
SRM
UNIVERSITY *AP*
Andhra Pradesh

# SCHOOL OF ENGINEERING AND SCIENCES

## M.Tech in VLSI

## 2023-25 Batch

## *Semester Wise Course Credit Distribution Under Various Categories*

| Category | S1 | S2 | S3 | S4 | Total | %age |
|---|---|---|---|---|---|---|
| Value Added Courses (UG Common) (VAC) | 2 | - | - | - | 02 | 2.5% |
| Skill Enhancement Courses (SEC) | 2 | 2 | - | - | 04 | 5% |
| Multidisciplinary / Interdisciplinary / Foundation Core (FIC) | 3 | 3 | - | - | 06 | 7.5% |
| Major Core (CC) + Specialization (SE) + Core Elective (CE) | 16 | 20 | - | - | 36 | 45% |
| Research / Design / Industrial Practice / Project (RDIP) | - | - | 17 | 15 | 32 | 40% |
| Grand Total | 23 | 25 | 17 | 15 | **80** | **100%** |

VAC- Community Engagement & Social Responsibility
SEC-Problem Solving or Entrepreneurial mindset or Design Thinking
FIC- Mathematics or AIML or Project Management

## M.Tech in VLSI

| Semester-1 | | | | | | |
|---|---|---|---|---|---|---|
| **Category** | **Sub-Category** | **Course Title** | **L** | **T/D** | **P/Pr** | **Credits** |
| VAC | University AEC | Community Engagement & Social Responsibility | - | - | 1 | 01* |
| VAC | University AEC | Research Seminar | - | - | 1 | 01* |
| SEC1 | SEC | Design Thinking | 1 | - | 1 | 02 |
| CC | CORE | CMOS Digital IC Design | 3 | - | 1 | 4 |
| CC | CORE | CMOS Analog and Mixed Signal IC Design | 3 | - | 1 | 4 |
| CC | CORE | VLSI Technology | 3 | 1 | - | 4 |
| CC | CORE | VLSI Physical Design | 3 | - | 1 | 4 |
| Multidisciplinary | School (Engg./Sc.) | AI/ML Techniques | - | 2 | 1 | 3 |
| **Semester Total** | | | | | | **21** |
| **Semester-2** | | | | | | |
| **Category** | **Sub-Category** | **Course Title** | **L** | **T/D** | **P/Pr** | **Credits** |
| VAC | University AEC | Community Engagement & Social Responsibility | - | - | 1 | 01* |
| VAC | University AEC | Research Seminar | - | - | 1 | 01* |
| SEC2 | SEC | Entrepreneurial mindset | 1 | - | 1 | 2 |
| CE | Core Elective | Industry - Core Elective | 3 | - | 1 | 4 |
| CE | Core Elective | Industry - Core Elective | 3 | - | 1 | 4 |
| CC | Core | VLSI Testing and Verification | 3 | - | 1 | 4 |
| CC | Core | Semiconductor Device Modeling | 3 | - | 1 | 4 |
| CC | Core | Advanced HDL based FPGA Design | 3 | - | 1 | 4 |
| Multidisciplinary | University (PSB) | Project Management | - | 2 | 1 | 3 |
| **Semester Total** | | | | | | **27** |

| Semester-3 | | | | | | |
|---|---|---|---|---|---|---|
| **Category** | **Sub-Category** | **Course Title** | **L** | **T/D** | **P/Pr** | **Credits** |
| RDIP | Research / Design / Industrial Practice / Project | Thesis (Project) | - | - | 14 | 14 |
| RDIP | Research / Design / Industrial Practice / Project | Industrial Practice | | | 3 | 3 |
| **Semester Total** | | | | | | **17** |
| **Semester-4** | | | | | | |
| **Category** | **Sub-Category** | **Course Title** | **L** | **T/D** | **P/Pr** | **Credits** |
| RDIP | Internship / Research / Thesis | Thesis | - | - | 15 | 15 |
| **Semester Total** | | | | | | **15** |

# List of Core Electives

| | |
|---|---|
| 1 | Low Power VLSI Design |
| 2 | Semiconductor Device Modelling |
| 3 | RFIC Design |
| 4 | Signal Processing and Computer vision |
| 5 | VLSI Architectures |
| 6 | Hardware Algorithms for Computer Arithmetic |
| 7 | VLSI Interconnects |
| 8 | System on Chip |
| 9 | High Speed VLSI Design |
| 10 | Memory Design and Testing |
| 11 | VLSI Subsystem Design |
| 12 | Sensor Technology and MEMS |
| 13 | Machine Learning |
| 14 | Fault Tolerance in VLSI |
| 15 | System Verilog |
| 16 | CMOS Circuit Design for 5G |
| 17 | Wireless Access Technologies |
| 18 | CAD for VLSI |
| 19 | Advanced topics in VLSI |
| 20 | VLSI Broadband Communication Circuits |
| 21 | VLSI Power Management Circuits |
| 22 | Solar Cell Device Physics and Material Technology |
| 23 | Electronic and Photonic Nano Devices |
| 24 | VLSI Accelerators for AI edge Computing Devices |
| 25 | Integrated Optoelectronic Devices |
| 26 | More than Moore's electronics |