

LAMRIN TECH SKILLS UNIVERSITY PUNJAB

University School of Engineering and Technology (USET)

STUDY SCHEME | B.Tech Electronics Engineering (VLSI Design and Technology)

PROGRAMME DETAILS

Programme Name	B.Tech Electronics Engineering (VLSI Design and Technology)
Industry Partner	Powered by L&T (Larsen & Toubro)
School	University School of Engineering and Technology (USET)
Batch	2025-2029
Duration	4 Years (8 Semesters)
Admission Year	2025

Semester I — First Year

S.No.	Course Name
1	Applied Mathematics
2	Programming for Problem Solving using C++
3	Electrical and Electronics Engineering
4	Elements of Mechanical Engineering
5	English Communication Skills-I
6	Product Design Thinking Framework
7	Electrical and Electronics Engineering Lab
8	English Communication Skills-I Lab
9	Engineering Graphics & Drafting
10	Programming for Problem Solving using C++ Lab

Semester II — First Year

S.No.	Course Name
1	Applied Physics
2	Engineering Mathematics
3	Programming in Python
4	English Communication Skills-II
5	Industrial Applications of Microcontrollers — A Practice Based Approach
6	Environmental Science
7	Engineering Workshop Lab
8	English Communication Skills-II Lab
9	Applied Physics Lab
10	Programming in Python Lab

Note: Workshop Training will be imparted in the Institution at the end of 2nd Semester for Four (04) weeks duration (Minimum 30 hours per week). Industrial tour will also form part of this training.

□ **After Completion of 1st Year — Certificate in Electronics Engineering**

LAMRIN TECH SKILLS UNIVERSITY PUNJAB
University School of Engineering and Technology (USET)
STUDY SCHEME | B.Tech Electronics Engineering (VLSI Design and Technology)

Semester III — Second Year

S.No.	Course Name
1	Microprocessor and Cyber Physical Systems for Industrial Applications
2	Microprocessor and Cyber Physical Systems for Industrial Applications Lab
3	Digital System Design using Verilog
4	Digital System Design using Verilog Lab
5	Electronic Circuit Designs
6	Electronic Circuit Designs Lab (Spice)
7	Network Analysis & Synthesis
8	Professional Ethics & Civic Morals
9	Computer Networks
10	Summer Training (With Project)
11	Open Elective-I (Online Certification Course through MOOC, SWAYAM etc.)

Semester IV — Second Year

S.No.	Course Name
1	Electromagnetic Waves
2	Analog and Digital Communication Engineering
3	Analog and Digital Communication Engineering Lab
4	Wireless and Mobile Communication
5	Applied Industrial IoT
6	Applied Industrial IoT Lab
7	Cloud Fundamentals: Unlocking Microsoft Azure
8	Cloud Fundamentals: Unlocking Microsoft Azure Lab
9	Personality Development Workshop-I

Note: Training will be imparted in the Institution/Industry at the end of 4th Semester for Four (04) weeks duration (Minimum 30 hours per week). Industrial tour will also form part of this training.

After Completion of 2nd Year — Diploma in Electronics Engineering

LAMRIN TECH SKILLS UNIVERSITY PUNJAB

University School of Engineering and Technology (USET)

STUDY SCHEME | B.Tech Electronics Engineering (VLSI Design and Technology)

Semester V — Third Year

S.No.	Course Name
1	Integrated Signal Processing for VLSI Design
2	Integrated Signal Processing for VLSI Design Lab (Matlab/Python)
3	VLSI Chip Design for Industrial Applications
4	VLSI Chip Design for Industrial Applications Lab
5	SoC Design Fundamentals
6	SoC Design Fundamentals Lab
7	Artificial Intelligence and Edge Computing
8	Professional Elective-1
9	Automatic Control System
10	Institutional Training with Project
11	Open Elective-II (Online Certification Course through MOOC, SWAYAM etc.)

Semester VI — Third Year

S.No.	Course Name
1	Drone Technology and its Transformative Applications — A Practitioner's Perspective
2	Drone Technology and its Transformative Applications — A Practitioner's Perspective Lab
3	SoCs for Industrial Automation Practices
4	SoCs for Industrial Automation Practices Lab
5	Design for Testability
6	Analog and Mixed Signal Design for VLSI
7	Analog and Mixed Signal Design for VLSI Lab
8	Optical Fibre Communication
9	Professional Elective-2
10	Personality Development Workshop-II
11	Capstone Works on — Industrial SoC Products

□ **After Completion of 3rd Year — B.Sc. Engineering in Electronics Engineering (VLSI Design and Technology)**

LAMRIN TECH SKILLS UNIVERSITY PUNJAB
University School of Engineering and Technology (USET)
STUDY SCHEME | B.Tech Electronics Engineering (VLSI Design and Technology)

Semester VII — Fourth Year

S.No.	Course Name
1	On Job Deployment / On Job Training

Semester VIII — Fourth Year

S.No.	Course Name
1	On Job Deployment / On Job Training

□ **After Completion of 4th Year — B.Tech Degree in Electronics Engineering (VLSI Design and Technology)**

PROFESSIONAL ELECTIVES — COURSE OPTIONS

Professional Elective-1 (Semester V)

S.No.	Course Name
1	Fabless IC Design Techniques
2	FPGA Based System Design
3	VLSI Physical Design
4	Semiconductor Memory Design
5	Static Timing Analysis
6	CMOS VLSI Design

Professional Elective-2 (Semester VI)

S.No.	Course Name
1	MEMS
2	VLSI DSP Processor
3	Low Power VLSI Design
4	Mixed Signal IC Design
5	Machine Learning for VLSI

PROGRAMME EXIT MILESTONES

- ◆ After Year 1 (Semesters I & II) → Certificate in Electronics Engineering
- ◆ After Year 2 (Semesters III & IV) → Diploma in Electronics Engineering
- ◆ After Year 3 (Semesters V & VI) → B.Sc. Engineering in Electronics Engineering (VLSI Design and Technology)
- ◆ After Year 4 (Semesters VII & VIII) → B.Tech Degree in Electronics Engineering (VLSI Design and Technology)

Lamrin Tech Skills University Punjab | www.ltsu.ac.in | info@ltsu.ac.in