# ACADEMIC CURRICULA

# UNDERGRADUATE/ INTEGRATED POST GRADUATE DEGREE PROGRAMMES

(With exit option of Diploma)

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 1

(Revised on July 2023)


**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**(Deemed to be University u/s 3 of UGC Act, 1956)**

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

# 32. B.Tech. in Electronics and Communication Engineering with Specialization in Data Science

## 32. (a) Mission of the Department

| | |
|---|---|
| Mission Stmt – 1 | *Build an educational process that is well suited to local needs as well as satisfies the national and international accreditation requirements.* |
| Mission Stmt – 2 | *Attract the qualified professionals and retain them by building an environment that fosters work freedom and empowerment.* |
| Mission Stmt – 3 | *With the right talent pool, create knowledge and disseminate, get involved in collaborative research with reputed universities and produce competent graduands.* |

## 32. (b) Program Educational Objectives (PEO)

| | |
|---|---|
| PEO – 1 | *Apply the acquired knowledge and skills in solving real-world engineering problems, considering national/global and societal issues such as health, environment, and safety.* |
| PEO – 2 | *Design data analytics model for optimized solutions, which are economically feasible and socially relevant.* |
| PEO – 3 | *Develop an attitude toward pursuing knowledge and advanced education for sustained career advancement to adapt to emerging fields.* |
| PEO – 4 | *Demonstrate leadership qualities and effective communication skills to work in a team of enterprising people in a multidisciplinary and multicultural environment with strong adherence to professional ethics.* |

## 32. (c) Mission of the Department to Program Educational Objectives (PEO) Mapping

| | Mission Stmt. - 1 | Mission Stmt. - 2 | Mission Stmt. - 3 |
|---|---|---|---|
| PEO - 1 | *1* | *2* | *3* |
| PEO - 2 | *3* | *3* | *3* |
| PEO - 3 | *2* | *1* | *3* |
| PEO - 4 | *3* | *3* | *3* |

3 – High Correlation, 2 – Medium Correlation, 1 – Low Correlation

## 32. (d) Mapping Program Educational Objectives (PEO) to Program Outcomes (PO)

| | Program Outcomes (PO) | | | | | | | | | | | | Program Specific Outcomes (PSO) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | |
| | Engineering Knowledge | Problem Analysis | Design/development of solutions | Conduct investigations of complex problems | Modern Tool Usage | The engineer and society | Environment & Sustainability | Ethics | Individual & Team Work | Communication | Project Mgt. & Finance | Life Long Learning | PSO-1 | PSO-2 | PSO-3 |
| PEO - 1 | *3* | *3* | - | - | - | *3* | *3* | *2* | - | - | - | - | *3* | - | - |
| PEO - 2 | - | - | *3* | *3* | *3* | *3* | - | - | *2* | - | *3* | - | - | *3* | - |
| PEO - 3 | - | - | - | *3* | *3* | - | *2* | *2* | - | *2* | - | *3* | - | *2* | *3* |
| PEO - 4 | - | - | - | - | - | - | - | *3* | *3* | *3* | *3* | - | - | - | *3* |

3 – High Correlation, 2 – Medium Correlation, 1 – Low Correlation

## PSO – Program Specific Outcomes (PSO)

| | |
|---|---|
| PSO - 1 | *Problem Solving Skills: Should be able to identify and deploy data science and engineering components and provide efficient solutions in solving real-world problems in medicine, science, industry, and numerous other fields.* |
| PSO - 2 | *Professional Skills: Should be able to develop new tools and methods in data collection, integration, cleansing, and representation for real-time data processing.* |
| PSO - 3 | *Successful Career and Entrepreneurship: Create technologically innovative products, Interpret / analyze multi-disciplinary data and propose optimal solution through data analytics.* |

## 32. (e) Program Structure: B.Tech. in Electronics and Communication Engineering with Specialization in Data Science

**Humanities & Social Sciences including Management Courses (H)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21LEH101T | Communicative English | 2 | 1 | 0 | 3 |
| 21LEH102T | Chinese | 2 | 1 | 0 | 3 |
| 21LEH103T | French | | | | |
| 21LEH104T | German | | | | |
| 21LEH105T | Japanese | | | | |
| 21LEH106T | Korean | | | | |
| 21LEH107T | Spanish | | | | |
| 21GNH101J | Philosophy of Engineering | 1 | 0 | 2 | 2 |
| 21PDH201T | Social Engineering | 2 | 0 | 0 | 2 |
| 21GNH401T | Behavioral Psychology | 2 | 1 | 0 | 3 |
| | | | | Total Credits | 13 |

**Basic Science Courses (B)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21PYB101J | Physics: Electromagnetic Theory, Quantum Mechanics, Waves and Optics | 3 | 1 | 2 | 5 |
| 21CYB101J | Chemistry | 3 | 1 | 2 | 5 |
| 21MAB101T | Calculus and Linear Algebra | 3 | 1 | 0 | 4 |
| 21MAB102T | Advanced Calculus and Complex Analysis | 3 | 1 | 0 | 4 |
| 21MAB201T | Transforms and Boundary Value Problems | 3 | 1 | 0 | 4 |
| 21MAB203T | Probability and Stochastic Processes | 3 | 1 | 0 | 4 |
| 21MAB302T | Discrete Mathematics | 3 | 1 | 0 | 4 |
| 21BTB103T | Biology | 2 | 0 | 0 | 2 |
| | | | | Total Credits | 32 |

**Engineering Science Courses (S)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21MES101L | Basic Civil and Mechanical Workshop | 0 | 0 | 4 | 2 |
| 21MES102L | Engineering Graphics and Design | 0 | 0 | 4 | 2 |
| 21EES101T | Electrical and Electronics Engineering | 3 | 1 | 0 | 4 |
| 21CSS101J | Programming for Problem Solving | 3 | 0 | 2 | 4 |
| 21CSS201T | Computer Organization and Architecture | 3 | 1 | 0 | 4 |
| 21DCS201P | Design Thinking and Methodology | 1 | 2 | 0 | 3 |
| 21CSS303T | Data Science | 2 | 0 | 0 | 2 |
| | | | | Total Credits | 21 |

**Professional Core Courses (C)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21ECC101J | Electronic System and PCB Design | 2 | 0 | 2 | 3 |
| 21ECC201T | Solid State Devices | 3 | 0 | 0 | 3 |
| 21ECC202T | Analog and Linear Electronic Circuits | 3 | 0 | 0 | 3 |
| 21ECC203T | Digital Logic Design | 3 | 0 | 0 | 3 |
| 21ECC204T | Signal Processing | 3 | 0 | 0 | 3 |
| 21ECC205T | Electromagnetic Theory and Interference | 3 | 0 | 0 | 3 |
| 21ECC211L | Devices and Digital IC Laboratory | 0 | 0 | 4 | 2 |
| 21ECC222L | Analog and Linear Electronic Circuits Laboratory | 0 | 0 | 4 | 2 |
| 21ECC301P | Microprocessor, Microcontroller, and Interfacing Techniques | 3 | 1 | 0 | 4 |
| 21ECC302T | Analog and Digital Communication | 3 | 0 | 0 | 3 |
| 21ECC303T | VLSI Design and Technology | 3 | 0 | 0 | 3 |
| 21ECC304T | Microwave and Optical Communication | 3 | 0 | 0 | 3 |
| 21ECC311L | VLSI Design Laboratory | 0 | 0 | 4 | 2 |
| 21ECC322L | Communication Laboratory | 0 | 0 | 4 | 2 |
| 21ECC401T | Wireless Communication and Antenna Systems | 3 | 0 | 0 | 3 |
| 21ECC402P | Computer Communication and Network Security | 2 | 1 | 0 | 3 |
| 21CSC206T | Artificial Intelligence | 2 | 1 | 0 | 3 |
| | | | | Total Credits | 48 |

**Non Credit Courses (M)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21PDM101L | Professional Skills and Practices | 0 | 0 | 2 | 0 |
| 21PDM102L | General Aptitude | 0 | 0 | 2 | 0 |
| 21PDM201L | Verbal Reasoning | 0 | 0 | 2 | 0 |
| 21PDM202L | Critical and Creative Thinking Skills | 0 | 0 | 2 | 0 |
| 21PDM301L | Analytical and Logical Thinking Skills | 0 | 0 | 2 | 0 |
| 21PDM302L | Employability Skills and Practices | 0 | 0 | 2 | 0 |
| 21CYM101T | Environmental Science | 1 | 0 | 0 | 0 |
| 21LEM101T | Constitution of India | 1 | 0 | 0 | 0 |
| 21LEM102T | Universal Human Values – Introduction | 1 | 0 | 0 | 0 |
| 21LEM201T | Professional Ethics | 1 | 0 | 0 | 0 |
| 21LEM202T | Universal Human Values-II: Understanding Harmony and Ethical Human Conduct | 2 | 1 | 0 | 3 |
| 21LEM301T | Indian Art Form | 1 | 0 | 0 | 0 |
| 21LEM302T | Indian Traditional Knowledge | 1 | 0 | 0 | 0 |
| 21GNM101L | Physical and Mental Health using Yoga | 0 | 0 | 2 | 0 |
| 21GNM102L | National Service Scheme | | | | |
| 21GNM103L | National Cadet Corps | | | | |
| 21GNM104L | National Sports Organization | | | | |
| | | | | Total Credits | 03 |

**Open Elective Courses (O)**
*(Any 3 courses)*

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21ECO101T | Short Range Wireless Communication | 3 | 0 | 0 | 3 |
| 21ECO102J | Electronic Circuits and Systems | 2 | 0 | 2 | 3 |
| 21ECO103T | Modern Wireless Communication Systems | 3 | 0 | 0 | 3 |
| 21ECO104J | PCB Design and Manufacturing | 2 | 0 | 2 | 3 |
| 21ECO105T | Fiber Optics and Optoelectronics | 3 | 0 | 0 | 3 |
| 21ECO106J | Embedded System Design using Arduino | 2 | 0 | 2 | 3 |
| 21ECO107J | Embedded System Design using Raspberry Pi | 2 | 0 | 2 | 3 |
| 21ECO108J | 3D Printing Hardware and Software | 2 | 0 | 2 | 3 |
| | | | | Total Credits | 09 |

**Project Work, Seminar, Internship in Industry / Higher Technical Institutions (P)**

| Course Code | Course Title | Hours / Week | | | |
|---|---|---|---|---|---|
| | | L | T | P | C |
| 21GNP301L | Community Connect | 0 | 0 | 2 | 1 |
| 21ECP302L | Project | 0 | 0 | 6 | 3 |
| 21ECP303T | MOOC | 3 | 0 | 0 | |
| 21ECP401L | Major Project | 0 | 0 | 30 | 15 |
| 21ECP402L | Major Project | 0 | 0 | 20 | 10 |
| 21ECP403L | Internship# | 0 | 0 | 10 | 5 |
| | | | | Total Credits | 19 |

| Professional Elective Courses (E) (Any 6 Courses) | | | | | |
|---|---|---|---|---|---|
| Course Code | Course Title | Hours/ Week | | | C |
| | | L | T | P | |
| 21ECE270T | Statistics for Data Science | 3 | 0 | 0 | 3 |
| 21ECE271T | Regression and Multivariate Data Analysis | 3 | 0 | 0 | 3 |
| 21ECE272T | Data Analytics Using SAS | 3 | 0 | 0 | 3 |
| 21ECE273T | Python for Data Sciences | 3 | 0 | 0 | 3 |
| 21ECE274T | Machine learning for Data Analytics | 3 | 0 | 0 | 3 |
| 21ECE275T | Tableau for Business Intelligence | 3 | 0 | 0 | 3 |
| 21ECE322T | Data Analytics using R | 3 | 0 | 0 | 3 |
| 21ECE370T | Block Chain in Data Analytics | 3 | 0 | 0 | 3 |
| 21ECE371T | Database Design and Management | 3 | 0 | 0 | 3 |
| 21ECE372T | Deep Learning for Data Analytics | 3 | 0 | 0 | 3 |
| 21ECE373T | Julia For Data Science | 3 | 0 | 0 | 3 |
| 21ECE374T | Data Pattern and Visualization | 3 | 0 | 0 | 3 |
| 21ECE375T | Data Science for Communication Networks | 3 | 0 | 0 | 3 |
| 21ECE376T | Business Data Analytics | 3 | 0 | 0 | 3 |

| Professional Elective Courses (E) | | | | | |
|---|---|---|---|---|---|
| Course Code | Course Title | Hours/ Week | | | C |
| | | L | T | P | |
| 21ECE377T | Big Data Analytics Strategies for the Smart Grid | 3 | 0 | 0 | 3 |
| 21ECE470T | Cloud and Distributed Computing for Data Analytics | 3 | 0 | 0 | 3 |
| 21ECE471T | Data Mining Techniques | 3 | 0 | 0 | 3 |
| 21ECE472T | Social Media Data Analytics | 3 | 0 | 0 | 3 |
| 21ECE473T | Data Science for IoT Engineers: A Systems Analytics Approach Media Analytics | 3 | 0 | 0 | 3 |
| 21ECE474T | Big Data Analytics Tools | 3 | 0 | 0 | 3 |
| 21ECE475T | Tools for Real-time Data Processing and Analytics | 3 | 0 | 0 | 3 |
| 21ECE476T | Data Analytics with Spark Using Python | 3 | 0 | 0 | 3 |
| 21ECE477T | Big Data and Health Care Analytics | 3 | 0 | 0 | 3 |
| | | | | Total Credits | 18 |

## 32. (f) Programme Articulation: B.Tech. in Electronics and Communication Engineering with Specialization in Data Science

| Course Code | Course Name | Program Outcomes (PO) | | | | | | | | | | | | PSO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| | | Engineering Knowledge | Problem Analysis | Design/development of solutions | Conduct investigations of complex problems | Modern Tool Usage | The engineer and society | Environment & Sustainability | Ethics | Individual & Team Work | Communication | Project Mgt. & Finance | Life Long Learning | PSO-1 | PSO-2 | PSO-3 |
| 21ECC101J | Electronic System and PCB Design | 2 | - | 3 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| 21ECC201T | Solid State Devices | 3 | 3 | - | - | 3 | - | - | - | 3 | 2 | - | 2 | 1 | 1 | - |
| 21ECC202T | Analog and Linear Electronic Circuits | 3 | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 | - | 2 |
| 21ECC203T | Digital Logic Design | 3 | 2 | 3 | - | 3 | - | - | - | - | - | - | - | 1 | - | 2 |
| 21ECC204T | Signal Processing | 3 | 2 | 3 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 21ECC205T | Electromagnetic Theory and Interference | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 | - | - | 2 |
| 21ECC211L | Devices and Digital IC Laboratory | 3 | 2 | 3 | - | 3 | - | - | - | - | - | - | - | 1 | - | 2 |
| 21ECC222L | Analog and Linear Electronic Circuits Laboratory | 3 | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 | - | 2 |
| 21ECC301P | Microprocessor, Microcontroller, and Interfacing Techniques | - | 2 | 3 | - | 3 | - | - | - | - | - | - | 2 | 1 | - | 2 |
| 21ECC302T | Analog and Digital Communication | 3 | 2 | 3 | 3 | 2 | - | - | - | - | - | - | - | 2 | 2 | 3 |
| 21ECC303T | VLSI Design and Technology | 3 | 2 | 3 | - | 3 | - | - | - | - | - | - | - | 2 | - | 2 |
| 21ECC304T | Microwave and Optical Communication | 3 | 3 | 3 | 2 | 3 | - | - | - | - | - | - | - | 2 | - | 2 |
| 21ECC311L | VLSI Design Laboratory | 3 | 2 | 3 | - | 3 | - | - | - | - | - | - | - | 2 | - | 2 |
| 21ECC322L | Communication Laboratory | 3 | 2 | 3 | 3 | 2 | - | - | - | - | - | - | - | 2 | 2 | 3 |
| 21ECC401T | Wireless Communication and Antenna Systems | 3 | 3 | 3 | 3 | - | 2 | 2 | - | - | - | - | 2 | 2 | - | 3 |
| 21ECC402P | Computer Communication and Network Security | - | - | 2 | - | 1 | 1 | 2 | - | - | - | - | 2 | - | - | 3 |
| 21ECE270T | Statistics for Data Science | 1 | 3 | - | - | 3 | - | - | - | - | - | - | - | 3 | 2 | - |
| 21ECE271T | Regression and Multivariate Data Analysis | 2 | 3 | - | 3 | 3 | - | - | - | - | - | - | - | 3 | 2 | - |
| 21ECE272T | Data Analytics Using SAS | 1 | 2 | - | - | 3 | - | - | - | - | - | - | - | 3 | 2 | - |
| 21ECE273T | Python for Data Sciences | 2 | 1 | - | - | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE274T | Machine learning for data analytics | 3 | 3 | - | 2 | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE275T | Tableau for Business Intelligence | 1 | 2 | - | - | 3 | - | - | - | - | - | - | - | 1 | 3 | - |
| 21ECE322T | Data analytics using R | 2 | 2 | - | - | 3 | - | - | - | - | - | - | - | 1 | 3 | - |
| 21ECE370T | Block chain in Data Analytics | 3 | 1 | - | - | 3 | - | - | - | - | - | - | - | - | 3 | - |
| 21ECE371T | Database Design and Management | 3 | | 2 | - | 3 | - | - | - | - | - | - | - | - | 3 | - |
| 21ECE372T | Deep Learning for Data Analytics | 3 | 3 | - | 2 | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE373T | Julia For Data Science | 2 | 2 | - | - | 3 | - | - | - | - | - | - | - | 1 | 3 | - |
| 21ECE374T | Data Pattern and Visualization | 2 | 3 | - | - | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE375T | Data Science for Communication Networks | 3 | 2 | - | - | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE376T | Business data analytics | 2 | 2 | - | - | 3 | - | - | - | - | - | - | - | 3 | 3 | - |
| 21ECE377T | Big Data Analytics Strategies for the Smart Grid | 3 | 2 | - | 2 | 3 | - | - | - | - | - | - | - | 2 | 2 | - |
| 21ECE470T | Cloud and Distributed Computing for data analytics | 2 | - | 2 | - | 3 | - | - | - | - | - | - | - | - | 3 | - |
| 21ECE471T | Data Mining Techniques | 2 | 2 | - | - | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE472T | Social Media Data Analytics | 1 | 3 | - | - | 3 | 1 | - | - | - | - | - | - | 2 | 1 | - |
| 21ECE473T | Data Science for IoT Engineers: A Systems Analytics Approach Media Analytics | 3 | 2 | - | 1 | 3 | - | - | - | - | - | - | - | 2 | 2 | - |
| 21ECE474T | Big Data analytics tools | 2 | - | - | 3 | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE475T | Tools for Real-time Data Processing and Analytics | 2 | - | - | 2 | 3 | - | - | - | - | - | - | - | - | 3 | - |
| 21ECE476T | Data Analytics with Spark Using Python | 3 | - | - | 2 | 3 | - | - | - | - | - | - | - | 2 | 3 | - |
| 21ECE477T | Big Data and Health care Analytics | 3 | - | - | 2 | 3 | - | - | - | - | - | - | - | 1 | 3 | - |
| 21GNP301L | Community Connect | | | | | | 3 | | 3 | 3 | 2 | | | | | |
| 21ECP302L | Project | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 21ECP303T | MOOC | 3 | 2 | | | | | | | | | | | 3 | | |
| 21ECP401L | Major Project | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 21ECP402L | Major Project | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 21ECP403L | Internship | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Program Average | | 2.47 | 2.26 | 2.81 | 2.29 | 2.88 | 2 | 2 | - | 3 | 2 | - | 1.8 | 1.81 | 2.52 | 2.36 |

## 32. (g) Implementation Plan: B.Tech. in Electronics and Communication Engineering with Specialization in Data Science

**Semester – I**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21LEH101T | Communicative English | 2 | 1 | 0 | 3 |
| 21MAB101T | Calculus and Linear Algebra | 3 | 1 | 0 | 4 |
| 21PYB101J | Physics: Electromagnetic Theory, Quantum Mechanics, Waves and Optics | 3 | 1 | 2 | 5 |
| 21MES102L | Engineering Graphics and Design | 0 | 0 | 4 | 2 |
| 21EES101T | Electrical and Electronics Engineering | 3 | 1 | 0 | 4 |
| 21CYM101T | Environmental Science | 1 | 0 | 0 | 0 |
| 21PDM101L | Professional Skills and Practices | 0 | 0 | 2 | 0 |
| 21LEM101T | Constitution of India | 1 | 0 | 0 | 0 |
| | | | | Total Credits | 18 |

**Semester – II**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21LEH102T | Chinese | 2 | 1 | 0 | 3 |
| 21LEH103T | French | | | | |
| 21LEH104T | German | | | | |
| 21LEH105T | Japanese | | | | |
| 21LEH106T | Korean | | | | |
| 21LEH107T | Spanish | | | | |
| 21GNH101J | Philosophy of Engineering | 1 | 0 | 2 | 2 |
| 21MAB102T | Advanced Calculus and Complex Analysis | 3 | 1 | 0 | 4 |
| 21CYB101J | Chemistry | 3 | 1 | 2 | 5 |
| 21ECC101J | Electronic System and PCB Design | 2 | 0 | 2 | 3 |
| 21CSS101J | Programming for Problem Solving | 3 | 0 | 2 | 4 |
| 21BTB103T | Biology | 2 | 0 | 0 | 2 |
| 21MES101L | Basic Civil and Mechanical Workshop | 0 | 0 | 4 | 2 |
| 21PDM102L | General Aptitude | 0 | 0 | 2 | 0 |
| 21GNM101L | Physical and Mental Health using Yoga | 0 | 0 | 2 | 0 |
| 21GNM102L | National Service Scheme | | | | |
| 21GNM103L | National Cadet Corps | | | | |
| 21GNM104L | National Sports Organization | | | | |
| | | | | Total Credits | 25 |

**Semester – III**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21MAB201T | Transforms and Boundary Value Problems | 3 | 1 | 0 | 4 |
| 21PDH201T | Social Engineering | 2 | 0 | 0 | 2 |
| 21CSS201T | Computer Organization and Architecture | 3 | 1 | 0 | 4 |
| 21ECC201T | Solid State Devices | 3 | 0 | 0 | 3 |
| 21ECC203T | Digital Logic Design | 3 | 0 | 0 | 3 |
| 21ECC205T | Electromagnetic Theory and Interference | 3 | 0 | 0 | 3 |
| 21ECC211L | Devices and Digital IC Laboratory | 0 | 0 | 4 | 2 |
| 21LEM201T | Professional Ethics | 1 | 0 | 0 | 0 |
| 21PDM201L | Verbal Reasoning | 0 | 0 | 2 | 0 |
| 21LEM202T | Universal Human Values-II: Understanding Harmony and Ethical Human Conduct | 2 | 1 | 0 | 3 |
| | | | | Total Credits | 24 |

**Semester – IV**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21MAB203T | Probability and Stochastic Processes | 3 | 1 | 0 | 4 |
| 21ECC202T | Analog and Linear Electronic Circuits | 3 | 0 | 0 | 3 |
| 21ECC204T | Signal Processing | 3 | 0 | 0 | 3 |
| 21ECC222L | Analog and Linear Electronic Circuits Laboratory | 0 | 0 | 4 | 2 |
| 21CSC206T | Artificial Intelligence | 2 | 1 | 0 | 3 |
| E | Professional Elective-I | | | | 3 |
| 21DCS201P | Design Thinking and Methodology | 1 | 2 | 0 | 3 |
| 21PDM202L | Critical and Creative Thinking Skills | 0 | 0 | 2 | 0 |
| | | | | Total Credits | 21 |

**Semester – V**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21MAB302T | Discrete Mathematics | 3 | 1 | 0 | 4 |
| 21ECC301P | Microprocessor, Microcontroller, and Interfacing Techniques | 3 | 1 | 0 | 4 |
| 21ECC303T | VLSI Design and Technology | 3 | 0 | 0 | 3 |
| 21ECC311L | VLSI Design Laboratory | 0 | 0 | 4 | 2 |
| E | Professional Elective – II | | | | 3 |
| O | Open Elective – I | | | | 3 |
| 21GNP301L | Community Connect | 0 | 0 | 2 | 1 |
| 21PDM301L | Analytical and Logical Thinking Skills | 0 | 0 | 2 | 0 |
| 21LEM301T | Indian Art Form | 1 | 0 | 0 | 0 |
| | | | | Total Credits | 20 |

**Semester – VI**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21CSS303T | Data Science | 2 | 0 | 0 | 2 |
| 21ECC302T | Analog and Digital Communication | 3 | 0 | 0 | 3 |
| 21ECC304T | Microwave and Optical Communication | 3 | 0 | 0 | 3 |
| 21ECC322L | Communication Laboratory | 0 | 0 | 4 | 2 |
| E | Professional Elective – III | | | | 3 |
| E | Professional Elective – IV | | | | 3 |
| O | Open Elective – II | | | | 3 |
| 21ECP302L | Project | 0 | 0 | 6 | 3 |
| 21ECP303T | MOOC | 3 | 0 | 0 | |
| 21PDM302L | Employability Skills and Practices | 0 | 0 | 2 | 0 |
| 21LEM302T | Indian Traditional Knowledge | 1 | 0 | 0 | 0 |
| | | | | Total Credits | 22 |

**Semester – VII**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21GNH401T | Behavioral Psychology | 2 | 1 | 0 | 3 |
| 21ECC401T | Wireless Communication and Antenna Systems | 3 | 0 | 0 | 3 |
| 21ECC402P | Computer Communication and Network Security | 2 | 1 | 0 | 3 |
| E | Professional Elective – V | | | | 3 |
| E | Professional Elective – VI | | | | 3 |
| O | Open Elective –III | | | | 3 |
| | | | | Total Credits | 18 |

**Semester - VIII**

| Course Code | Course Title | Hours / Week L | T | P | C |
|---|---|---|---|---|---|
| 21ECP401L | Major Project | 0 | 0 | 30 | 15 |
| 21ECP402L | Major Project | 0 | 0 | 20 | 10 |
| 21ECP403L | Internship# | 0 | 0 | 10 | 5 |
| | | | | Total Credits | 15 |

*#Students have to register either 21ECP401L or 21ECP402L and 21ECP403L both in eighth semester*


# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

**(Deemed to be University u/s 3 of UGC Act, 1956)**

Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India