

**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 2024)**



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

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

**Kattankulathur, Chengalpattu District 603203,**

**Tamil Nadu, India**

**53. (e) Program Structure: Integrated M.Tech.in Electronics and Communication Engineering with Specialization in Microelectronics System Design**

| Humanities & Social Sciences<br>including Management Courses (H)                     |                                              |                 |   |   |   |                        | Basic Science Courses (B)                                                        |                 |   |   |   |                  |  |
|--------------------------------------------------------------------------------------|----------------------------------------------|-----------------|---|---|---|------------------------|----------------------------------------------------------------------------------|-----------------|---|---|---|------------------|--|
| Course<br>Code                                                                       | Course<br>Title                              | Hours /<br>Week |   |   |   | Course<br>Code         | Course<br>Title                                                                  | Hours /<br>Week |   |   |   |                  |  |
|                                                                                      |                                              | L               | T | P | C |                        |                                                                                  | L               | T | P | C |                  |  |
| 21LEH101T                                                                            | Communicative English                        | 2               | 1 | 0 | 3 | 21PYB101J              | Physics: Electromagnetic Theory,<br>Quantum Mechanics, Waves and Optics          | 3               | 1 | 2 | 5 |                  |  |
| 21LEH102T                                                                            | Chinese                                      | 2               | 1 | 0 | 3 | 21CYB101J              | Chemistry                                                                        | 3               | 1 | 2 | 5 |                  |  |
| 21LEH103T                                                                            | French                                       |                 |   |   |   | 21MAB101T              | Calculus and Linear Algebra                                                      | 3               | 1 | 0 | 4 |                  |  |
| 21LEH104T                                                                            | German                                       |                 |   |   |   | 21MAB102T              | Advanced Calculus and Complex Analysis                                           | 3               | 1 | 0 | 4 |                  |  |
| 21LEH105T                                                                            | Japanese                                     |                 |   |   |   | 21MAB201T              | Transforms and Boundary Value<br>Problems                                        | 3               | 1 | 0 | 4 |                  |  |
| 21LEH106T                                                                            | Korean                                       |                 |   |   |   | 21MAB203T              | Probability and Stochastic Processes                                             | 3               | 1 | 0 | 4 |                  |  |
| 21LEH107T                                                                            | Spanish                                      |                 |   |   |   | 21MAB302T              | Discrete Mathematics                                                             | 3               | 1 | 0 | 4 |                  |  |
| 21LEH108T                                                                            | Russian                                      |                 |   |   |   | 21BTB103T              | Biology                                                                          | 2               | 0 | 0 | 2 |                  |  |
| 21GNH101J                                                                            | Philosophy of Engineering                    | 1               | 0 | 2 | 2 | Total Credits 32       |                                                                                  |                 |   |   |   |                  |  |
| 21PDH209T <sup>1</sup>                                                               | Social Engineering                           | 2               | 0 | 0 | 2 |                        |                                                                                  |                 |   |   |   |                  |  |
| 21GNH401T                                                                            | Behavioral Psychology                        | 2               | 1 | 0 | 3 |                        |                                                                                  |                 |   |   |   |                  |  |
| Total Credits 13                                                                     |                                              |                 |   |   |   |                        |                                                                                  |                 |   |   |   |                  |  |
| Engineering Science Courses (S)                                                      |                                              |                 |   |   |   |                        | Professional Core Courses (C)                                                    |                 |   |   |   |                  |  |
| Course<br>Code                                                                       | Course<br>Title                              | Hours /<br>Week |   |   |   | Course<br>Code         | Course<br>Title                                                                  | Hours /<br>Week |   |   |   |                  |  |
|                                                                                      |                                              | L               | T | P | C |                        |                                                                                  | L               | T | P | C |                  |  |
| 21EES101T                                                                            | Electrical and Electronics Engineering       | 3               | 1 | 0 | 4 | 21ECC101J              | Electronic System and PCB Design                                                 | 2               | 0 | 2 | 3 |                  |  |
| 21MES101L <sup>1</sup>                                                               | Basic Civil and Mechanical Workshop          | 0               | 0 | 4 | 2 | 21ECC201T <sup>2</sup> | Solid State Devices                                                              | 3               | 0 | 0 | 3 |                  |  |
| 21MES102L <sup>1</sup>                                                               | Engineering Graphics and Design              | 0               | 0 | 4 | 2 | 21ECC202T              | Analog and Linear Electronic Circuits                                            | 3               | 0 | 0 | 3 |                  |  |
| 21CSS101J                                                                            | Programming for Problem Solving              | 3               | 0 | 2 | 4 | 21ECC203T              | Digital logic Design                                                             | 3               | 0 | 0 | 3 |                  |  |
| 21CSS201T                                                                            | Computer Organization and<br>Architecture    | 3               | 1 | 0 | 4 | 21ECC204T <sup>2</sup> | Signal Processing                                                                | 3               | 0 | 0 | 3 |                  |  |
| 21DCS201P <sup>1</sup>                                                               | Design Thinking and Methodology              | 1               | 2 | 0 | 3 | 21ECC205T              | Electromagnetic Theory and<br>Interference                                       | 3               | 0 | 0 | 3 |                  |  |
| 21CSS303T                                                                            | Data Science                                 | 2               | 0 | 0 | 2 | 21ECC211L <sup>1</sup> | Devices and Digital IC Laboratory                                                | 0               | 0 | 4 | 2 |                  |  |
| Total Credits 21                                                                     |                                              |                 |   |   |   | 21ECC222L <sup>1</sup> | Analog and Linear Electronic Circuits<br>Laboratory                              | 0               | 0 | 4 | 2 |                  |  |
| Project Work, Seminar, Internship in Industry / Higher Technical<br>Institutions (P) |                                              |                 |   |   |   | 21ECC301P <sup>1</sup> | Microprocessor, Microcontroller, and<br>Interfacing Techniques                   | 3               | 1 | 0 | 4 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC302T              | Analog and Digital Communication                                                 | 3               | 0 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC303T <sup>2</sup> | VLSI Design and Technology                                                       | 3               | 0 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC304T <sup>2</sup> | Microwave and Optical Communication                                              | 3               | 0 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC311L <sup>1</sup> | VLSI Design Laboratory                                                           | 0               | 0 | 4 | 2 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC322L <sup>1</sup> | Communication Laboratory                                                         | 0               | 0 | 4 | 2 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC401T <sup>2</sup> | Wireless Communication and Antenna<br>Systems                                    | 3               | 0 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC402P <sup>1</sup> | Computer Communication and Network<br>Security                                   | 2               | 1 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21CSC206T              | Artificial Intelligence                                                          | 2               | 1 | 0 | 3 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC561P <sup>1</sup> | Analog and Mixed Signal IC Design                                                | 3               | 1 | 0 | 4 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21ECC562J <sup>2</sup> | Chip Design Verification                                                         | 3               | 0 | 2 | 4 |                  |  |
|                                                                                      |                                              |                 |   |   |   | 21IPC501J <sup>2</sup> | Research Methodology                                                             | 2               | 1 | 2 | 4 |                  |  |
|                                                                                      |                                              |                 |   |   |   | Total Credits 39       |                                                                                  |                 |   |   |   | Total Credits 58 |  |
|                                                                                      |                                              |                 |   |   |   |                        | Non Credit Courses (M)                                                           |                 |   |   |   |                  |  |
| Course<br>Code                                                                       | Course<br>Title                              | Hours /<br>Week |   |   |   | Course<br>Code         | Course<br>Title                                                                  | Hours /<br>Week |   |   |   |                  |  |
|                                                                                      |                                              | L               | T | P | C |                        |                                                                                  | L               | T | P | C |                  |  |
| 21PDM101L <sup>1</sup>                                                               | Professional Skills and Practices            | 0               | 0 | 2 |   | 21PDM102L <sup>1</sup> | General Aptitude                                                                 | 0               | 0 | 2 |   |                  |  |
| 21PDM201L <sup>1</sup>                                                               | Verbal Reasoning                             | 0               | 0 | 2 |   | 21PDM202L <sup>1</sup> | Critical and Creative Thinking Skills                                            | 0               | 0 | 2 | 0 |                  |  |
| 21PDM301L <sup>1</sup>                                                               | Analytical and Logical Thinking Skills       | 0               | 0 | 2 |   | 21PDM302L <sup>1</sup> | Employability Skills and Practices                                               | 0               | 0 | 2 |   |                  |  |
| 21CYM101T <sup>1</sup>                                                               | Environmental Science                        | 1               | 0 | 0 | 0 | 21LEM101T <sup>1</sup> | Constitution of India                                                            | 1               | 0 | 0 |   | 0                |  |
| 21LEM101T <sup>1</sup>                                                               | Constitution of India                        | 1               | 0 | 0 | 0 | 21LEM102T <sup>1</sup> | Universal Human Values – Introduction                                            | 1               | 0 | 0 | 0 |                  |  |
| 21LEM201T <sup>1</sup>                                                               | Professional Ethics                          | 1               | 0 | 0 | 0 | 21LEM202T <sup>1</sup> | Universal Human Values-II:<br>Understanding Harmony and Ethical<br>Human Conduct | 2               | 1 | 0 | 3 |                  |  |
| 21ECO101T                                                                            | Short Range Wireless Communication           | 3               | 0 | 0 | 3 | 21LEM301T <sup>1</sup> | Indian Art Form                                                                  | 1               | 0 | 0 | 0 |                  |  |
| 21ECO102J                                                                            | Electronic Circuits and Systems              | 2               | 0 | 2 | 3 | 21LEM302T <sup>1</sup> | Indian Traditional Knowledge                                                     | 1               | 0 | 0 | 0 |                  |  |
| 21ECO103T                                                                            | Modern Wireless Communication<br>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<br>Raspberry Pi | 2               | 0 | 2 | 3 |                        |                                                                                  |                 |   |   |   |                  |  |
| 21ECO108J                                                                            | 3D Printing Hardware and Software            | 2               | 0 | 2 | 3 |                        |                                                                                  |                 |   |   |   |                  |  |
| 21ECO109T                                                                            | 5G Technology – An Overview                  | 3               | 0 | 0 | 3 |                        |                                                                                  |                 |   |   |   |                  |  |
| Total Credits 12                                                                     |                                              |                 |   |   |   |                        |                                                                                  |                 |   |   |   |                  |  |

|                                                       |                                                     |              |   |   |   |                               |                                                                      |                                        |              |   |                                   |   |    |    |  |  |  |
|-------------------------------------------------------|-----------------------------------------------------|--------------|---|---|---|-------------------------------|----------------------------------------------------------------------|----------------------------------------|--------------|---|-----------------------------------|---|----|----|--|--|--|
|                                                       |                                                     |              |   |   |   |                               | 21GNM101L <sup>1</sup>                                               | Physical and Mental Health using Yoga  |              |   | 0                                 | 0 | 2  | 0  |  |  |  |
|                                                       |                                                     |              |   |   |   |                               | 21GNM102L <sup>1</sup>                                               | National Service Scheme                |              |   |                                   |   |    |    |  |  |  |
|                                                       |                                                     |              |   |   |   |                               | 21GNM103L <sup>1</sup>                                               | National Cadet Corps                   |              |   |                                   |   |    |    |  |  |  |
|                                                       |                                                     |              |   |   |   |                               | 21GNM104L <sup>1</sup>                                               | National Sports Organization           |              |   |                                   |   |    |    |  |  |  |
|                                                       |                                                     |              |   |   |   |                               | Total Credits                                                        |                                        |              |   |                                   |   |    | 03 |  |  |  |
| Professional Elective Courses (E)<br>(Any 11 courses) |                                                     |              |   |   |   |                               |                                                                      |                                        |              |   | Professional Elective Courses (E) |   |    |    |  |  |  |
| Course Code                                           | Course Title                                        | Hours / Week |   |   |   | C                             | Course Code                                                          | Course Title                           | Hours / Week |   |                                   |   | C  |    |  |  |  |
|                                                       |                                                     | L            | T | P |   |                               |                                                                      |                                        | L            | T | P                                 |   |    |    |  |  |  |
| Sub-Stream: Electronic System Engineering             |                                                     |              |   |   |   |                               | 21ECE225T                                                            | Optical Systems and Networks           |              |   | 3                                 | 0 | 0  | 3  |  |  |  |
| 21ECE201J                                             | Python and Scientific Python                        | 2            | 0 | 2 | 3 | 21ECE320T                     | Software Defined Networks                                            |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE202T                                             | Micro- and Nano-Fabrication Technologies            | 3            | 0 | 0 | 3 | 21ECE321T                     | RF and Microwave Semiconductor Devices                               |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE203J                                             | Smart Sensors and Devices for Agriculture           | 2            | 0 | 2 | 3 | 21ECE322T                     | Data analytics using R                                               |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE204T                                             | Optoelectronics                                     | 3            | 0 | 0 | 3 | 21ECE323T                     | Cyber Security                                                       |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE205T                                             | Flexible Electronics                                | 3            | 0 | 0 | 3 | 21ECE324T                     | Advanced Mobile Communication Systems                                |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE212T                                             | Control Systems: Theory and Applications            | 3            | 0 | 0 | 3 | 21ECE420T                     | Information Theory and Coding                                        |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE260T                                             | Industrial Electronics                              | 3            | 0 | 0 | 3 | 21ECE421T                     | Wireless Communication Networks                                      |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE261T                                             | Measurements and Instrumentation                    | 3            | 0 | 0 | 3 | Sub-Stream: Signal Processing |                                                                      |                                        |              |   |                                   |   |    |    |  |  |  |
| 21ECE262T                                             | Low Power Sensors Technology                        | 3            | 0 | 0 | 3 | 21ECE240T                     | Wavelets and Signal Processing                                       |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE263T                                             | Micro, Nano Electromechanical Devices               | 3            | 0 | 0 | 3 | 21ECE241J                     | Audio and Speech Processing                                          |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE301T                                             | Nanoscale Electronic Devices                        | 3            | 0 | 0 | 3 | 21ECE242J                     | Pattern Recognition and Neural Networks                              |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE302J                                             | Real Time Operating Systems                         | 2            | 0 | 2 | 3 | 21ECE340J                     | Digital Image and Video Processing                                   |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE303T                                             | MEMS Technologies                                   | 3            | 0 | 0 | 3 | 21ECE341J                     | DSP System Design                                                    |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE304T                                             | Cyber Physical System Framework                     | 3            | 0 | 0 | 3 | 21ECE364T                     | Digital Signal Processors, Architectures and Applications            |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE305J                                             | Machine Learning Algorithms                         | 2            | 0 | 2 | 3 | 21ECE440T                     | Adaptive Signal Processing                                           |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE361T                                             | Consumer Electronics and Trouble shooting           | 3            | 0 | 0 | 3 | 21ECE441T                     | Machine Perception with Cognition                                    |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE362T                                             | Quality and Reliability Engineering                 | 3            | 0 | 0 | 3 | 21ECE442T                     | Multimedia Compression Techniques                                    |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE363T                                             | Electronic Packaging                                | 3            | 0 | 0 | 3 | Sub-Stream: VLSI              |                                                                      |                                        |              |   |                                   |   |    |    |  |  |  |
| 21ECE366T                                             | Digital Integrated Circuits and Synthesis           | 3            | 0 | 0 | 3 | 21ECE560T                     | Testing and Diagnosis of VLSI Circuits                               |                                        |              | 2 | 1                                 | 0 | 3  |    |  |  |  |
| 21ECE401T                                             | Advanced Digital System Design                      | 3            | 0 | 0 | 3 | 21ECE561J                     | Hardware design for Machine learning                                 |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE402T                                             | Semiconductor Device Modeling                       | 3            | 0 | 0 | 3 | 21ECE562J                     | Modern ASIC Design                                                   |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE403T                                             | Microwave Integrated Circuits                       | 3            | 0 | 0 | 3 | 21ECE563T                     | Low power CMOS VLSI design                                           |                                        |              | 2 | 1                                 | 0 | 3  |    |  |  |  |
| 21ECE404T                                             | Terahertz Devices and Applications                  | 3            | 0 | 0 | 3 | 21ECE564J                     | Reconfigurable Systems                                               |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE460T                                             | Emerging Processor Based System Design              | 3            | 0 | 0 | 3 | 21ECE566J                     | Process and Device Modeling using CAD                                |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE461T                                             | Semiconductor Memory Design                         | 3            | 0 | 0 | 3 | 21ECE567J                     | Quantum Technologies and Applications                                |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE463T                                             | Scripting Language for Electronic Design Automation | 3            | 0 | 0 | 3 | 21ECE568J                     | RF System Design                                                     |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE464T                                             | Statistical Analysis and Optimization for VLSI      | 3            | 0 | 0 | 3 | 21ECE569T                     | VLSI Signal processing Techniques                                    |                                        |              | 2 | 1                                 | 0 | 3  |    |  |  |  |
| 21ECE468T                                             | System and Network on Chip                          | 3            | 0 | 0 | 3 | 21ECE570T                     | CAD for High-Speed Chip Package Systems                              |                                        |              | 2 | 1                                 | 0 | 3  |    |  |  |  |
| Sub-Stream: Communication System Engineering          |                                                     |              |   |   |   |                               | 21ECE571T                                                            | Hardware Acceleration and Optimization |              |   | 2                                 | 1 | 0  | 3  |  |  |  |
| 21ECE220T                                             | Wireless and Optical Sensors                        | 3            | 0 | 0 | 3 | 21ECE572T                     | Hardware and Software Codesign with FPGAs                            |                                        |              | 3 | 0                                 | 0 | 3  |    |  |  |  |
| 21ECE221T                                             | Radar and Navigational Aids                         | 3            | 0 | 0 | 3 | 21ECE573J                     | Board Design Practice Part-I: Electronics System Design and Analysis |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE222T                                             | Adhoc and Sensor Networks                           | 3            | 0 | 0 | 3 | 21ECE574J                     | Board Design Practice Part-II: PCB Design, Fabrication and Testing   |                                        |              | 2 | 0                                 | 2 | 3  |    |  |  |  |
| 21ECE223T                                             | Satellite Communication and Broadcasting            | 3            | 0 | 0 | 3 | Total Credits                 |                                                                      |                                        |              |   |                                   |   | 33 |    |  |  |  |
| 21ECE224T                                             | Cryptography and Network Security                   | 3            | 0 | 0 | 3 |                               |                                                                      |                                        |              |   |                                   |   |    |    |  |  |  |

53. (f) **Programme Articulation: Integrated M.Tech. in Electronics and Communication Engineering with Specialization in Microelectronics System Design**

| 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                            | 3                     | 2.5              | 2.67                            | -                                          | 3                 | -                        | -                            | -      | -                      | 2             | -                      | 2.8                | 2.5   | -     |       |
| 21ECC201T   | Solid State Devices                                         | 3                     | 2                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | 1                      | 1                  | -     | -     |       |
| 21ECC202T   | Analog and Linear Electronic Circuits                       | 2                     | 2                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 3     |       |
| 21ECC203T   | Digital Logic Design                                        | 3                     | 2                | 2                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | -     |       |       |
| 21ECC204T   | Signal Processing                                           | 2                     | 2.2              | 3                               | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2.2   |       |
| 21ECC205T   | Electromagnetic Theory and Interference                     | 2.4                   | 2.6              | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     |       |
| 21ECC211L   | Devices and Digital IC Laboratory                           | 3                     | 2                | -                               | -                                          | 1                 | -                        | -                            | -      | -                      | -             | -                      | 1                  | -     | -     |       |
| 21ECC222L   | Analog and Linear Electronic Circuits Laboratory            | 2                     | -                | 2                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      |                    | -     | -     |       |
| 21ECC301P   | Microprocessor, Microcontroller, and Interfacing Techniques | -                     | 3                | 3                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | 2.67               | -     | -     |       |
| 21ECC302T   | Analog and Digital Communication                            | 3                     | 2.5              | 3                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | 2                      | 2.5                | 3     | 2.5   |       |
| 21ECC303T   | VLSI Design and Technology                                  |                       | 2.4              | 2.25                            | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | 2     | -     |       |
| 21ECC304T   | Microwave and Optical Communication                         | 2.8                   | 2                | 2                               | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | 2     | -     |       |
| 21ECC311L   | VLSI Design Laboratory                                      | 3                     | 3                | -                               | -                                          | 1                 | -                        | -                            | -      | -                      | -             | -                      | 1                  | -     | -     |       |
| 21ECC322L   | Communication Laboratory                                    | 2                     | -                | 2.5                             | 3                                          | -                 | -                        | -                            | -      | 3                      | -             | -                      | 3                  | 2     | -     |       |
| 21ECC401T   | Wireless Communication and Antenna Systems                  | 3                     | 2.3              | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | 2                      | -                  | -     | 3     |       |
| 21ECC402P   | Computer Communication and Network Security                 | 2.67                  | 3                | 2                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 3     |       |
| 21ECC561P   | Analog and Mixed Signal IC Design                           | 2.2                   | 3                | 3                               | 1                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | 1     | -     |       |
| 21ECC562J   | Chip design verification                                    | 3                     | 2.2              | 1.5                             |                                            | 2                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | 3     | -     |       |
| 21ECE201J   | Python and Scientific Python                                | -                     | 2.67             | 3                               | 2                                          | 3                 | -                        | -                            | -      | 3                      | -             | -                      | 3                  | -     | 2.7   |       |
| 21ECE202T   | Micro- and Nano-Fabrication Technologies                    | 3                     | -                | 2                               | 2                                          |                   | -                        | -                            | -      | -                      | -             | -                      | 3                  | -     | 2     |       |
| 21ECE203J   | Smart Sensors and Devices for Agriculture                   | 3                     | -                | 2                               |                                            | 2                 | -                        | 3                            | -      | -                      | -             | 2                      | 2                  | -     | 2     |       |
| 21ECE204T   | Optoelectronics                                             | 2.8                   | 2.67             | 2.67                            | 2.67                                       | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2.4   |       |
| 21ECE205T   | Flexible Electronics                                        | 3                     | 3                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | 3                      | -                  | -     | -     |       |
| 21ECE212T   | Control Systems: Theory and Applications                    | 3                     | 2.75             | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 1                  | -     | -     |       |
| 21ECE220T   | Wireless and Optical Sensors                                | 3                     | 1                | 1.5                             | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2     |       |
| 21ECE221T   | Radar And Navigational Aids                                 | 2.8                   | 2                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.3                | 2     | -     |       |
| 21ECE222T   | Adhoc and Sensor Networks                                   | 3                     |                  | 2                               | 3                                          | -                 | 3                        | -                            | -      | -                      | -             | 2                      | 1.5                | 2.3   | -     |       |
| 21ECE223T   | Satellite Communication and Broadcasting                    | 2.5                   | 2                | 2.5                             | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.3                | 2     | 3     |       |
| 21ECE224T   | Cryptography and Network Security                           | 2.6                   | 3                | 2                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     |       |
| 21ECE225T   | Optical Systems and Networks                                | 3                     | 2                | 2.5                             | 2.5                                        | -                 | -                        | -                            | -      | 3                      | -             | -                      | -                  | -     | 3     |       |
| 21ECE240T   | Wavelets and Signal Processing                              | 2                     | 2                | 2.25                            | 1                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 1                  | -     | 2     |       |
| 21ECE241J   | Audio and Speech Processing                                 | 3                     | 2                | 2                               |                                            | 3                 | 1                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2     |       |
| 21ECE242J   | Pattern Recognition and Neural Networks                     | 1.5                   | 1                | 2.3                             | 3                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | 2.5   |       |
| 21ECE260T   | Industrial Electronics                                      | 2.75                  | 2                | 2                               | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 1.66               | 2     | -     |       |
| 21ECE261T   | Measurements and Instrumentation                            | 3                     | 2                | 2                               | 2                                          | -                 | -                        | -                            | -      | -                      | -             | 2                      | 1                  | -     | -     |       |
| 21ECE262T   | Low Power Sensors Technology                                | 2.2                   | -                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.66               | -     | -     |       |
| 21ECE263T   | Micro, Nano Electro Mechanical devices                      | 2.4                   | 2                | 2.75                            | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | 2.7   | 3     |       |
| 21ECE301T   | Nanoscale Electronic Devices                                | 3                     | 2.5              |                                 |                                            | 2.5               | -                        | -                            | -      | -                      | -             | -                      | 2                  | -     | 2.5   |       |
| 21ECE302J   | Real Time Operating Systems                                 | 3                     | 3                | 3                               | -                                          | 2                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | -     | -     |       |
| 21ECE303T   | MEMS Technologies                                           | 2.2                   | 2                | 3                               | -                                          |                   | -                        | -                            | -      | -                      | -             | -                      | 2                  | 2.8   | -     |       |
| 21ECE304T   | Cyber Physical System Framework                             | 3                     | 2.2              | 3                               | -                                          | 3                 | -                        | -                            | -      | 3                      | -             | -                      | -                  | -     | -     |       |
| 21ECE305J   | Machine Learning Algorithms                                 | 3                     | 1.3              | -                               | 3                                          | 1.8               | -                        | -                            | -      | -                      | -             | -                      | 1.4                | -     | -     |       |
| 21ECE320T   | Software Defined Networks                                   | 3                     | -                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.3                | 2     | 1     |       |
| 21ECE321T   | RF and Microwave Semiconductor Devices                      | 3                     | 1.8              | 1.5                             | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | -     | 1     |       |
| 21ECE322T   | Data analytics using R                                      | -                     | 3                | 3                               | -                                          | 2                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | -     | 3     |       |
| 21ECE323T   | Cyber Security                                              | -                     | 3                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 3                  | -     | -     |       |
| 21ECE324T   | Advanced Mobile Communication Systems                       | 3                     | 2                | 2                               | 2.5                                        | -                 | -                        | -                            | -      | 3                      | -             | -                      | 3                  | -     | 2     |       |
| 21ECE340J   | Digital Image and Video Processing                          | 2.6                   | 2.3              | 2.3                             | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.6                | 2.5   | 1     |       |
| 21ECE341J   | DSP System Design                                           | 1                     | 2.25             | 3                               | 2.5                                        | -                 | -                        | -                            | -      | -                      | -             | -                      | v                  |       | 2     |       |
| 21ECE361T   | Consumer Electronics and Trouble shooting                   | 2.75                  | 2                | 2                               | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 1.66               | 2.5   | -     |       |
| 21ECE362T   | Quality and Reliability Engineering                         | 3                     | 1.5              | 2                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      |                    | -     | 2     |       |

| 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 |
| 21ECE363T       | Electronic Packaging                                                 | 3                     | 2                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2.33               | 2.25  | -     | -     |
| 21ECE364T       | Digital Signal Processors, Architectures and Applications            | 2.2                   | -                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | 2     | -     |
| 21ECE366T       | Digital Integrated circuits and Synthesis                            | 3                     | 2                | 3                               | 1                                          | 2                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 1.5   | 2.7   | -     |
| 21ECE401T       | Advanced Digital System Design                                       | 3                     | 2                | 2.2                             | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 1     | -     | 1     |
| 21ECE402T       | Semiconductor Device Modeling                                        | 3                     | 2                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 2     |
| 21ECE403T       | Microwave Integrated Circuits                                        | 3                     | 2                | 1.67                            | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 2     |
| 21ECE404T       | Terahertz Devices and Applications                                   | 3                     | 2.75             | 2                               | 2                                          | -                 | -                        | 2                            | -      | -                      | -             | -                      | -                  | 2.3   | 2     | 3     |
| 21ECE420T       | Information Theory and Coding                                        | -                     | 3                | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2     | -     |
| 21ECE421T       | Wireless Communication Networks                                      | 3                     | 2.75             | 2                               | 2                                          | -                 | -                        | 2                            | -      | -                      | -             | -                      | -                  | 2.3   | 2     | 3     |
| 21ECE440T       | Adaptive Signal Processing                                           | 3                     | 2.2              | 2.75                            | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | 1.5   | 1     |
| 21ECE441T       | Machine Perception with Cognition                                    | 2.6                   | 2                | 3                               | 3                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | 3     | -     |
| 21ECE442T       | Multimedia Compression Techniques                                    | 3                     | 2                | 2.3                             | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 1     | 1     | 2     |
| 21ECE460T       | Emerging Processor based System Design                               | -                     | 2                | 2.4                             | 1.66                                       | 1.5               | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2     | 2     |
| 21ECE461T       | Semiconductor Memory Design                                          | 2.8                   | 2                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 1.8   | -     | -     |
| 21ECE463T       | Scripting Language for Electronic Design Automation                  | -                     | 2                | 3                               | 2.66                                       | 2                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 2     |
| 21ECE464T       | Statistical Analysis and Optimization for VLSI                       | 1                     | 2                | 3                               | 2.5                                        | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 1.8   |
| 21ECE468T       | System and Network on Chip                                           | -                     | 2.5              | 3                               | 2                                          | 2                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 3     | -     | 2     |
| 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     |
| 21ECE560T       | Testing and Diagnosis of VLSI Circuits                               | 1.8                   | 2.4              | 3                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 3     | -     | -     |
| 21ECE561J       | Hardware design for Machine learning                                 | -                     | 2.4              | 2.25                            | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | 2     | -     |
| 21ECE562J       | Modern ASIC Design                                                   | 3                     | 2.5              | 3                               | 2                                          | 2                 | -                        | -                            | -      | 2                      | -             | -                      | -                  | 3     | -     | 2     |
| 21ECE563T       | Low power CMOS VLSI design                                           | 3                     | 3                | -                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 2     | -     | -     |
| 21ECE564J       | Reconfigurable Systems                                               | -                     | 2                | 2.4                             | 2                                          | 2                 | 2                        | -                            | -      | -                      | -             | -                      | -                  | 3     | -     | 2     |
| 21ECE566J       | Process and Device Modeling using CAD                                | 3                     | -                | -                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 3     |
| 21ECE567J       | Quantum Technologies and Applications                                | 3                     | 2                | 3                               | 2.5                                        | 2                 | -                        | -                            | -      | -                      | -             | -                      | 1                  | 1.4   | -     | -     |
| 21ECE568J       | RF System Design                                                     | 2.67                  | 2.67             | 3                               | 3                                          | 2.33              | -                        | -                            | -      | -                      | -             | -                      | -                  | 3     | 2     | -     |
| 21ECE569T       | VLSI Signal processing Techniques                                    | 2.8                   | 2                | -                               | 2                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 3     | -     |
| 21ECE570T       | CAD for High-Speed Chip Package Systems                              | 2                     | 2                | 1.75                            | 2                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | 1.25  | -     | -     |
| 21ECE571T       | Hardware Acceleration and Optimization                               | 1.5                   | 2.4              | 2.67                            | 2                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | -     | 1.5   |
| 21ECE572T       | Hardware and Software Co-Design for FPGAs                            | 3                     | -                | 2                               | -                                          | -                 | -                        | -                            | -      | -                      | -             | -                      | 2                  | 2     | -     | -     |
| 21ECE573J       | Board Design Practice Part-I: Electronics System Design and Analysis | 3                     | -                | 2                               | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | -                  | -     | 2     | -     |
| 21ECE574J       | Board Design Practice Part-II: PCB Design, Fabrication & Testing     | 1.8                   | 2                | 2.5                             | -                                          | 3                 | -                        | -                            | -      | -                      | -             | -                      | -                  | 1     | 2     | -     |
| 21ECP501L       | Specialization Project                                               | 3                     | 3                | 3                               | 3                                          | 3                 | 3                        | 3                            | 3      | 3                      | 3             | 3                      | 3                  | 3     | 3     | 3     |
| 21ECP502L       | Specialization Project                                               | 3                     | 3                | 3                               | 3                                          | 3                 | 3                        | 3                            | 3      | 3                      | 3             | 3                      | 3                  | 3     | 3     | 3     |
| 21ECP503L       | Domain Internship                                                    | 3                     | 3                | 3                               | 3                                          | 3                 | 3                        | 3                            | 3      | 3                      | 3             | 3                      | 3                  | 3     | 3     | 3     |
| Program Average |                                                                      | 2.67                  | 2.26             | 2.48                            | 2.35                                       | 2.40              | 2.00                     | 2.33                         | -      | 2.80                   | 3.00          | 2.00                   | 2.03               | 2.11  | 2.17  | 2.19  |

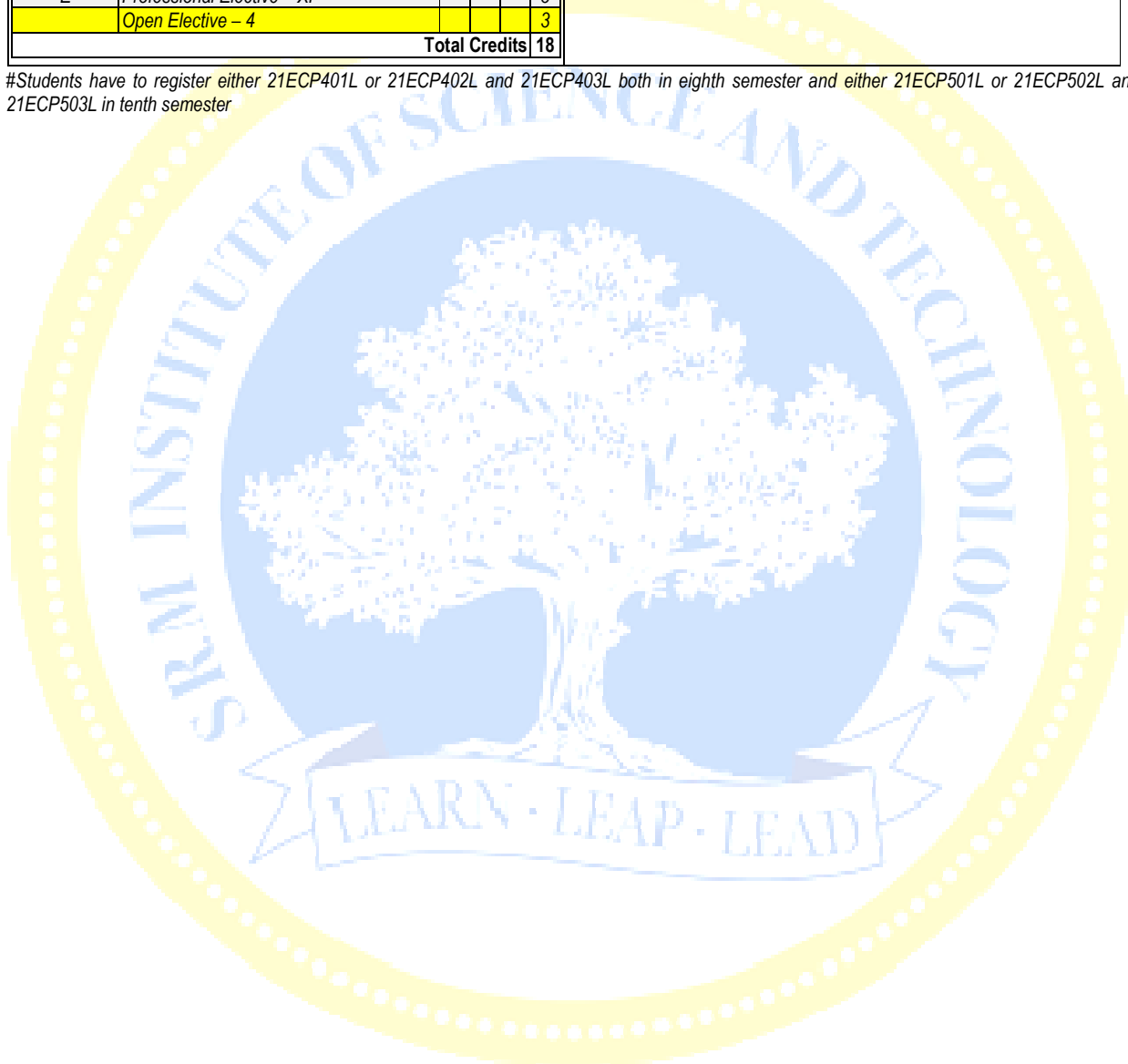
53. (g) Implementation Plan: Integrated M.Tech. in Electronics and Communication Engineering with Specialization in Microelectronics System Design

| Semester – I           |                                                                            |              |   |   |    |  |
|------------------------|----------------------------------------------------------------------------|--------------|---|---|----|--|
| Course Code            | Course Title                                                               | Hours / Week |   |   | C  |  |
|                        |                                                                            | L            | T | P |    |  |
| 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 <sup>1</sup> | Engineering Graphics and Design                                            | 0            | 0 | 4 | 2  |  |
| 21EES101T              | Electrical and Electronics Engineering                                     | 3            | 1 | 0 | 4  |  |
| 21CYM101T <sup>1</sup> | Environmental Science                                                      | 1            | 0 | 0 | 0  |  |
| 21PDM101L <sup>1</sup> | Professional Skills and Practices                                          | 0            | 0 | 2 | 0  |  |
| 21LEM101T <sup>1</sup> | Constitution of India                                                      | 1            | 0 | 0 | 0  |  |
| Total Credits          |                                                                            |              |   |   | 18 |  |
| Semester – III         |                                                                            |              |   |   |    |  |
| Course Code            | Course Title                                                               | Hours / Week |   |   | C  |  |
|                        |                                                                            | L            | T | P |    |  |
| 21MAB201T              | Transforms and Boundary Value Problems                                     | 3            | 1 | 0 | 4  |  |
| 21PDH209T <sup>1</sup> | Social Engineering                                                         | 2            | 0 | 0 | 2  |  |
| 21CSS201T              | Computer Organization and Architecture                                     | 3            | 1 | 0 | 4  |  |
| 21ECC201T <sup>2</sup> | 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 <sup>1</sup> | Devices and Digital IC Laboratory                                          | 0            | 0 | 4 | 2  |  |
| 21LEM201T <sup>1</sup> | Professional Ethics                                                        | 1            | 0 | 0 | 0  |  |
| 21PDM201L <sup>1</sup> | Verbal Reasoning                                                           | 0            | 0 | 2 | 0  |  |
| 21LEM202T <sup>1</sup> | Universal Human Values-II: Understanding Harmony and Ethical Human Conduct | 2            | 1 | 0 | 3  |  |
| Total Credits          |                                                                            |              |   |   | 24 |  |
| Semester – V           |                                                                            |              |   |   |    |  |
| Course Code            | Course Title                                                               | Hours / Week |   |   | C  |  |
|                        |                                                                            | L            | T | P |    |  |
| 21MAB302T              | Discrete Mathematics                                                       | 3            | 1 | 0 | 4  |  |
| 21ECC301P <sup>1</sup> | Microprocessor, Microcontroller, and Interfacing Techniques                | 3            | 1 | 0 | 4  |  |
| 21ECC303T <sup>2</sup> | VLSI Design and Technology                                                 | 3            | 0 | 0 | 3  |  |
| 21ECC311L <sup>1</sup> | VLSI Design Laboratory                                                     | 0            | 0 | 4 | 2  |  |
| E                      | Professional Elective – II                                                 |              |   |   | 3  |  |
| O                      | Open Elective – I                                                          | 3            | 0 | 0 | 3  |  |
| 21GNP301L <sup>1</sup> | Community Connect                                                          | 0            | 0 | 2 | 1  |  |
| 21PDM301L <sup>1</sup> | Analytical and Logical Thinking Skills                                     | 0            | 0 | 2 | 0  |  |
| 21LEM301T <sup>1</sup> | Indian Art Form                                                            | 1            | 0 | 0 | 0  |  |
| Total Credits          |                                                                            |              |   |   | 20 |  |
| Semester - VII         |                                                                            |              |   |   |    |  |
| Course Code            | Course Title                                                               | Hours / Week |   |   | C  |  |
|                        |                                                                            | L            | T | P |    |  |
| 21GNH401T              | Behavioral Psychology                                                      | 2            | 1 | 0 | 3  |  |
| 21ECC401T <sup>2</sup> | Wireless Communication and Antenna Systems                                 | 3            | 0 | 0 | 3  |  |
| 21ECC402P <sup>1</sup> | 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 - II          |                                                  |              |   |   |    |  |
|------------------------|--------------------------------------------------|--------------|---|---|----|--|
| Course Code            | Course Title                                     | Hours/ Week  |   |   | C  |  |
|                        |                                                  | L            | T | P |    |  |
| 21LEH102T              | Chinese                                          | 2            | 1 | 0 | 3  |  |
| 21LEH103T              | French                                           |              |   |   |    |  |
| 21LEH104T              | German                                           |              |   |   |    |  |
| 21LEH105T              | Japanese                                         |              |   |   |    |  |
| 21LEH106T              | Korean                                           |              |   |   |    |  |
| 21LEH107T              | Spanish                                          |              |   |   |    |  |
| 21LEH108T              | Russian                                          |              |   |   |    |  |
| 21GNH101J              | Philosophy of Engineering                        | 1            | 0 | 2 | 2  |  |
| 21MAB102T              | Advanced Calculus and Complex Analysis           | 3            | 1 | 0 | 4  |  |
| 21CYB101J              | Chemistry                                        | 3            | 1 | 2 | 5  |  |
| 21BTB103T              | Biology                                          | 2            | 0 | 0 | 2  |  |
| 21ECC101J              | Electronic System and PCB Design                 | 2            | 0 | 2 | 3  |  |
| 21MES101L <sup>1</sup> | Basic Civil and Mechanical Workshop              | 0            | 0 | 4 | 2  |  |
| 21CSS101J              | Programming for Problem Solving                  | 3            | 0 | 2 | 4  |  |
| 21PDM102L <sup>1</sup> | General Aptitude                                 | 0            | 0 | 2 | 0  |  |
| 21GNM101L <sup>1</sup> | Physical and Mental Health using Yoga            | 0            | 0 | 2 | 0  |  |
| 21GNM102L <sup>1</sup> | National Service Scheme                          |              |   |   |    |  |
| 21GNM103L <sup>1</sup> | National Cadet Corps                             |              |   |   |    |  |
| 21GNM104L <sup>1</sup> | National Sports Organization                     |              |   |   |    |  |
| Total Credits          |                                                  |              |   |   | 25 |  |
| Semester – IV          |                                                  |              |   |   |    |  |
| Course Code            | Course Title                                     | Hours / Week |   |   | C  |  |
|                        |                                                  | L            | T | P |    |  |
| 21MAB203T              | Probability and Stochastic Processes             | 3            | 1 | 0 | 4  |  |
| 21ECC202T              | Analog and Linear Electronic Circuits            | 3            | 0 | 0 | 3  |  |
| 21ECC204T <sup>2</sup> | Signal Processing                                | 3            | 0 | 0 | 3  |  |
| 21ECC222L <sup>1</sup> | Analog and Linear Electronic Circuits Laboratory | 0            | 0 | 4 | 2  |  |
| 21CSC206T              | Artificial Intelligence                          | 2            | 1 | 0 | 3  |  |
| 21DCS201P <sup>1</sup> | Design Thinking and Methodology                  | 1            | 2 | 0 | 3  |  |
| E                      | Professional Elective-I                          |              |   |   | 3  |  |
| 21PDM202L <sup>1</sup> | Critical and Creative Thinking Skills            | 0            | 0 | 2 | 0  |  |
| Total Credits          |                                                  |              |   |   | 21 |  |
| Semester – VI          |                                                  |              |   |   |    |  |
| Course Code            | Course Title                                     | Hours / Week |   |   | C  |  |
|                        |                                                  | L            | T | P |    |  |
| 21CSS303T              | Data Science                                     | 2            | 0 | 0 | 2  |  |
| 21ECC302T              | Analog and Digital Communication                 | 3            | 0 | 0 | 3  |  |
| 21ECC304T <sup>2</sup> | Microwave and Optical Communication              | 3            | 0 | 0 | 3  |  |
| 21ECC322L <sup>1</sup> | Communication Laboratory                         | 0            | 0 | 4 | 2  |  |
| E                      | Professional Elective – III                      |              |   |   | 3  |  |
| E                      | Professional Elective – IV                       |              |   |   | 3  |  |
| O                      | Open Elective – II                               |              |   |   | 3  |  |
| 21ECP302L <sup>1</sup> | Project                                          | 0            | 0 | 6 | 3  |  |
| 21ECP303T <sup>1</sup> | MOOC                                             | 3            | 0 | 0 |    |  |
| 21PDM302L <sup>1</sup> | Employability Skills and Practices               | 0            | 0 | 2 | 0  |  |
| 21LEM302T <sup>1</sup> | Indian Traditional Knowledge                     | 1            | 0 | 0 | 0  |  |
| Total Credits          |                                                  |              |   |   | 22 |  |
| Semester - VIII        |                                                  |              |   |   |    |  |
| Course Code            | Course Title                                     | Hours / Week |   |   | C  |  |
|                        |                                                  | L            | T | P |    |  |
| 21ECC561P <sup>1</sup> | Analog and Mixed Signal IC Design                | 3            | 1 | 0 | 4  |  |
| 21ECC562J <sup>2</sup> | Chip Design Verification                         | 3            | 0 | 2 | 4  |  |

|               |                              |              |   |   |                        |                      |                        |              |    |    |    |
|---------------|------------------------------|--------------|---|---|------------------------|----------------------|------------------------|--------------|----|----|----|
|               |                              |              |   |   | 21IPC501J <sup>2</sup> | Research Methodology | 2                      | 1            | 2  | 4  |    |
|               |                              |              |   |   | 21ECP401L              | Major Project        | 0                      | 0            | 30 | 15 |    |
|               |                              |              |   |   | 21ECP402L              | Major Project        | 0                      | 0            | 20 | 10 |    |
|               |                              |              |   |   | 21ECP403L              | Internship           | 0                      | 0            | 10 | 5  |    |
|               |                              |              |   |   | Total Credits          |                      |                        |              |    |    | 27 |
| Semester - IX |                              |              |   |   | Semester - X           |                      |                        |              |    |    |    |
| Course Code   | Course Title                 | Hours / Week |   |   |                        | Course Code          | Course Title           | Hours / Week |    |    |    |
|               |                              | L            | T | P | C                      |                      |                        | L            | T  | P  | C  |
| E             | Professional Elective - VII  |              |   |   | 3                      | 21ECP501L            | Specialization Project | 0            | 0  | 40 | 20 |
| E             | Professional Elective - VIII |              |   |   | 3                      | 21ECP502L            | Specialization Project | 0            | 0  | 30 | 15 |
| E             | Professional Elective – IX   |              |   |   | 3                      | 21ECP503L            | Domain Internship      | 0            | 0  | 10 | 5  |
| E             | Professional Elective – X    |              |   |   | 3                      | Total Credits        |                        |              |    |    | 20 |
| E             | Professional Elective – XI   |              |   |   | 3                      |                      |                        |              |    |    |    |
|               | Open Elective – 4            |              |   |   | 3                      |                      |                        |              |    |    |    |
| Total Credits |                              |              |   |   | 18                     |                      |                        |              |    |    |    |

#Students have to register either 21ECP401L or 21ECP402L and 21ECP403L both in eighth semester and either 21ECP501L or 21ECP502L and 21ECP503L in tenth semester





**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

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

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