2 | 0 | 0 | 2 | HS |

| | | | | | | |
|---------|---|---|---|---|-----------|-----|
| 21MDS21 | Calculus and Applications | 3 | 1 | 0 | 4 | BS |
| 21MDS22 | Probability Distributions and Applications | 3 | 0 | 0 | 3 | PC |
| 21MDS23 | Data Structures and Algorithms I | 3 | 0 | 0 | 3 | PC |
| 21MDS24 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 21MDS25 | Computing Laboratory II | 0 | 0 | 4 | 2 | PC |
| 21MDS26 | Data Structures and Algorithms Laboratory I | 0 | 0 | 4 | 2 | PC |
| 21MDS27 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS28 | Employability Skills | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester 3

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|--|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 21MDS31 | Business Statistics | 3 | 0 | 0 | 3 | PC |
| 21MDS32 | Discrete Structures and Automata Theory | 3 | 0 | 0 | 3 | PC |
| 21MDS33 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| 21MDS34 | Database Systems | 3 | 0 | 0 | 3 | PC |
| 21MDS35 | Data Structures and Algorithms II | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 21MDS36 | Database Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS37 | Data Structures and Algorithms Laboratory II | 0 | 0 | 4 | 2 | PC |
| 21MDS38 | Web Technology Framework Laboratory | 0 | 0 | 4 | 2 | PC |
| | Total Credits | | | | 21 | |

Semester 4

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|---------------|---|---|---|---|-----|
| | THEORY | | | | | |

| | | | | | | |
|---------|--|---|---|---|-----------|-----|
| 21MDS41 | Multivariate Data Analysis | 3 | 0 | 0 | 3 | PC |
| 21MDS42 | Graph Theory | 3 | 0 | 0 | 3 | PC |
| 21MDS43 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 | PC |
| 21MDS44 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 21MDS45 | Machine Learning | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 21MDS46 | Predictive Analytics Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS47 | Design and Analysis of Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS48 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS49 | Personality Development | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester 5

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|-------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 21MDS51 | Operations Research | 3 | 0 | 0 | 3 | PC |
| 21MDS52 | Deep Learning | 3 | 0 | 0 | 3 | PC |
| 21MDS53 | Big Data Computing | 3 | 0 | 0 | 3 | PC |
| 21MDS54 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| | Elective - I | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 21MDS55 | Deep Learning Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS56 | Big Data Computing Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Lab - I | 0 | 0 | 4 | 2 | PE |
| 21MDS57 | Communication Skills | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester 6

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|--|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 21MDS61 | Stochastic Models | 3 | 0 | 0 | 3 | PC |
| 21MDS62 | Cloud Computing | 3 | 0 | 0 | 3 | PC |
| 21MDS63 | Data Mining | 3 | 0 | 0 | 3 | PC |
| 21MDS64 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| | Elective- II | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 21MDS65 | Cloud Computing Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS66 | Data Mining and Visualization Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Lab - II | 0 | 0 | 4 | 2 | PE |
| 21MDS67 | Hackathon | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester 7

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|------------------------------|---|---|---|-----------|-----|
| 21MDS71 | Project Work and Viva Voce-I | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |

Semester 8

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|-------------------------------------|---|---|---|---|-----|
| | THEORY | | | | | |
| 21MDS81 | Data Privacy and Security Analytics | 3 | 0 | 0 | 3 | PC |
| 21MDS82 | Quantum Machine Learning | 3 | 0 | 0 | 3 | PC |
| 21MDS83 | Ethics in Data Science | 3 | 0 | 0 | 3 | PC |

| | | | | | | |
|---------|--|---|---|---|-----------|----|
| | Elective - III | 3 | 0 | 0 | 3 | PE |
| | Elective - IV | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 21MDS84 | Data Privacy and Security Analytics Laboratory | 0 | 0 | 4 | 2 | PC |
| 21MDS85 | Quantum Machine Learning Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Lab - III | 0 | 0 | 4 | 2 | PE |
| | Total Credits | | | | 21 | |

Semester 9

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|---------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 21MDS91 | Econometric Analysis | 3 | 1 | 0 | 4 | PC |
| 21MDS92 | Web Analytics | 3 | 0 | 0 | 3 | PC |
| 21MDS93 | Healthcare Analytics | 3 | 1 | 0 | 4 | PC |
| | Elective - V | 3 | 0 | 0 | 3 | PE |
| | Elective - VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 21MDS94 | Econometric Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDS95 | Web Analytics Laboratory | 0 | 0 | 4 | 2 | PE |
| | Elective Lab - IV | 0 | 0 | 4 | 2 | PE |
| | Total Credits | | | | 23 | |

Semester 10

| Subject code | Subject Name | L | T | P | C | CAT |
|-------------------------------|--------------------------------|---|---|---|------------|-----|
| 21MDS101 | Project Work and Viva Voce- II | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |
| Grand Total of Credits | | | | | 211 | |

Language Elective

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|----------------------|---|---|---|---|-----|
| 21MDSLE01 | Professional English | 2 | 0 | 0 | 2 | HS |
| 19FYG21 | Basic German | 2 | 0 | 0 | 2 | HS |
| 19FYF21 | Basic French | 2 | 0 | 0 | 2 | HS |

Professional Electives

| Subject code | Subject Name | L | T | P | C | CAT |
|--|-------------------------------------|---|---|---|---|-----|
| Data Analytics and Intelligent Systems Stream | | | | | | |
| 21MDSE1 | Business Intelligence | 3 | 0 | 0 | 3 | PE |
| 21MDSE2 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| 21MDSE3 | Computational Intelligence | 3 | 0 | 0 | 3 | PE |
| 21MDSE4 | Geographical Information Analysis | 3 | 0 | 0 | 3 | PE |
| 21MDSE5 | Robotic Process Automation | 3 | 0 | 0 | 3 | PE |
| 21MDSE6 | Machine Learning in Industry 4.0 | 3 | 0 | 0 | 3 | PE |
| 21MDSE7 | Cyber Security Analytics | 3 | 0 | 0 | 3 | PE |
| 21MDSE8 | Knowledge Engineering | 3 | 0 | 0 | 3 | PE |
| 21MDSE9 | Recommender System | 3 | 0 | 0 | 3 | PE |
| 21MDSE10 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |
| 21MDSE11 | Human Resource Analytics | 3 | 0 | 0 | 3 | PE |
| 21MDSE12 | Marketing Analytics | 3 | 0 | 0 | 3 | PE |
| 21MDSE13 | Data Analytics Software Development | 3 | 0 | 0 | 3 | PE |
| 21MDSE14 | Financial Analytics | 3 | 0 | 0 | 3 | PE |
| Technology Stream | | | | | | |
| 21MDSE15 | GPU Computing | 3 | 0 | 0 | 3 | PE |
| 21MDSE16 | Mobile Application Development | 3 | 0 | 0 | 3 | PE |

| | | | | | | |
|----------|---|---|---|---|---|----|
| 21MDSE17 | Blockchain Technology | 3 | 0 | 0 | 3 | PE |
| 21MDSE18 | Internet of Things | 3 | 0 | 0 | 3 | PE |
| 21MDSE19 | Fog and Edge Computing | 3 | 0 | 0 | 3 | PE |
| 21MDSE20 | Augmented and Virtual Reality | 3 | 0 | 0 | 3 | PE |
| 21MDSE21 | Design Thinking | 3 | 0 | 0 | 3 | PE |
| 21MDSE22 | Enterprise Computing | 3 | 0 | 0 | 3 | PE |
| 21MDSE23 | Business Process Management | 3 | 0 | 0 | 3 | PE |
| 21MDSE24 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |

Professional Electives Labs

| Subject code | Subject Name | L | T | P | C | CAT |
|--------------|--|---|---|---|---|-----|
| 21MDSEL1 | Business Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL2 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL3 | Computational Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL4 | Geographical Information Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL5 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL6 | Robotic Process Automation Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL7 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL8 | Blockchain Technology Laboratory | 0 | 0 | 4 | 2 | PE |
| 21MDSEL9 | Enterprise Computing Laboratory | 0 | 0 | 4 | 2 | PE |

CAT - Category, BS - Basic Sciences, HS - Humanities and Social Sciences,

ES - Engineering Sciences, PC - Professional Core, PE - Professional Elective,

EEC - Employability Enhancement Course, MC - Mandatory Course

Coimbatore Institute of Technology, Coimbatore - 14

Department of Computing

M. Sc. DECISION AND COMPUTING SCIENCES

(Five year Integrated Programme)

Curriculum from the Academic Year 2022 – 2023 onwards

| Semester I | | | | | | |
|--------------------|---|----------|----------|----------|-----------|------------|
| Course Code | Course Name | L | T | P | C | CAT |
| Theory | | | | | | |
| 22MDC11 | Technical English | 2 | 0 | 1 | 2 | HS |
| 22MDC12 | Applied Algebra and Calculus | 3 | 1 | 0 | 4 | BS |
| 22MDC13 | Statistical Methods | 3 | 0 | 0 | 3 | BS |
| 22MDC14 | Principles of Management | 3 | 0 | 0 | 3 | PC |
| 22MDC15 | Problem Solving and Programming in C | 3 | 0 | 0 | 3 | PC |
| Practicals | | | | | | |
| 22MDC16 | Mathematical and Statistical Computing Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC17 | C Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC18 | Foundations of Computer Science Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC19 | Employability Skills | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |
| Semester II | | | | | | |
| Course Code | Course Name | L | T | P | C | CAT |
| Theory | | | | | | |
| | Language Elective | 2 | 0 | 1 | 2 | HS |
| 22MDC21 | Probability Distributions and Applications | 3 | 0 | 0 | 3 | BS |
| 22MDC22 | Organisational Behavior | 4 | 0 | 0 | 4 | PC |
| 22MDC23 | Data Structures and Algorithms | 3 | 0 | 0 | 3 | PC |
| 22MDC24 | Computer Organization and Operating Systems | 3 | 0 | 0 | 3 | PC |
| Practicals | | | | | | |
| 22MDC25 | Applied Probability Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC26 | Data Structures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC27 | Python Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC28 | English for Employability | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Curriculum and Syllabi

Semesters III - X and Electives

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 22MDC31 | Applied Statistics for Business Decisions | 3 | 1 | 0 | 4 | BS |
| 22MDC32 | Financial Analysis and Reporting | 3 | 1 | 0 | 4 | PC |
| 22MDC33 | Digital Marketing | 3 | 0 | 0 | 3 | PC |
| 22MDC34 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 22MDC35 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 22MDC36 | Digital Marketing Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC37 | Database Management Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC38 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| | Total Credits | | | | 23 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| | THEORY | | | | | |
| 22MDC41 | Predictive Analytics | 3 | 0 | 0 | 3 | BS |
| 22MDC42 | Operations Research for Business | 3 | 1 | 0 | 4 | PC |
| 22MDC43 | Financial Engineering | 3 | 0 | 0 | 3 | PC |
| 22MDC44 | Advanced Data Structures and Algorithms | 3 | 0 | 0 | 3 | PC |

| | | | | | | |
|---------|--|---|---|---|-----------|-----|
| 22MDC45 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 22MDC46 | Predictive Analytics Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC47 | Financial Engineering Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC48 | Advanced Data Structures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC49 | Personality Development | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 23 | |

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|----------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 22MDC51 | Human Resource Management and Analytics | 3 | 1 | 0 | 4 | PC |
| 22MDC52 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| 22MDC53 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 22MDC54 | Machine Learning | 3 | 0 | 0 | 3 | PC |
| | Elective - I | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 22MDC55 | Full Stack Application Development lab | 0 | 0 | 4 | 2 | PC |
| 22MDC56 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - I | 0 | 0 | 4 | 2 | PE |
| 22MDC57 | Managerial Communication Skills | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 23 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------------------|---|---|---|---|----------|
| | THEORY | | | | | |
| 22MDC61 | Economic Foundations of Business | 3 | 0 | 0 | 3 | PC |
| 22MDC62 | Systems for Decision Support | 3 | 0 | 0 | 3 | PC |
| 22MDC63 | Cloud Computing | 3 | 0 | 0 | 3 | PC |
| 22MDC64 | Deep Learning | 3 | 0 | 0 | 3 | PC |

Semester V

| | | | | | | |
|---------|---|---|---|---|-----------|-----|
| | Elective - II | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 22MDC65 | Cloud and Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 22MDC66 | Deep Learning Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - II | 0 | 0 | 4 | 2 | PE |
| 22MDC67 | Hackathon | 0 | 0 | 2 | 1 | EEC |
| | Total Credits | | | | 22 | |

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|--------------------|------------------------------|----------|----------|----------|-----------|-----------------|
| 22MDC71 | Project Work and Viva Voce-I | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 22MDC81 | Modelling and Simulation | 3 | 0 | 0 | 3 | PC |
| 22MDC82 | Game Theory and Decision Analysis | 3 | 0 | 0 | 3 | PC |
| 22MDC83 | Production and Operations Management | 3 | 0 | 0 | 3 | PC |
| | Elective – III | 3 | 0 | 0 | 3 | PE |
| | Elective – IV | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 22MDC84 | Game Theory and Decision Analysis Laboratory | 0 | 0 | 4 | 2 | EEC |
| 22MDC85 | Minor Project (Decision Tool Development) | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - III | 0 | 0 | 4 | 2 | PE |
| | Total Credits | | | | 21 | |

Semester IX

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|---|----------|
| | THEORY | | | | | |
| 22MDC91 | Project Management | 3 | 0 | 0 | 3 | PC |
| 22MDC92 | Business Ethics and Entrepreneurship Development | 3 | 0 | 0 | 3 | PC |
| 22MDC93 | Data Privacy and Security Analytics | 3 | 0 | 0 | 3 | PC |
| | Elective – V | 3 | 0 | 0 | 3 | PE |
| | Elective – VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 22MDC94 | Data Privacy and Security Analytics Laboratory | 0 | 0 | 4 | 2 | PC |

| | | | | | | |
|--|------------------------|---|---|---|-----------|-----|
| | Elective Laboratory IV | 0 | 0 | 4 | 2 | EEC |
| | Elective Laboratory V | 0 | 0 | 4 | 2 | |
| | Total Credits | | | | 21 | |

Semester X

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--------------------------------|---|---|---|-----------|----------|
| 22MDC101 | Project Work and Viva Voce- II | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |

ELECTIVE COURSE

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--------------------------------------|---|---|---|---|----------|
| | MANAGEMENT STREAM | | | | | |
| | General Management | | | | | |
| 22MDCE01 | Business Process Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE02 | Business Environment | 3 | 0 | 0 | 3 | PE |
| 22MDCE03 | Legal Aspects of Business | 3 | 0 | 0 | 3 | PE |
| 22MDCE04 | Strategic Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE05 | Technology and Innovation Management | 3 | 0 | 0 | 3 | PE |
| | Finance | | | | | |

| | | | | | | |
|----------|---|---|---|---|---|----|
| 22MDCE11 | Equity Valuation | 3 | 0 | 0 | 3 | PE |
| 22MDCE12 | Credit Risk Analytics and Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE13 | International Financial Management | 3 | 0 | 0 | 3 | PE |
| | Marketing | | | | | |
| 22MDCE21 | Customer Relationship Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE22 | Brand Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE23 | Marketing Analytics | 3 | 0 | 0 | 3 | PE |
| | Human Resources | | | | | |
| 22MDCE31 | Strategic Human Resource Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE32 | Performance Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE33 | Compensation Management | 3 | 0 | 0 | 3 | PE |
| | Operations & Logistics | | | | | |
| 22MDCE41 | Total Quality Management | 3 | 0 | 0 | 3 | PE |
| 22MDCE42 | Logistics Strategy and Planning | 3 | 0 | 0 | 3 | PE |
| 22MDCE43 | Supply Chain Management | 3 | 0 | 0 | 3 | PE |
| | COMPUTER SCIENCE STREAM | | | | | |
| | Advanced Analytics and Intelligent Systems | | | | | |
| 22MDCE51 | Graph Theory for Data Science | 3 | 0 | 0 | 3 | PE |
| 22MDCE52 | Healthcare Analytics | 3 | 0 | 0 | 3 | PE |

| | | | | | | |
|----------|--|---|---|---|---|----|
| 22MDCE53 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |
| 22MDCE54 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| | Distributed and Network Systems | | | | | |
| 22MDCE61 | Blockchain Technologies | 3 | 0 | 0 | 3 | PE |
| 22MDCE62 | Distributed Computing | 3 | 0 | 0 | 3 | PE |
| 22MDCE63 | Embedded Systems | 3 | 0 | 0 | 3 | PE |
| 22MDCE64 | Sensing and Sensors | 3 | 0 | 0 | 3 | PE |
| 22MDCE65 | Internet of Things | 3 | 0 | 0 | 3 | PE |
| | Software Engineering | | | | | |
| 22MDCE71 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PE |
| 22MDCE72 | Human Computer Interaction and Interface | 3 | 0 | 0 | 3 | PE |
| 22MDCE73 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |
| | Cyber Security | | | | | |
| 22MDCE81 | Cyber Security Analytics | 3 | 0 | 0 | 3 | PE |
| 22MDCE82 | Digital Forensics | 3 | 0 | 0 | 3 | PE |
| | Professional Electives - Laboratory Courses | | | | | |
| 22MDCEL1 | Business Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |
| 22MDCEL2 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 22MDCEL3 | Computational Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |

| | | | | | | |
|----------|---------------------------------|---|---|---|---|----|
| 22MDCEL4 | Software Engineering Laboratory | 0 | 0 | 4 | 2 | PE |
| 22MDCEL5 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PE |

HS - Humanities and Social Sciences, BS - Basic Sciences, PC - Professional Core, PE - Professional Elective, EEC - Employability Enhancement Course.

NOTE :

- Equal weightage for Decision Science and Computer Science is given in the design of the curriculum, which complement each other to address the industry needs.
- Students of this Programme can specialize in Decision Science and/or Computing Science by choosing interested elective courses given under different streams.

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTING - ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

M.Sc. ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

(Five-Year Integrated Programme)

| Course Code | Course Name | L | T | P | C | CAT |
|----------------------|---------------------------------|---|---|---|-----------|-----|
| 19MAM11 | Technical English | 2 | 0 | 0 | 2 | HS |
| 19MAM12 | Applied Algebra | 3 | 0 | 0 | 3 | BS |
| 19MAM13 | Fundamental Statistical Methods | 3 | 0 | 0 | 3 | BS |
| 19MAM14 | Data Structures | 3 | 0 | 0 | 3 | PC |
| 19MAM15 | Theory of Programming Languages | 3 | 0 | 0 | 3 | PC |
| PRACTICALS | | | | | | |
| 19MAM16 | Algebra and Statistics Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM17 | Data Structures Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM18 | Python Programming Lab | 1 | 0 | 4 | 3 | PC |
| 19FYEL11 | Employability Skills | 0 | 0 | 2 | 1 | EEC |
| TOTAL CREDITS | | | | | 22 | |

| Course Code | Course Name | L | T | P | C | CAT |
|----------------------|--|---|---|---|-----------|-----|
| 19MAMLE01 | Professional English | 2 | 0 | 0 | 2 | HS |
| 19MAM21 | Applied Calculus | 3 | 0 | 0 | 3 | BS |
| 19MAM22 | Probability Distributions and Applications | 3 | 0 | 0 | 3 | BS |
| 19MAM23 | Computer System Architecture | 3 | 0 | 0 | 3 | PC |
| 19MAM24 | Advanced Data Structures | 3 | 0 | 0 | 3 | PC |
| PRACTICALS | | | | | | |
| 19MAM25 | Calculus and Probability Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM26 | Programming Paradigm Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM27 | Advanced Data Structures Lab | 0 | 0 | 4 | 2 | PC |
| 19FYEL21 | English for Employability | 0 | 0 | 2 | 1 | EEC |
| TOTAL CREDITS | | | | | 21 | |

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM31 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| 19MAM32 | Theory of Computing | 3 | 0 | 0 | 3 | PC |
| 19MAM33 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 19MAM34 | Predictive Analytics | 3 | 0 | 0 | 3 | BS |
| 19MAM35 | Human Computer Interaction | 3 | 1 | 0 | 4 | PC |
| | PRACTICALS | | | | | |
| 19MAM36 | Artificial Intelligence Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM37 | Database Management Systems Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM38 | Predictive Analytics Lab | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 22 | |

Semester IV

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM41 | Operations Research | 3 | 0 | 0 | 3 | BS |
| 19MAM42 | Machine Learning | 3 | 0 | 0 | 3 | PC |
| 19MAM43 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 | PC |
| 19MAM44 | Data Communications and Networking | 3 | 0 | 0 | 3 | PC |
| 19MAM45 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 19MAM46 | Machine Learning Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM47 | Design and Analysis of Algorithms Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM48 | Network Programming Lab | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 21 | |

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM51 | Advanced Machine Learning | 3 | 0 | 0 | 3 | PC |
| 19MAM52 | Artificial Neural Networks | 3 | 0 | 0 | 3 | PC |
| 19MAM53 | Knowledge Based Systems | 3 | 0 | 0 | 3 | PC |
| 19MAM54 | AI Systems Engineering | 3 | 0 | 0 | 3 | PC |
| 19MAM55 | Distributed and Cloud Computing | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 19MAM56 | Advanced Machine Learning Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM57 | Full Stack Web Development Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM58 | Cloud Computing Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM59 | Personality Development | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

| | | | | | | |
|---------|--------------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM61 | Intelligent Agents | 3 | 0 | 0 | 3 | PC |
| 19MAM62 | Deep Learning | 3 | 0 | 0 | 3 | PC |
| 19MAM63 | Information Retrieval and Web Search | 3 | 0 | 0 | 3 | PC |
| 19MAM64 | Big Data Analytics | 3 | 0 | 0 | 3 | PC |
| | Elective - I | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 19MAM65 | Deep Learning Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM66 | Mobile Application Development Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM67 | Big Data Analytics Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM68 | Communication Skills | 0 | 0 | 2 | 1 | EEC |
| 19MAM69 | Hackathon | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester VII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--------------------------------|---|---|---|-----------|-----|
| 19MAM71 | Project Work and Viva Voce - I | 0 | 0 | 0 | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |

Semester VIII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM81 | Graph Representation Learning | 3 | 0 | 0 | 3 | PC |
| 19MAM82 | Reinforcement Learning | 3 | 0 | 2 | 4 | PC |
| 19MAM83 | Meta-Heuristic Optimization Techniques | 3 | 0 | 0 | 3 | PC |
| | Elective II | 3 | 0 | 0 | 3 | PE |
| | Elective III | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 19MAM84 | Meta-Heuristic Optimization Lab | 0 | 0 | 4 | 2 | PC |
| | Elective Lab I | 0 | 0 | 4 | 2 | PE |
| | Elective Lab II | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 22 | |

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 19MAM91 | Computer Vision | 3 | 0 | 0 | 3 | PC |
| 19MAM92 | Cyber Threat Intelligence | 3 | 0 | 0 | 3 | PC |
| | Elective - IV | 3 | 0 | 0 | 3 | PE |
| | Elective - V | 3 | 0 | 0 | 3 | PE |
| | Elective - VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 19MAM93 | Computer Vision Lab | 0 | 0 | 4 | 2 | PC |
| 19MAM94 | Intelligent Cyber Security Lab | 0 | 0 | 4 | 2 | PC |
| | Elective Lab - III | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 21 | |

Semester X

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------|---|---|---|------------|-----|
| 19MAM101 | Project Work and Viva Voce - II | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |
| | Grand Total of Credits | | | | 210 | |

PROFESSIONAL ELECTIVES - AI & ML

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-------------------------------------|---|---|---|---|-----|
| 19MAME01 | Ethics in AI | | | | | 3 |
| 19MAME02 | Healthcare Analytics | | | | | 2 |
| 19MAME03 | Smart Applications | | | | | 3 |
| 19MAME04 | Spatial Data Modelling and Analysis | | | | | 3 |
| 19MAME05 | Augmented and Virtual Reality | | | | | 3 |
| 19MAME06 | Medical Image Processing | | | | | 3 |
| 19MAME07 | Natural Language Processing | | | | | 3 |
| 19MAME08 | Probabilistic Graphical Models | | | | | 2 |
| 19MAME09 | Cognitive Computing | | | | | 3 |
| 19MAME10 | Recommender Systems | | | | | 2 |
| 19MAME11 | Robotics and its Applications | | | | | 3 |
| 19MAME12 | Conversational AI | | | | | 3 |
| 19MAME13 | Game Theory | | | | | 3 |

PROFESSIONAL ELECTIVES-INFORMATION TECHNOLOGY

| | | |
|--|----------|-------------------------------------|
| | 19MAME14 | Agile Software Development |
| | 19MAME15 | SOA and Web Services |
| | 19MAME16 | Internet of Things |
| | 19MAME17 | Digital Signal and Image Processing |
| | 19MAME18 | Cyber Security |

PROFESSIONAL ELECTIVES - ECONOMICS, FINANCE AND MANAGEMENT

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-----------------------|---|---|---|---|-----|
| 19MAME19 | Business Intelligence | 3 | 0 | 0 | 3 | PE |

PROFESSIONAL ELECTIVES - LABORATORY

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--|---|---|---|---|-----|
| 19MAMEL01 | Spatial Data Modelling and Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 19MAMEL02 | Augmented and Virtual Reality Lab | 0 | 0 | 4 | 2 | PE |
| 19MAMEL03 | Natural Language Processing Lab | 0 | 0 | 4 | 2 | PE |
| 19MAMEL04 | Graph Analytics Lab | 0 | 0 | 4 | 2 | PE |
| 19MAMEL05 | Internet of Things Lab | 0 | 0 | 4 | 2 | PE |
| 19MAMEL06 | Cyber Security Lab | 0 | 0 | 4 | 2 | PE |

ONE CREDIT COURSES**

| Course Code | Course Name | L | T | P | C | CAT |
|--------------------|--|----------|----------|----------|----------|------------|
| 19MAMOC01 | Econometrics and Machine Learning in Finance | 1 | 0 | 0 | 1 | EEC |
| 19MAMOC02 | Java Programming | 0 | 0 | 2 | 1 | EEC |

**Over and above the CGPA

Advanced Data Structures and Algorithms Laboratory

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

MASTER OF COMPUTER APPLICATIONS

UNDER CHOICE BASED CREDIT SYSTEM

Curriculum from the Academic Year 2018 - 2019 onwards

Semester I

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------------|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA11 | Theory of Computing | 3 | 0 | 0 | 3 | FC |
| 18MCA12 | Data Structures | 3 | 0 | 0 | 3 | FC |
| 18MCA13 | Programming in C | 3 | 0 | 0 | 3 | PC |
| 18MCA14 | Computer Organization | 3 | 0 | 0 | 3 | FC |
| 18MCA15 | Probability and Statistics | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 18MCA16 | C Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA17 | User Experience Laboratory | 0 | 0 | 4 | 2 | FC |
| 18MCA18 | Statistics Laboratory | 0 | 0 | 4 | 2 | FC |
| 18MCA19 | Communication Skills | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA21 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 | FC |
| 18MCA22 | Object Oriented Principles and Programming in JAVA | 3 | 0 | 0 | 3 | PC |
| 18MCA23 | Principles of Operating System | 3 | 0 | 0 | 3 | PC |
| 18MCA24 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 18MCA25 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| | PRACTICAL | | | | | |
| 18MCA26 | Algorithms and Operating Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA27 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA28 | RDBMS Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA29 | Professional English | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA31 | Numerical Methods and Applied Statistics | 4 | 0 | 0 | 4 | FC |
| 18MCA32 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 18MCA33 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| 18MCA34 | SOA and Web Services | 3 | 0 | 0 | 3 | PC |
| | Elective I | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA35 | Advanced Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA36 | Artificial Intelligence Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA37 | Network Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA38* | Personality Development | | | | | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|-------------------------------------|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA41 | Operations Research | 4 | 0 | 0 | 4 | FC |
| 18MCA42 | Data Mining and Warehousing | 3 | 0 | 0 | 3 | PC |
| 18MCA43 | Accounting and Financial Management | 4 | 0 | 0 | 4 | PC |
| | Elective II | 3 | 0 | 0 | 3 | PE |
| | Elective III | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA44 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCA45 | Mini Project | 0 | 0 | 4 | 2 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA51 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PC |
| 18MCA52 | Cryptography and Network Security | 3 | 0 | 0 | 3 | PC |
| | Elective IV | 3 | 0 | 0 | 3 | PE |
| | Elective V | 3 | 0 | 0 | 3 | PE |
| | Elective VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA53 | Software Testing Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA54 | Information Security Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA55* | Professional Ethics | | | | | EEC |
| | TOTAL CREDITS | | | | 19 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------------|---|---|---|-----------|----------|
| 18MCA61 | Project work and Viva voce | | | | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |

TOTAL = 126**Professional Electives**

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| | INFORMATION TECHNOLOGY ELECTIVES | | | | | |
| 18MCAE01 | Virtualization and Cloud Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE02 | Graphics and Multimedia | 3 | 0 | 0 | 3 | PE |
| 18MCAE03 | Advanced Database Management Systems | 3 | 0 | 0 | 3 | PE |
| 18MCAE04 | Distributed Systems | 3 | 0 | 0 | 3 | PE |
| 18MCAE05 | Grid and Cluster Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE06 | Internet of Things | 3 | 0 | 0 | 3 | PE |
| 18MCAE07 | Software Metrics and Measurement | 3 | 0 | 0 | 3 | PE |
| 18MCAE08 | Agile Methods for Software Development | 3 | 0 | 0 | 3 | PE |
| 18MCAE09 | Open Source Ecosystem | 3 | 0 | 0 | 3 | PE |
| 18MCAE10 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |
| 18MCAE11 | Enterprise Management and Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE12 | Basics of Robotics | 3 | 0 | 0 | 3 | PE |
| 18MCAE13 | GPU and Parallel Programming | 3 | 0 | 0 | 3 | PE |
| 18MCAE14 | Digital Image Processing | 3 | 0 | 0 | 3 | PE |
| | MANAGEMENT ELECTIVES | | | | | |
| 18MCAE15 | Organizational Behavior | 3 | 0 | 0 | 3 | PE |

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|---|----------|
| 18MCAE16 | Principles of Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE17 | Principles of Environmental Science | 3 | 0 | 0 | 3 | PE |
| 18MCAE18 | E-Commerce | 3 | 0 | 0 | 3 | PE |
| 18MCAE19 | Decision Making | 3 | 0 | 0 | 3 | PE |
| 18MCAE20 | Entrepreneurship Development | 3 | 0 | 0 | 3 | PE |
| | FINANCIAL TECHNOLOGY ELECTIVES | | | | | |
| 18MCAE21 | E-Portfolio Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE22 | Financial Techniques and Analysis | 3 | 0 | 0 | 3 | PE |
| | DATA SCIENCE ELECTIVES | | | | | |
| 18MCAE23 | Machine Learning | 3 | 0 | 0 | 3 | PE |
| 18MCAE24 | Data Analytics | 3 | 0 | 0 | 3 | PE |
| 18MCAE25 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| 18MCAE26 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |
| 18MCAE27 | Intelligent Information Retrieval | 3 | 0 | 0 | 3 | PE |
| 18MCAE28 | Big Data Technologies | 3 | 0 | 0 | 3 | PE |
| | NETWORKING TECHNOLOGY ELECTIVES | | | | | |
| 18MCAE29 | Ad Hoc Networks | 3 | 0 | 0 | 3 | PE |
| 18MCAE30 | Internetworking Protocols and Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE31 | Mobile Computing | 3 | 0 | 0 | 3 | PE |
| | LANGUAGE ELECTIVES | | | | | |
| 18FY22F | Basic French | 3 | 0 | 0 | 3 | EEC |
| 18FY22G | Basic German | 3 | 0 | 0 | 3 | EEC |

PROFESSIONAL ELECTIVES - Labs

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| 18MCAEL01 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL02 | Graphics and Multimedia Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL03 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL04 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL05 | Social Network Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL06 | Virtualization and Cloud Computing Laboratory | 0 | 0 | 4 | 2 | PE |

OPEN ELECTIVES OFFERED

| Course Code | Course Name | L | T | P | C | Category |
|--------------------|-------------------------------------|----------|----------|----------|----------|-----------------|
| 18MCAOE01 | Accounting and Financial Management | 3 | 0 | 0 | 3 | OE |
| 18MCAOE02 | Basics of Java Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE03 | C# and Dot Net Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE04 | Python Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE05 | Data Mining and Warehousing | 3 | 0 | 0 | 3 | OE |
| 18MCAOE06 | Natural Language Processing | 3 | 0 | 0 | 3 | OE |
| 18MCAOE07 | Social Network Analysis | 3 | 0 | 0 | 3 | OE |

* Pass is required

FC - Foundation Course, PC - Professional Core, PE - Professional Elective,
EEC - Employability Enhancement Course.

CURRICULUM
M.E- ADVANCED MANUFACTURING TECHNOLOGY

| SEMESTER – I | | | | | | |
|-----------------------|--------------------|---|------------------------|----------|----------|----------------|
| S.No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1. | 19MMA11 | Applied Numerical Analysis | 3 | 0 | 0 | 3 |
| 2. | 19MMA12 | Mechatronics in Manufacturing Systems | 3 | 0 | 0 | 3 |
| 3. | 19MMA13 | Computer Integrated Manufacturing | 3 | 0 | 0 | 3 |
| 4. | 19MMA14 | Optimization for Engineering Applications | 3 | 0 | 0 | 3 |
| 5. | 19MMA15 | Advanced Material Engineering | 3 | 0 | 0 | 3 |
| 6. | | Professional Elective – I | 3 | 0 | 0 | 3 |
| 7. | 19MMA17 | CIM Laboratory & Mechatronics Laboratory | 0 | 0 | 4 | 2 |
| Total Credits: | | | 18 | | 4 | 20 |

| SEMESTER – II | | | | | | |
|-----------------------|--------------------|--|------------------------|----------|----------|----------------|
| S.No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMA21 | Design for Manufacture and Assembly | 3 | 0 | 0 | 3 |
| 2 | 19MMA22 | Advanced Metal Joining Technology | 3 | 0 | 0 | 3 |
| | 19MMA23 | Finite Element Analysis in Manufacturing Engineering | 3 | 0 | 0 | 3 |
| 3 | | Professional Elective – II | 3 | 0 | 0 | 3 |
| 4 | | Professional Elective – III | 3 | 0 | 0 | 3 |
| | | Professional Elective – IV | 3 | 0 | 0 | 3 |
| 5 | 19MMA27 | Simulation Laboratory & Welding Laboratory | 0 | 0 | 4 | 2 |
| 8 | | Mini project / Industrial Training / Employability Enhancement Courses | 0 | 0 | 4 | 2 |
| Total Credits: | | | 18 | | 8 | 22 |

M.E- ADVANCED MANUFACTURING TECHNOLOGY

| SEMESTER – III | | | | | | |
|-----------------------|--------------------|---------------------------------------|------------------------|----------|----------|----------------|
| S.No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | | Professional Elective - IV | 3 | 0 | 0 | 3 |
| 2 | | Professional Elective -V | 3 | 0 | 0 | 3 |
| | | Open Elective / Professional Elective | 3 | 0 | 0 | 3 |
| 3 | 19MMA41 | Project Work and Viva Voce | 0 | 0 | 0 | 0 |
| Total Credits: | | | 9 | | | 9 |

| SEMESTER – IV | | | | | | |
|-----------------------|--------------------|----------------------------|------------------------|----------|----------|----------------|
| S.No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMA41 | Project Work and Viva Voce | 0 | 0 | 0 | 18 |
| Total Credits: | | | | | | 18 |

TOTAL CREDITS FOR THE PROGRAMME = 20 + 22 + 9 + 18 = 69

M.E- ADVANCED MANUFACTURING TECHNOLOGY

| LIST OF PROFESSIONAL ELECTIVES | | | | | | |
|--------------------------------|----------------|--|--------------------|---|---|---------|
| Sl.no | COURS ECODE | COURSE TITLE | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1. | 19MMAE 01 | Design of Hydraulic and Pneumatic system | 3 | 0 | 0 | 3 |
| 2. | 19MMAE 02 | Optimization Techniques in Manufacturing | 3 | 0 | 0 | 3 |
| 3. | 19MMAE 03 | Advanced Operations Research | 3 | 0 | 0 | 3 |
| 4. | 19MMAE 04 | Industrial Robotics and Machine Vision | 3 | 0 | 0 | 3 |
| 5. | 19MMAE 05 | Manufacturing Information systems | 3 | 0 | 0 | 3 |
| 6. | 19MMAE 06 | Supply Chain Management | 3 | 0 | 0 | 3 |
| 7. | 19MMAE 07 | Advanced Metrology and Non - Destructive testing | 3 | 0 | 0 | 3 |
| 8. | 19MMAE 08 | Productivity Management and Re-Engineering | 3 | 0 | 0 | 3 |
| 9. | 19MMAE 09 | Supply chain Information systems | 3 | 0 | 0 | 3 |
| 10. | 19MMAE 10 | Additive Manufacturing | 3 | 0 | 0 | 3 |
| 11. | 19MMAE 11 | Advances in Casting and Welding | 3 | 0 | 0 | 3 |
| 12. | 19MMAE 12 | Product Design and Development | 3 | 0 | 0 | 3 |
| 13. | 19MMAE 13 | Computer Aided Process Planning | 3 | 0 | 0 | 3 |
| 14. | 19MMAE 14 | Advanced Manufacturing Planning and Control | 3 | 0 | 0 | 3 |
| 15. | 19MMAE 15 | Flexible competitive manufacturing system | 3 | 0 | 0 | 3 |
| 16. | 19MMAE 16 | Corrosion and Surface engineering | 3 | 0 | 0 | 3 |
| 17. | 19MMAE 17 | Advanced Tool Engineering and Design | 3 | 0 | 0 | 3 |
| 18. | 19MMAE 18 | Total Quality Systems and Engineering | 3 | 0 | 0 | 3 |
| 19. | 19MMAE 19 | Plastics and Composite Materials | 3 | 0 | 0 | 3 |
| 20. | 19MMAE 20 | Advances in Foundry Technology | 3 | 0 | 0 | 3 |
| 21. | 19MMAE 21 | Advanced Agile and Lean Manufacturing Systems | 3 | 0 | 0 | 3 |
| 22. | 19MMAE 22 | Advanced Biomaterials | 3 | 0 | 0 | 3 |
| 23. | 19MMAE 23 | Concepts and Analysis of Robot Manipulators | 4 | 0 | 0 | 4 |
| 24. | 19MMAE 24 | Smart Materials and Systems | 3 | 0 | 0 | 3 |
| 25. | 19MMAE 25 | Ultrasonic and Applications | 3 | 0 | 0 | 3 |
| 26. | 19MMAE 26 | Vibration Analysis and Control | 3 | 0 | 0 | 3 |
| 27. | 19MMAE 27 | Design of Experiments and Taguchi Methods | 3 | 0 | 0 | 3 |
| 28. | 19MMAE 28 | Metal Cutting Theory and Practice | 3 | 0 | 0 | 3 |
| 29. | 19MMAE 29 | Automotive Suspension and System Dynamics | 3 | 0 | 0 | 3 |
| 30. | 19MMAE 30 | Design and Analysis of Experiments | 3 | 0 | 0 | 3 |

M.E- ADVANCED MANUFACTURING TECHNOLOGY

| LIST OF OPEN ELECTIVES TO OTHER DEPARTMENTS | | | | | | |
|--|--------------------|--|------------------------|----------|----------|----------------|
| S. No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1. | OE01 | Automation and Robotics | 3 | 0 | 0 | 3 |
| 2. | OE02 | Work Study and Ergonomics | 3 | 0 | 0 | 3 |
| 3. | OE03 | Product Life Cycle Management | 3 | 0 | 0 | 3 |
| 4. | OE04 | IoT in Manufacturing | 3 | 0 | 0 | 3 |
| 5. | OE05 | Artificial Intelligence and Machine Learning in Design and Manufacturing | 3 | 0 | 0 | 3 |
| 6. | OE06 | Research Methodology and IPR | 3 | 0 | 0 | 3 |

| LIST OF EMPLOYABILITY ENHANCEMENT COURSE | | | | | | |
|---|--------------------|--|------------------------|----------|----------|----------------|
| S.No | COURSE CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1. | 19MMA 41 | Project Work and Viva Voce | - | - | - | 18 |
| 2. | EEC01 | English for Research Paper Writing | 0 | 0 | 4 | 2 |
| 3. | EEC02 | Constitution of India | 0 | 0 | 4 | 2 |
| 4. | EEC03 | Pedagogy Studies | 0 | 0 | 4 | 2 |
| 5. | EEC04 | Personality and skill Development | 0 | 0 | 4 | 2 |
| 6. | EEC05 | Python Programming | 0 | 0 | 4 | 2 |
| 7. | EEC06 | Intellectual Property Rights and Patents | 0 | 0 | 4 | 2 |
| 8. | EEC07 | Study of Indian Economy | 0 | 0 | 4 | 2 |
| 9. | EEC08 | Seminar and term paper writing | 0 | 0 | 4 | 2 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|------------------------------------|------------------------|--|----------------------------|----------|----------|----------------|
| SEMESTER – I | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMH11 | Applied Mathematics for Mechanical Engineers | 3 | 0 | 0 | 3 |
| 2 | 19MMH12 | Advanced Thermodynamics | 3 | 0 | 0 | 3 |
| 3 | 19MMH13 | Incompressible Flow | 3 | 0 | 0 | 3 |
| 4 | 19MMH14 | Energy Conservation and Energy Audit | 3 | 0 | 0 | 3 |
| 5 | 19MMH15 | Turbo machinery | 3 | 0 | 0 | 3 |
| 6 | | Professional Elective - I | 3 | 0 | 0 | 3 |
| 7 | 19MMH17 | Thermodynamics Laboratory | 0 | 0 | 4 | 2 |
| Total Credits: | | | 18 | 0 | 4 | 20 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|------------------------------------|-------------------------|---|----------------------------|----------|-----------|----------------|
| SEMESTER – II | | | | | | |
| S.No | COURS E CODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMH21 | Conduction Heat Transfer | 3 | 0 | 0 | 3 |
| 2 | 19MMH22 | Convective Heat Transfer | 3 | 0 | 0 | 3 |
| 3 | 19MMH23 | Design of Heat Exchangers | 3 | 0 | 0 | 3 |
| 4 | | Professional Elective - II | 3 | 0 | 0 | 3 |
| 5 | | Professional Elective - III | 3 | 0 | 0 | 3 |
| 6 | | Professional Elective - IV | 3 | 0 | 0 | 3 |
| 7 | 19MMH27 | Heat Transfer Laboratory | 0 | 0 | 4 | 2 |
| 8 | | Employability Enhancement Course (EEC-I) | 0 | 0 | 4 | 2 |
| Total Credits: | | | 18 | 0 | 08 | 22 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|-----------------------------|----------------|---|--------------------|----------|----------|----------|
| SEMESTER – III | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | | Professional Elective V | 3 | 0 | 0 | 3 |
| 2 | | Professional Elective VI | 3 | 0 | 0 | 3 |
| 3 | | Open Elective/Professional Elective VII | 3 | 0 | 0 | 3 |
| 4 | 19MMH41 | Project Work and Viva Voce | 0 | 0 | 0 | 0 |
| Total Credits: | | | 9 | 0 | 0 | 9 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|-----------------------------|----------------|----------------------------|--------------------|----------|----------|-----------|
| SEMESTER – IV | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMH41 | Project Work and Viva voce | 0 | 0 | 0 | 18 |
| Total Credits: | | | 0 | 0 | 0 | 18 |

TOTAL CREDITS FOR THE PROGRAMME = 20+22+09+18 =

69

| M.E- HEAT POWER ENGINEERING | | | | | | |
|--------------------------------------|------------------------|---|----------------------------|----------|----------|----------------|
| LIST OF PROFESSIONAL ELECTIVE | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMHE0 1 | Advanced Internal Combustion Engines | 3 | 0 | 0 | 3 |
| 2 | 19MMHE0 2 | Refrigeration & Air-Conditioning | 3 | 0 | 0 | 3 |
| 3 | 19MMHE0 3 | Solar Energy Utilization & TER | 3 | 0 | 0 | 3 |
| 4 | 19MMHE0 4 | Turbulent Flows | 3 | 0 | 0 | 3 |
| 5 | 19MMHE0 5 | Numerical Methods in Heat Transfer & Fluid Flow | 3 | 0 | 0 | 3 |
| 6 | 19MMHE0 6 | Compressible Flow | 3 | 0 | 0 | 3 |
| 7 | 19MMHE0 7 | Finite Element Methods in Thermal Engineering | 3 | 0 | 0 | 3 |
| 8 | 19MMHE0 8 | Radiation Heat Transfer | 3 | 0 | 0 | 3 |
| 9 | 19MMHE0 9 | Design & Optimization of Thermal Equipment | 3 | 0 | 0 | 3 |
| 10 | 19MMHE1 0 | Thermal Measurements and Process Control | 3 | 0 | 0 | 3 |
| 11 | 19MMHE1 1 | Thermal Storage Systems | 3 | 0 | 0 | 3 |
| 12 | 19MMHE1 2 | Hybrid Vehicles | 3 | 0 | 0 | 3 |
| 13 | 19MMHE1 3 | Materials for Thermal Engineering | 3 | 0 | 0 | 3 |
| 14 | 19MMHE1 4 | Alternative Energy Resources | 3 | 0 | 0 | 3 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|------------------------------------|------------------------|---|----------------------------|----------|----------|----------------|
| LIST OF OPEN ELECTIVE | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | OE01 | Industrial Safety | 3 | 0 | 0 | 3 |
| 2 | OE02 | Waste Heat Recovery | 3 | 0 | 0 | 3 |
| 3 | OE03 | Product Design and Process Development | 3 | 0 | 0 | 3 |
| 4 | OE04 | Power Plant Management and Cost Estimations | 3 | 0 | 0 | 3 |
| 5 | OE05 | Automobile Engineering | 3 | 0 | 0 | 3 |
| 6 | OE06 | Vehicles Automation | 3 | 0 | 0 | 3 |
| 7 | OE07 | Nuclear Engineering | 3 | 0 | 0 | 3 |
| 8 | OE08 | Entrepreneurship Development and Management | 3 | 0 | 0 | 3 |

| M.E- HEAT POWER ENGINEERING | | | | | | |
|--|------------------------|---|----------------------------|----------|----------|----------------|
| LIST OF EMPLOYABILITY ENHANCEMENT COURSES (EEC) | | | | | | |
| S.No | COURS ECODE | COURSE NAME | TEACHING SCHEME | | | CREDITS |
| | | | L | T | P | |
| 1 | 19MMH41 | Project Viva-Voce/Industrial Training | 0 | 0 | 0 | 18 |
| 2 | EEC01 | Internet of Things (IoT) for Thermal Sciences | 0 | 0 | 4 | 2 |
| 3 | EEC02 | English for Research Paper Writing | 0 | 0 | 4 | 2 |
| 4 | EEC03 | Constitution of India | 0 | 0 | 4 | 2 |
| 5 | EEC04 | Pedagogy Studies | 0 | 0 | 4 | 2 |
| 6 | EEC05 | Personality and Skill Development | 0 | 0 | 4 | 2 |
| 7 | EEC06 | Intellectual Property Rights and Patents | 0 | 0 | 4 | 2 |
| 8 | EEC07 | Seminar & Term Paper Writing | 0 | 0 | 4 | 2 |
| 9 | EEC08 | Study of Indian Economy | 0 | 0 | 4 | 2 |
| 10 | EEC09 | Python Programming | 0 | 0 | 4 | 2 |

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

M.E. COMPUTER SCIENCE AND ENGINEERING

SUBJECTS OF STUDY

Semester I

| Course Code | Course Name | Category | L | T | P | C |
|-------------|--|----------|-----------|----------|----------|-----------|
| 19MCS11 | Graph theory and Linear algebra | FC | 3 | 0 | 0 | 3 |
| 19MCS12 | Design and Analysis of Algorithms | PC | 3 | 1 | 0 | 4 |
| 19MCS13 | Software Engineering Methodologies | PC | 3 | 1 | 0 | 4 |
| 19MCS14 | Artificial Intelligence | PC | 3 | 0 | 0 | 3 |
| | Professional Elective I | PE | 3 | 0 | 0 | 3 |
| 19MCS15 | Artificial Intelligence Laboratory | LC | 0 | 0 | 4 | 2 |
| 19MCS16 | Design and Analysis of Algorithms Laboratory | LC | 0 | 0 | 4 | 2 |
| | TOTAL CREDITS | | 15 | 2 | 8 | 21 |

Semester II

| Course Code | Course Name | Category | L | T | P | C |
|-------------|-----------------------------|----------|-----------|----------|-----------|-----------|
| 19MCS21 | Probability and Statistics | FC | 3 | 1 | 0 | 4 |
| 19MCS22 | Machine Learning | PC | 3 | 0 | 0 | 3 |
| 19MCS23 | Database Engineering | PC | 3 | 1 | 0 | 4 |
| | Professional Elective -II | PE | 3 | 0 | 0 | 3 |
| | Professional Elective -III | PE | 3 | 0 | 0 | 3 |
| 19MCS24 | Machine Learning Laboratory | LC | 0 | 0 | 4 | 2 |
| 19MCS25 | Mini Project | EEC | 0 | 0 | 6 | 3 |
| | TOTAL CREDITS | | 15 | 2 | 10 | 22 |

Semester III

| Course Code | Course Name | Category | L | T | P | C |
|-------------|---------------------------|----------|----------|----------|----------|-----------|
| | Professional Elective -IV | PE | 3 | 0 | 0 | 3 |
| | Professional Elective -V | PE | 3 | 0 | 0 | 3 |
| | Open Elective* | OE | 3 | 0 | 0 | 3 |
| | Python Programming | EEC | 0 | 0 | 2 | 1 |
| | TOTAL CREDITS | | 9 | 0 | 2 | 10 |

* Open Elective can be opted from same stream or from other streams.

Semester IV

| Course Code | Course Name | Category | L | T | P | C |
|-------------|-----------------------|----------|----------|----------|-----------|-----------|
| 19MCS41 | Project and Viva-Voce | EEC | 0 | 0 | 36 | 18 |
| | TOTAL CREDITS | | 0 | 0 | 36 | 18 |

Total Credits : 71**FOUNDATION COURSE (FC)**

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|---------------------------------|---|---|---|---|----------|
| 19MCS11 | Graph theory and Linear algebra | 3 | 0 | 0 | 3 | 1 |
| 19MCS21 | Probability and Statistics | 3 | 1 | 0 | 4 | 2 |

PROFESSIONAL CORE (PC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|------------------------------------|---|---|---|---|----------|
| 19MCS12 | Design and Analysis of Algorithms | 3 | 1 | 0 | 4 | 1 |
| 19MCS13 | Software Engineering Methodologies | 3 | 1 | 0 | 4 | 1 |
| 19MCS14 | Artificial Intelligence | 3 | 0 | 0 | 3 | 1 |
| 19MCS22 | Machine Learning | 3 | 0 | 0 | 3 | 2 |
| 19MCS23 | Database Engineering | 3 | 1 | 0 | 4 | 2 |

LABORATORY COURSE (LC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|--|---|---|---|---|----------|
| 19MCS15 | Artificial Intelligence Laboratory | 0 | 0 | 4 | 2 | 1 |
| 19MCS16 | Design and Analysis of Algorithms Laboratory | 0 | 0 | 4 | 2 | 1 |
| 19MCS24 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | 2 |

EMPLOYABILITY ENHANCEMENT COURSE (EEC)

| Course Code | Course Name | L | T | P | C | Semester |
|-------------|--------------------|---|---|----|----|----------|
| 19MCS25 | Mini Project | 0 | 0 | 6 | 3 | 2 |
| 19MCS41 | Project | 0 | 0 | 36 | 18 | 4 |
| 19MCSOC01 | Python Programming | 0 | 0 | 2 | 1 | 3 |

PROFESSIONAL ELECTIVES (PE)

| Course Code | Course Name | L | T | P | C |
|-------------|---------------------------------------|---|---|---|---|
| 19MCSE01 | Cryptography and Network Security | 3 | 0 | 0 | 3 |
| 19MCSE02 | High Performance Computing | 3 | 0 | 0 | 3 |
| 19MCSE03 | Neural Networks | 3 | 0 | 0 | 3 |
| 19MCSE04 | Open Source systems | 3 | 0 | 0 | 3 |
| 19MCSE05 | Approximation Algorithm | 3 | 0 | 3 | 3 |
| 19MCSE06 | Internet Technologies | 3 | 0 | 0 | 3 |
| 19MCSE07 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 |
| 19MCSE08 | Business Intelligence | 3 | 0 | 0 | 3 |
| 19MCSE09 | Cloud Computing | 3 | 0 | 0 | 3 |
| 19MCSE10 | Information Security | 3 | 0 | 0 | 3 |
| 19MCSE11 | Knowledge based AI | 3 | 0 | 0 | 3 |
| 19MCSE12 | Software Metrics and Measurements | 3 | 0 | 0 | 3 |
| 19MCSE13 | Robot Human Interaction | 3 | 0 | 0 | 3 |
| 19MCSE14 | Big Data Analytics | 3 | 0 | 0 | 3 |
| 19MCSE15 | Deep Learning | 3 | 0 | 0 | 3 |
| 19MCSE16 | Bio informatics | 3 | 0 | 0 | 3 |
| 19MCSE17 | Internet of Things | 3 | 0 | 0 | 3 |
| 19MCSE18 | Web Engineering | 3 | 0 | 0 | 3 |
| 19MCSE19 | Parallel Algorithms | 3 | 0 | 0 | 3 |
| 19MCSE20 | Computer Vision | 3 | 0 | 0 | 3 |
| 19MCSE21 | Case Based Reasoning | 3 | 0 | 0 | 3 |
| 19MCSE22 | Multimedia Systems | 3 | 0 | 0 | 3 |
| 19MCSE23 | Ad Hoc Networks | 3 | 0 | 0 | 3 |
| 19MCSE24 | Wireless Sensor Networks | 3 | 0 | 0 | 3 |
| 19MCSE25 | Secure Software Engineering | 3 | 0 | 0 | 3 |
| 19MCSE26 | Service Oriented Architecture | 3 | 0 | 0 | 3 |
| 19MCSE27 | Human Computer Interaction | 3 | 0 | 0 | 3 |
| 19MCSE28 | Social Network Analysis | 3 | 0 | 0 | 3 |
| 19MCSE29 | Advanced cryptography and practices | 3 | 0 | 0 | 3 |
| 19MCSE30 | Blockchain design and their use cases | 3 | 0 | 0 | 3 |

| Course Code | Course Name | L | T | P | C |
|-------------|-------------------------------------|---|---|---|---|
| 19MCSOE01 | Optimization Techniques | 3 | 0 | 0 | 3 |
| 19MCSOE02 | Mobile Applications and Services | 3 | 0 | 0 | 3 |
| 19MCSOE03 | Soft Computing | 3 | 0 | 0 | 3 |
| 19MCSOE04 | Digital Forensics | 3 | 0 | 0 | 3 |
| 19MCSOE05 | Data Science | 3 | 0 | 0 | 3 |
| 19MCSOE06 | Introduction to Intelligent Systems | 3 | 0 | 0 | 3 |

| S.No. | Course Category | Credits as per semester | | | | Category Wise Credits distribution |
|-------|---|-------------------------|-----------|-----------|-----------|------------------------------------|
| | | I | II | III | IV | |
| 1 | FC | 3 | 4 | - | - | 7 |
| 2 | PC | 11 | 7 | - | - | 18 |
| 3 | LC | 4 | 2 | - | - | 6 |
| 4 | PE | 3 | 6 | 6 | - | 15 |
| 5 | OE | - | - | 3 | - | 3 |
| 6 | EEC | - | 3 | 1 | 18 | 22 |
| | Semester Wise Credits distribution | 21 | 22 | 10 | 18 | 71 |

PROFESSIONAL ELECTIVES (PE)

COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

MASTER OF COMPUTER APPLICATIONS

UNDER CHOICE BASED CREDIT SYSTEM

Curriculum from the Academic Year 2018 - 2019 onwards

Semester I

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------------|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA11 | Theory of Computing | 3 | 0 | 0 | 3 | FC |
| 18MCA12 | Data Structures | 3 | 0 | 0 | 3 | FC |
| 18MCA13 | Programming in C | 3 | 0 | 0 | 3 | PC |
| 18MCA14 | Computer Organization | 3 | 0 | 0 | 3 | FC |
| 18MCA15 | Probability and Statistics | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 18MCA16 | C Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA17 | User Experience Laboratory | 0 | 0 | 4 | 2 | FC |
| 18MCA18 | Statistics Laboratory | 0 | 0 | 4 | 2 | FC |
| 18MCA19 | Communication Skills | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA21 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 | FC |
| 18MCA22 | Object Oriented Principles and Programming in JAVA | 3 | 0 | 0 | 3 | PC |
| 18MCA23 | Principles of Operating System | 3 | 0 | 0 | 3 | PC |
| 18MCA24 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 18MCA25 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| | PRACTICAL | | | | | |
| 18MCA26 | Algorithms and Operating Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA27 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA28 | RDBMS Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA29 | Professional English | 0 | 0 | 2 | 1 | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester III

| PROFESSIONAL ELECTIVES (PE) Course Code | Course Name | L | T | P | C | Category |
|---|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA31 | Numerical Methods and Applied Statistics | 4 | 0 | 0 | 4 | FC |
| 18MCA32 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 18MCA33 | Artificial Intelligence | 3 | 0 | 0 | 3 | PC |
| 18MCA34 | SOA and Web Services | 3 | 0 | 0 | 3 | PC |
| | Elective I | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA35 | Advanced Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA36 | Artificial Intelligence Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA37 | Network Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA38* | Personality Development | | | | | EEC |
| | TOTAL CREDITS | | | | 22 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|-------------------------------------|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA41 | Operations Research | 4 | 0 | 0 | 4 | FC |
| 18MCA42 | Data Mining and Warehousing | 3 | 0 | 0 | 3 | PC |
| 18MCA43 | Accounting and Financial Management | 4 | 0 | 0 | 4 | PC |
| | Elective II | 3 | 0 | 0 | 3 | PE |
| | Elective III | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA44 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCA45 | Mini Project | 0 | 0 | 4 | 2 | EEC |
| | TOTAL CREDITS | | | | 23 | |

Semester V

| PROFESSIONAL ELECTIVES (PE) Course Code | Course Name | L | T | P | C | Category |
|---|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 18MCA51 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PC |
| 18MCA52 | Cryptography and Network Security | 3 | 0 | 0 | 3 | PC |
| | Elective IV | 3 | 0 | 0 | 3 | PE |
| | Elective V | 3 | 0 | 0 | 3 | PE |
| | Elective VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICAL | | | | | |
| 18MCA53 | Software Testing Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA54 | Information Security Laboratory | 0 | 0 | 4 | 2 | PC |
| 18MCA55* | Professional Ethics | | | | | EEC |
| | TOTAL CREDITS | | | | 19 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|----------------------------|---|---|---|-----------|----------|
| 18MCA61 | Project work and Viva voce | | | | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |

TOTAL = 126

Professional Electives

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| | INFORMATION TECHNOLOGY ELECTIVES | | | | | |
| 18MCAE01 | Virtualization and Cloud Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE02 | Graphics and Multimedia | 3 | 0 | 0 | 3 | PE |
| 18MCAE03 | Advanced Database Management Systems | 3 | 0 | 0 | 3 | PE |
| 18MCAE04 | Distributed Systems | 3 | 0 | 0 | 3 | PE |
| 18MCAE05 | Grid and Cluster Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE06 | Internet of Things | 3 | 0 | 0 | 3 | PE |
| 18MCAE07 | Software Metrics and Measurement | 3 | 0 | 0 | 3 | PE |
| 18MCAE08 | Agile Methods for Software Development | 3 | 0 | 0 | 3 | PE |
| 18MCAE09 | Open Source Ecosystem | 3 | 0 | 0 | 3 | PE |
| 18MCAE10 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |
| 18MCAE11 | Enterprise Management and Computing | 3 | 0 | 0 | 3 | PE |
| 18MCAE12 | Basics of Robotics | 3 | 0 | 0 | 3 | PE |
| 18MCAE13 | GPU and Parallel Programming | 3 | 0 | 0 | 3 | PE |
| 18MCAE14 | Digital Image Processing | 3 | 0 | 0 | 3 | PE |
| | MANAGEMENT ELECTIVES | | | | | |
| 18MCAE15 | Organizational Behavior | 3 | 0 | 0 | 3 | PE |

| Course Code | Course Name | L | T | P | C | Category |
|--|--|---|---|---|---|----------|
| PROFESSIONAL ELECTIVES (PE) | | | | | | |
| 18MCAE16 | Principles of Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE17 | Principles of Environmental Science | 3 | 0 | 0 | 3 | PE |
| 18MCAE18 | E-Commerce | 3 | 0 | 0 | 3 | PE |
| 18MCAE19 | Decision Making | 3 | 0 | 0 | 3 | PE |
| 18MCAE20 | Entrepreneurship Development | 3 | 0 | 0 | 3 | PE |
| FINANCIAL TECHNOLOGY ELECTIVES | | | | | | |
| 18MCAE21 | E-Portfolio Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE22 | Financial Techniques and Analysis | 3 | 0 | 0 | 3 | PE |
| DATA SCIENCE ELECTIVES | | | | | | |
| 18MCAE23 | Machine Learning | 3 | 0 | 0 | 3 | PE |
| 18MCAE24 | Data Analytics | 3 | 0 | 0 | 3 | PE |
| 18MCAE25 | Natural Language Processing | 3 | 0 | 0 | 3 | PE |
| 18MCAE26 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |
| 18MCAE27 | Intelligent Information Retrieval | 3 | 0 | 0 | 3 | PE |
| 18MCAE28 | Big Data Technologies | 3 | 0 | 0 | 3 | PE |
| NETWORKING TECHNOLOGY ELECTIVES | | | | | | |
| 18MCAE29 | Ad Hoc Networks | 3 | 0 | 0 | 3 | PE |
| 18MCAE30 | Internetworking Protocols and Management | 3 | 0 | 0 | 3 | PE |
| 18MCAE31 | Mobile Computing | 3 | 0 | 0 | 3 | PE |
| LANGUAGE ELECTIVES | | | | | | |
| 18FY22F | Basic French | 3 | 0 | 0 | 3 | EEC |
| 18FY22G | Basic German | 3 | 0 | 0 | 3 | EEC |

PROFESSIONAL ELECTIVES - Labs

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| 18MCAEL01 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL02 | Graphics and Multimedia Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL03 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL04 | Natural Language Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL05 | Social Network Analysis Laboratory | 0 | 0 | 4 | 2 | PE |
| 18MCAEL06 | Virtualization and Cloud Computing Laboratory | 0 | 0 | 4 | 2 | PE |

OPEN ELECTIVES OFFERED

| COURSE Code | ELECTIVES (PE) Course Name | L | T | P | C | Category |
|------------------------|-------------------------------------|----------|----------|----------|----------|-----------------|
| 18MCAOE01 | Accounting and Financial Management | 3 | 0 | 0 | 3 | OE |
| 18MCAOE02 | Basics of Java Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE03 | C# and Dot Net Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE04 | Python Programming | 3 | 0 | 0 | 3 | OE |
| 18MCAOE05 | Data Mining and Warehousing | 3 | 0 | 0 | 3 | OE |
| 18MCAOE06 | Natural Language Processing | 3 | 0 | 0 | 3 | OE |
| 18MCAOE07 | Social Network Analysis | 3 | 0 | 0 | 3 | OE |

* Pass is required

FC - Foundation Course, PC - Professional Core, PE - Professional Elective,
EEC - Employability Enhancement Course.

PROFESSIONAL ELECTIVES (PE)**COIMBATORE INSTITUTE OF TECHNOLOGY**

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTING**M.Sc. (Software Systems)****Curriculum from the Academic Year 2015 - 2016 and onwards****Semester I**

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--------------------------------------|---|---|---|-----------|-----|
| 15MSS11 | Technical English | 3 | 0 | 0 | 3 | HS |
| 15MSS12 | Algebra and Calculus | 3 | 2 | 0 | 4 | BS |
| 15MSS13 | Problem Solving and Programming in C | 3 | 2 | 0 | 4 | PC |
| 15MSS14 | Basics of Information Systems | 3 | 0 | 0 | 3 | ES |
| 15MSS15 | Digital Electronics | 3 | 0 | 0 | 3 | ES |
| 15MSS16 | Programming Laboratory in C | 0 | 0 | 4 | 2 | PC |
| 15MSS17 | Digital Electronics Laboratory | 0 | 0 | 4 | 2 | ES |
| 15MSS18 | Computing Laboratory | 0 | 0 | 4 | 2 | BS |
| 15MSS19 | English Language Laboratory | 0 | 0 | 2 | 1 | HS |
| | TOTAL CREDITS | | | | 24 | |

Semester II

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| | Language Elective | 3 | 0 | 0 | 3 | HS |
| 15MSS21 | Probability and Statistics | 3 | 2 | 0 | 4 | BS |
| 15MSS22 | Fundamentals of Web Technology | 3 | 0 | 0 | 3 | PC |
| 15MSS23 | Data Structures and Algorithms | 3 | 2 | 0 | 4 | PC |
| 15MSS24 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| 15MSS25 | Data Structures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS26 | Object Oriented Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS27 | Scripting Laboratory | 0 | 0 | 4 | 2 | PC |
| | TOTAL CREDITS | | | | 23 | |

Semester III

| PROFESSION Course Code | ELECTIVES (PE) Course Name | L | T | P | C | CAT |
|---------------------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS31 | Discrete Mathematical Structures | 3 | 2 | 0 | 4 | BS |
| 15MSS32 | Computer Architecture | 3 | 0 | 0 | 3 | PC |
| 15MSS33 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| 15MSS34 | Advanced Data Structures and Algorithms | 3 | 0 | 0 | 3 | PC |
| 15MSS35 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 15MSS36 | Advanced Datastructures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS37 | Visual Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS38 | Operating Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS49 | Communication Skills & Personality Development* | | | | | EEC |
| | TOTAL CREDITS | | | | 22 | |

* A pass is required

Semester IV

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS41 | Resource Management Techniques | 3 | 2 | 0 | 4 | BS |
| 15MSS42 | Theory of Computing | 3 | 0 | 0 | 3 | PC |
| 15MSS43 | Microprocessors and Assembly Language Programming | 3 | 0 | 0 | 3 | PC |
| 15MSS44 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 15MSS45 | Java Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 15MSS46 | Microprocessors Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS47 | Database Management Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS48 | Java Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS49 | Communication Skills & Personality Development* | | | | | EEC |
| | TOTAL CREDITS | | | | 22 | |

* A pass is required

Semester V

| PROFESSION Course Code | ELECTIVES (PE) Course Name | L | T | P | C | CAT |
|---------------------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS51 | Computational Intelligence | 3 | 0 | 0 | 3 | PC |
| 15MSS52 | Object Oriented Software Engineering | 3 | 0 | 0 | 3 | PC |
| 15MSS53 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| | Elective - I | 3 | 0 | 0 | 3 | PE |
| | Elective - II | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 15MSS54 | Object Oriented Software Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS55 | Network Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - I | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 22 | |

Semester VI

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS61 | Software Architecture | 3 | 0 | 0 | 3 | PC |
| 15MSS62 | Mobile Computing | 3 | 0 | 0 | 3 | PC |
| 15MSS63 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PC |
| | Elective - III | 3 | 0 | 0 | 3 | PE |
| | Elective- IV | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 15MSS64 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS65 | Software Testing Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - II | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 23 | |

Semester VII

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|--------------------------------|---|---|---|-----------|-----|
| 15MSS71 | Project Work and Viva Voce - I | 0 | 0 | 0 | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |

Semester VIII

| PROFESSION Course Code | ELECTIVES (PE) Course Name | L | T | P | C | CAT |
|---------------------------|-------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS81 | Software Project Management | 3 | 0 | 0 | 3 | PC |
| 15MSS82 | Internet of Things | 3 | 0 | 0 | 3 | PC |
| | Elective - V | 3 | 0 | 0 | 3 | PE |
| | Elective - VI | 3 | 0 | 0 | 3 | PE |
| | Elective - VII | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 15MSS83 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - III | 0 | 0 | 4 | 2 | PE |
| | Elective Laboratory - IV | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 21 | |

Semester IX

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------|---|---|---|-----------|-----|
| | THEORY | | | | | |
| 15MSS91 | Information Security | 3 | 0 | 0 | 3 | PC |
| 15MSS92 | Professional Ethics | 3 | 0 | 0 | 3 | EEC |
| | Elective - VIII | 3 | 0 | 0 | 3 | PE |
| | Elective - IX | 3 | 0 | 0 | 3 | PE |
| | Elective - X | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 15MSS93 | Information Security Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - V | 0 | 0 | 4 | 2 | PE |
| | Elective Laboratory - VI | 0 | 0 | 4 | 2 | PE |
| | TOTAL CREDITS | | | | 21 | |

Semester X

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---------------------------------|---|---|---|------------|-----|
| 15MSS101 | Project Work and Viva Voce - II | 0 | 0 | 0 | 18 | EEC |
| | TOTAL CREDITS | | | | 18 | |
| | GRAND TOTAL OF CREDITS | | | | 215 | |

PROFESSIONAL ELECTIVES

| PROFESSIONAL ELECTIVES (PE) Course Code | Course Name | L | T | P | C | CAT |
|---|--|---|---|---|---|-----|
| GENERAL STREAM | | | | | | |
| 15MSSE01 | Software User Interface Design | 3 | 0 | 0 | 3 | PE |
| 15MSSE02 | Software Language Engineering | 3 | 0 | 0 | 3 | PE |
| 15MSSE03 | Enterprise Application Development | 3 | 0 | 0 | 3 | PE |
| 15MSSE04 | Data Centric Computing | 3 | 0 | 0 | 3 | PE |
| 15MSSE05 | Agile Process Models | 3 | 0 | 0 | 3 | PE |
| 15MSSE06 | Software Requirements Engineering | 3 | 0 | 0 | 3 | PE |
| 15MSSE07 | Software Reliability | 3 | 0 | 0 | 3 | PE |
| 15MSSE08 | Open Source Software Development | 3 | 0 | 0 | 3 | PE |
| 15MSSE09 | Graphics and Multimedia Technologies | 3 | 0 | 0 | 3 | PE |
| 15MSSE10 | IT infrastructure Management | 3 | 0 | 0 | 3 | PE |
| 15MSSE11 | Bio-Informatics | 3 | 0 | 0 | 3 | PE |
| 15MSSE12 | Accounting and Financial Management | 3 | 0 | 0 | 3 | PE |
| 15MSSE13 | Geographic Information System | 3 | 0 | 0 | 3 | PE |
| 15MSSE14 | Design Thinking | 3 | 0 | 0 | 3 | PE |
| 15MSSE15 | Business Process Management | 3 | 0 | 0 | 3 | PE |
| 15MSSE16 | Human Resource Management | 3 | 0 | 0 | 3 | PE |
| DISTRIBUTED AND NETWORKED SYSTEMS STREAM | | | | | | |
| 15MSSE17 | Internetworking Protocols | 3 | 0 | 0 | 3 | PE |
| 15MSSE18 | Distributed Computing | 3 | 0 | 0 | 3 | PE |
| 15MSSE19 | SOA and Web Services | 3 | 0 | 0 | 3 | PE |
| 15MSSE20 | Cloud Computing | 3 | 0 | 0 | 3 | PE |
| 15MSSE21 | Parallel Computing | 3 | 0 | 0 | 3 | PE |
| 15MSSE22 | Software Defined Networks | 3 | 0 | 0 | 3 | PE |
| 15MSSE23 | Autonomic Computing | 3 | 0 | 0 | 3 | PE |
| EMBEDDED AND AUTONOMOUS SYSTEM STREAM | | | | | | |
| 15MSSE24 | Real Time Systems | 3 | 0 | 0 | 3 | PE |
| 15MSSE25 | Analysis and Design of Real Time Systems | 3 | 0 | 0 | 3 | PE |
| 15MSSE26 | Embedded Processors | 3 | 0 | 0 | 3 | PE |
| 15MSSE27 | Computer vision | 3 | 0 | 0 | 3 | PE |
| 15MSSE28 | Sensing and Sensors | 3 | 0 | 0 | 3 | PE |
| 15MSSE29 | Mechanics of Robotic manipulation | 3 | 0 | 0 | 3 | PE |
| DATAANALYTICS STREAM | | | | | | |
| 15MSSE30 | Advanced Database Concepts | 3 | 0 | 0 | 3 | PE |
| 15MSSE31 | Data Mining | 3 | 0 | 0 | 3 | PE |
| 15MSSE32 | Big Data Analytics | 3 | 0 | 0 | 3 | PE |
| 15MSSE33 | Business Intelligence | 3 | 0 | 0 | 3 | PE |
| 15MSSE34 | Machine Learning | 3 | 0 | 0 | 3 | PE |

PROFESSIONAL ELECTIVE - LABORATORIES

| PROFESSIONAL ELECTIVES (PE) Course Code | Course Name | L | T | P | C | CAT |
|--|---|---|---|---|---|-----|
| GENERAL STREAM | | | | | | |
| 15MSSL01 | Software Language Engineering Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL02 | Enterprise Application Development Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL03 | Graphics and Multimedia Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL04 | Accounting Software Laboratory | 0 | 0 | 4 | 2 | PE |
| DISTRIBUTED AND NETWORKED SYSTEMS | | | | | | |
| 15MSSL05 | Web Services Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL06 | Cloud Computing Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL07 | Parallel Computing Laboratory | 0 | 0 | 4 | 2 | PE |
| EMBEDDED AND AUTONOMOUS SYSTEMS | | | | | | |
| 15MSSL08 | Image Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL09 | Real-Time Embedded System Laboratory | 0 | 0 | 4 | 2 | PE |
| DATAANALYTICS | | | | | | |
| 15MSSL10 | Business Intelligence Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL11 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL12 | Big Data Analytics Laboratory | 0 | 0 | 4 | 2 | PE |

LANGUAGE ELECTIVES

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|----------------------|---|---|---|---|-----|
| 15MSSLE01 | Professional English | 3 | 0 | 0 | 3 | HS |
| 15FY22F | Basic French | 3 | 0 | 0 | 3 | HS |
| 15FY22G | Basic German | 3 | 0 | 0 | 3 | HS |

HUMANTIES AND SOCIAL SCIENCES

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|-----------------------------|---|---|---|---|-----|
| 15MSS11 | Technical English | 3 | 0 | 0 | 3 | HS |
| 15MSS19 | English Language Laboratory | 0 | 0 | 2 | 1 | HS |
| | Language Elective | 0 | 0 | 0 | 3 | HS |

BASIC SCIENCES

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|----------------------------------|---|---|---|---|-----|
| 15MSS12 | Algebra and Calculus | 3 | 2 | 0 | 4 | BS |
| 15MSS18 | Computing Lab | 0 | 0 | 4 | 2 | BS |
| 15MSS21 | Probability and Statistics | 3 | 0 | 2 | 4 | BS |
| 15MSS31 | Discrete Mathematical Structures | 3 | 2 | 0 | 4 | BS |
| 15MSS41 | Resource Management Techniques | 3 | 2 | 0 | 4 | BS |

ENGINEERING SCIENCE

| PROFESSION Course Code | ELECTIVES (PE) Course Name | L | T | P | C | CAT |
|---------------------------|--------------------------------|---|---|---|---|-----|
| 15MSS14 | Basics of Information Systems | 3 | 0 | 0 | 3 | ES |
| 15MSS15 | Digital Electronics | 3 | 0 | 0 | 3 | ES |
| 15MSS17 | Digital Electronics Laboratory | 0 | 0 | 4 | 2 | ES |

PROFESSIONAL CORE

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|---|-----|
| | THEORY | | | | | |
| 15MSS13 | Problem Solving and Programming in C | 3 | 2 | 0 | 4 | PC |
| 15MSS22 | Fundamentals of Web Technology | 3 | 0 | 0 | 3 | PC |
| 15MSS23 | Data Structures and Algorithms | 3 | 2 | 0 | 4 | PC |
| 15MSS24 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| 15MSS32 | Computer Architecture | 3 | 0 | 0 | 3 | PC |
| 15MSS33 | Operating Systems | 3 | 0 | 0 | 3 | PC |
| 15MSS34 | Advanced Data Structures and Algorithms | 3 | 0 | 0 | 3 | PC |
| 15MSS35 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| 15MSS42 | Theory of Computing | 3 | 0 | 0 | 3 | PC |
| 15MSS43 | Microprocessors and Assembly Language Programming | 3 | 0 | 0 | 3 | PC |
| 15MSS44 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 15MSS45 | Java Programming | 3 | 0 | 0 | 3 | PC |
| 15MSS51 | Computational Intelligence | 3 | 0 | 0 | 3 | PC |
| 15MSS52 | Object Oriented Software Engineering | 3 | 0 | 0 | 3 | PC |
| 15MSS53 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| 15MSS61 | Software Architecture | 3 | 0 | 0 | 3 | PC |
| 15MSS62 | Mobile Computing | 3 | 0 | 0 | 3 | PC |
| 15MSS63 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PC |
| 15MSS81 | Software Project Management | | | | | |
| 15MSS82 | Internet of Things | 3 | 0 | 0 | 3 | PC |
| 15MSS91 | Information Security | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 15MSS16 | Programming Laboratory in C | 0 | 0 | 4 | 2 | PC |
| 15MSS25 | Data Structures and Algorithms Lab | 0 | 0 | 4 | 2 | PC |
| 15MSS26 | Object Oriented Programming Lab | 0 | 0 | 4 | 2 | PC |
| 15MSS27 | Scripting Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS36 | Advanced Datastructures and Algorithms Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS37 | Visual Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS38 | Operating Systems Laboratory | 0 | 0 | 4 | 2 | PC |

| PROFESSIONAL ELECTIVES (PE) | | | | | | |
|------------------------------------|---|---|---|---|---|-----|
| Course Code | Course Name | L | T | P | C | CAT |
| 15MSS46 | Microprocessors Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS47 | Database Management Systems Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS48 | Java Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS54 | Object Oriented Software Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS55 | Network Programming Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS64 | Mobile Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS65 | Software Testing Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS83 | Internet of Things Laboratory | 0 | 0 | 4 | 2 | PC |
| 15MSS93 | Information Security Laboratory | 0 | 0 | 4 | 2 | PC |

EMPLOYABILITY ENHANCEMENT COURSE

| Course Code | Course Name | L | T | P | C | CAT |
|-------------|---|---|---|---|----|-----|
| 15MSS49 | Communication Skills & Personality Development* | | | | | EEC |
| 15MSS71 | Project Work and Viva Voce - I | 0 | 0 | 0 | 18 | EEC |
| 15MSS92 | Professional Ethics | 3 | 0 | 0 | 3 | EEC |
| 15MSS101 | Project Work and Viva Voce - II | 0 | 0 | 0 | 18 | EEC |

CAT - Category, BS - Basic Sciences, HS - Humanities and Social Sciences,
 ES - Engineering Sciences, PC - Professional Core, PE - Professional
 Elective,EEC - Employability Enhancement Course, MC - Mandatory Course

PROFESSIONAL ELECTIVES (PE)**COIMBATORE INSTITUTE OF TECHNOLOGY**

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTING**M.Sc. DECISION AND COMPUTING SCIENCES**

Curriculum from the Academic Year 2017 - 2018 onwards

Semester I

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC11 | Technical English | 3 | 0 | 0 | 3 | HS |
| 17MDC12 | Applied Algebra and Calculus | 3 | 2 | 0 | 4 | BS |
| 17MDC13 | Basic Statistical Methods | 3 | 2 | 0 | 4 | BS |
| 17MDC14 | Human Behavior | 3 | 0 | 0 | 3 | PC |
| 17MDC15 | Programming in C | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 17MDC16 | Computing Laboratory I (Algebra, Calculus and Statistics in SciLab and Excel) | 0 | 0 | 4 | 2 | PC |
| 17MDC17 | Programming Laboratory in C | 0 | 0 | 4 | 2 | PC |
| 17MDC18 | English Language Laboratory | 0 | 0 | 2 | 1 | EEC / HS |
| | Total Credits | | | | 22 | |

Semester II

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| | THEORY | | | | | |
| | Language Elective | 3 | 0 | 0 | 3 | HS |
| 17MDC21 | Probability and Applications | 3 | 2 | 0 | 4 | BS |
| 17MDC22 | Principles of Management | 4 | 0 | 0 | 4 | PC |
| 17MDC23 | Web Technology | 3 | 0 | 0 | 3 | PC |
| 17MDC24 | Data Structures and Algorithms | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 17MDC25 | Computing Laboratory II (Probability in Excel and SciLab) | 0 | 0 | 4 | 2 | PC |
| 17MDC26 | Web Technology Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC27 | Data Structures Laboratory using Python | 0 | 0 | 4 | 2 | PC |

| | | | | | |
|-----------------------------|--|--|--|----|--|
| PROFESSIONAL ELECTIVES (PE) | | | | 23 | |
| Total Credits | | | | | |

PROFESSIONAL ELECTIVES (PE)

Semester III

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC31 | Applied Statistics for Business Decisions | 3 | 2 | 0 | 4 | BS |
| 17MDC32 | Financial Analysis and Reporting | 4 | 0 | 0 | 4 | PC |
| 17MDC33 | Computer Systems | 3 | 0 | 0 | 3 | PC |
| 17MDC34 | Database Management Systems | 3 | 0 | 0 | 3 | PC |
| 17MDC35 | Object Oriented Programming | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 17MDC36 | Business Statistics Laboratory using R | 0 | 0 | 4 | 2 | PC |
| 17MDC37 | Business Database Design Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC38 | Object Oriented Programming Laboratory using Java | 0 | 0 | 4 | 2 | PC |
| | Total Credits | | | | 23 | |

Semester IV

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC41 | Predictive Analytics | 3 | 0 | 0 | 3 | BS |
| 17MDC42 | Operations Research for Business | 3 | 2 | 0 | 4 | BS |
| 17MDC43 | Corporate Finance | 3 | 0 | 0 | 3 | PC |
| 17MDC44 | Production and Operations Management | 3 | 0 | 0 | 3 | PC |
| 17MDC45 | Computer Networks | 3 | 0 | 0 | 3 | PC |
| | PRACTICALS | | | | | |
| 17MDC46 | Predictive Analytics Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC47 | Business Process Optimization Laboratory (OR & POM) | 0 | 0 | 4 | 2 | PC |
| 17MDC48 | Financial Analysis Laboratory (Spreadsheets and Python) | 0 | 0 | 4 | 2 | PC |
| 17MDC49 | Managerial Communication Skills* | | | | | EEC |
| | Total Credits | | | | 22 | |

PROFESSIONAL ELECTIVES (PE)

Semester V

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC51 | Organisational Behavior | 3 | 0 | 0 | 3 | PC |
| 17MDC52 | Digital Marketing | 3 | 0 | 0 | 3 | PC |
| 17MDC53 | Software Engineering | 3 | 0 | 0 | 3 | PC |
| 17MDC54 | Enterprise Resource Planning | 3 | 0 | 0 | 3 | PC |
| | Elective I | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 17MDC55 | Human Resources System Development Laboratory (Python,R studio) | 0 | 0 | 4 | 2 | PC |
| 17MDC56 | Digital Marketing Design Laboratory (R Studio, Visualisation, Graphical) | 0 | 0 | 4 | 2 | PC |
| 17MDC57 | Enterprise Application Development Laboratory (J2EE) | 0 | 0 | 4 | 2 | PC |
| 17MDC58 | Personality Development* | | | | | EEC |
| | Total Credits | | | | 21 | |

Semester VI

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC61 | Economic Foundations of Business | 3 | 0 | 0 | 3 | PC |
| 17MDC62 | Computational Intelligence | 3 | 0 | 0 | 3 | PC |
| 17MDC63 | Mobile and Cloud Computing | 3 | 0 | 0 | 3 | PC |
| 17MDC64 | Data Warehousing and Mining | 3 | 0 | 0 | 3 | PC |
| | Elective - II | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 17MDC65 | Mobile and Cloud Application Development Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC66 | Data Mining Laboratory | 0 | 0 | 4 | 2 | PC |
| | Elective Laboratory - I | 0 | 0 | 4 | 2 | EEC |
| | Total Credits | | | | 21 | |

Semester VII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|------------------------------|---|---|---|-----------|----------|
| 17MDC71 | Project Work and Viva Voce-I | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |

PROFESSIONAL ELECTIVES (PE)
Semester VIII

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC81 | Modeling and Simulation | 3 | 0 | 0 | 3 | PC |
| 17MDC82 | Decision Support Systems | 3 | 0 | 0 | 3 | PC |
| 17MDC83 | Game Theory and Decision Analysis | 3 | 0 | 0 | 3 | PC |
| | Elective - III | 3 | 0 | 0 | 3 | PE |
| | Elective - IV | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 17MDC84 | Business Intelligence Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC85 | Decision Analysis Laboratory (Game Theory) | 0 | 0 | 4 | 2 | EEC |
| 17MDC86 | Entrepreneurship Development* | | | | | EEC |
| | Elective - Laboratory II | 0 | 0 | 4 | 2 | PC |
| | Total Credits | | | | 21 | |

Semester IX

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|-----------|----------|
| | THEORY | | | | | |
| 17MDC91 | Principles of Information Security | 3 | 0 | 0 | 3 | PC |
| 17MDC92 | Project Management | 3 | 0 | 0 | 3 | PC |
| 17MDC93 | Human Computer Interface and Interaction | 3 | 0 | 0 | 3 | PC |
| | Elective - V | 3 | 0 | 0 | 3 | PE |
| | Elective - VI | 3 | 0 | 0 | 3 | PE |
| | PRACTICALS | | | | | |
| 17MDC94 | Human Computer Interface and Interaction Laboratory | 0 | 0 | 4 | 2 | PC |
| 17MDC95 | Minor Project - Decision Tool Development | 0 | 0 | 8 | 4 | EEC |
| 17MDC96 | Business Ethics * | | | | | EEC |
| | Total Credits | | | | 21 | |

Semester X

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--------------------------------|---|---|---|------------|----------|
| 17MDC101 | Project Work and Viva Voce- II | 0 | 0 | 0 | 18 | EEC |
| | Total Credits | | | | 18 | |
| | Grand Total of Credits | | | | 210 | |

*Pass is required

**PROFESSIONAL ELECTIVES (PE)
PROFESSIONAL ELECTIVES - THEORY COURSES**

| Course Code | Course Name | L | T | P | C | Category |
|-----------------------------------|--|---|---|---|---|----------|
| MANAGEMENT STREAM | | | | | | |
| Finance | | | | | | |
| 17MDCE01 | Security Analysis and Portfolio Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE02 | Equity Valuation | 3 | 0 | 0 | 3 | PE |
| 17MDCE03 | Derivatives and Risk Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE04 | Credit Risk Analytics and Management | 3 | 0 | 0 | 3 | PE |
| Marketing | | | | | | |
| 17MDCE11 | Consumer Behavior | 3 | 0 | 0 | 3 | PE |
| 17MDCE12 | Services Marketing | 3 | 0 | 0 | 3 | PE |
| 17MDCE13 | Customer Relationship Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE14 | Brand Management | 3 | 0 | 0 | 3 | PE |
| Human Resources | | | | | | |
| 17MDCE21 | Strategic Human Resource Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE22 | Organisational Development | 3 | 0 | 0 | 3 | PE |
| 17MDCE23 | Performance Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE24 | Compensation Management | 3 | 0 | 0 | 3 | PE |
| Operations & Logistics | | | | | | |
| 17MDCE31 | Total Quality Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE32 | Logistics Strategy and Planning | 3 | 0 | 0 | 3 | PE |
| 17MDCE33 | Supply Chain Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE34 | Warehouse and Distribution Management | 3 | 0 | 0 | 3 | PE |
| General Management | | | | | | |
| 17MDCE41 | Business Environment | 3 | 0 | 0 | 3 | PE |
| 17MDCE42 | Legal Aspects of Business | 3 | 0 | 0 | 3 | PE |
| 17MDCE43 | Information Technology for Managers | 3 | 0 | 0 | 3 | PE |
| 17MDCE44 | Direct and Indirect Tax | 3 | 0 | 0 | 3 | PE |
| 17MDCE45 | Technology and Innovation Management | 3 | 0 | 0 | 3 | PE |
| 17MDCE46 | Business Process Management | 3 | 0 | 0 | 3 | PE |
| COMPUTER SCIENCE STREAM | | | | | | |
| Data Analytics | | | | | | |
| 15MSSE34 | Machine Learning | 3 | 0 | 0 | 3 | PE |
| 16MDSE53 | Big Data Architecture | 3 | 0 | 0 | 3 | PE |
| 16MDSE2 | Web Mining | 3 | 0 | 0 | 3 | PE |
| 16MDS83 | Data Visualization | 3 | 0 | 0 | 3 | PE |
| 16MDSE6 | Information Security Analytics | 3 | 0 | 0 | 3 | PE |
| 16MDSE20 | Data Centric Computing | 3 | 0 | 0 | 3 | PE |
| 16MDSE8 | Bio-Informatics | 3 | 0 | 0 | 3 | PE |
| 16MDSE3 | Social Network Analysis | 3 | 0 | 0 | 3 | PE |

**PROFESSIONAL ELECTIVES (PE)
PROFESSIONAL ELECTIVES - THEORY COURSES**

| Course Code | Course Name | L | T | P | C | Category |
|-------------|---|---|---|---|---|----------|
| 16MDSE4 | Geographical Information Analysis | 3 | 0 | 0 | 3 | PE |
| 16MDSE11 | Econometric Analysis | 3 | 0 | 0 | 3 | PE |
| 16MDS92 | Deep Learning | 3 | 0 | 0 | 3 | PE |
| | Distributed and Network Systems | | | | | |
| 15MSSE19 | SOA and Web Services | 3 | 0 | 0 | 3 | PE |
| 15MSSE35 | BlockChain Technology | 3 | 0 | 0 | 3 | PE |
| 15MSSE17 | Internetworking Protocols | 3 | 0 | 0 | 3 | PE |
| 17MDCE51 | Distributed Systems | 3 | 0 | 0 | 3 | PE |
| | Software Systems | | | | | |
| 15MSSE09 | Graphics and Multimedia Technologies | 3 | 0 | 0 | 3 | PE |
| 15MSS63 | Software Testing and Quality Assurance | 3 | 0 | 0 | 3 | PE |
| 16MDSE7 | Image Processing | 3 | 0 | 0 | 3 | PE |
| 15MSSE06 | Software Requirements Engineering | 3 | 0 | 0 | 3 | PE |
| 15MSSE07 | Software Reliability | 3 | 0 | 0 | 3 | PE |
| 15MSSE08 | Open Source Software Development | 3 | 0 | 0 | 3 | PE |
| 16MDSE25 | Software Architecture and Design Patterns | 3 | 0 | 0 | 3 | PE |
| 15MSSE24 | Real Time Systems | 3 | 0 | 0 | 3 | PE |
| 15MSSE25 | Analysis and Design of Real Time Systems | 3 | 0 | 0 | 3 | PE |
| 15MSSE27 | Computer vision | 3 | 0 | 0 | 3 | PE |
| 15MSSE14 | Design Thinking | 3 | 0 | 0 | 3 | PE |
| 15MSSE36 | Advanced Web Technology | 3 | 0 | 0 | 3 | PE |

PROFESSIONAL ELECTIVES - LABORATORY COURSES

| Course Code | Course Name | L | T | P | C | Category |
|-------------|--|---|---|---|---|----------|
| 17MDCEL1 | Minor Project in Business / Data Analytics | 0 | 0 | 4 | 2 | PE |
| 17MDCEL2 | Modeling and Simulation Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL08 | Image Processing Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL03 | Graphics and Multimedia Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSSL13 | Advanced Web Technology Laboratory | 0 | 0 | 4 | 2 | PE |
| 16MDS55 | Machine Learning Laboratory | 0 | 0 | 4 | 2 | PE |
| 16MDS56 | Big Data Modeling Laboratory | 0 | 0 | 4 | 2 | PE |
| 16MDS85 | Data Visualization Laboratory | 0 | 0 | 4 | 2 | PE |
| 16MDS94 | Deep Learning Laboratory | 0 | 0 | 4 | 2 | PE |
| 15MSS65 | Software Testing Laboratory | 0 | 0 | 4 | 2 | PE |
| 16MDSEL2 | Web Mining Laboratory | 0 | 0 | 4 | 2 | PE |

LANGUAGE ELECTIVE

| Course Code | Course Name | L | T | P | C | Category |
|--------------------|----------------------|----------|----------|----------|----------|-----------------|
| 16MDSLE01 | Professional English | 3 | 0 | 0 | 3 | HS |
| 16FY22F | Basic French | 3 | 0 | 0 | 3 | HS |
| 16FY22G | Basic German | 3 | 0 | 0 | 3 | HS |

* **Pass is required**

FC - Foundation Course, PC - Professional Core, PE - Professional Elective, EEC - Employability Enhancement Course.

NOTE :

- Equal weightage for Decision Science and Computer Science is given in the design of the curriculum, which complement each other to address the industry needs.
- Students of this Programme can specialize in Decision Science and/or Computing Science by choosing interested elective courses given under different streams.