

LAMRIN TECH SKILLS UNIVERSITY PUNJAB

University School of Engineering and Technology (USET)

STUDY SCHEME | B.Tech Electrical Engineering (Smart & Sustainable Power Engineering)

PROGRAMME DETAILS

Programme Name	B.Tech Electrical Engineering (Smart & Sustainable Power Engineering)
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 and 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	Electrical Power Distribution and Automation
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 Electrical Engineering**

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Semester III — Second Year

S.No.	Course Name
1	Network Analysis and Synthesis
2	Digital System Design using Verilog
3	Electrical Machines-I
4	OH and UG Power Transmission Engineering
5	Microprocessor and Cyber Physical Systems for Industrial Applications
6	Digital System Design using Verilog Lab
7	Microprocessor and Cyber Physical Systems for Industrial Applications Lab
8	Electrical Machines-I Laboratory
9	Professional Ethics and Civic Morals
10	Summer Training (with Project)

Semester IV — Second Year

S.No.	Course Name
1	Applied Industrial IoT
2	Applied Industrial IoT Lab
3	High Voltage Engineering
4	Electrical Machines-II
5	Power Systems Analysis
6	Measurements and Instrumentation
7	Professional Elective-I
8	Power Systems Analysis Laboratory
9	Electrical Machines-II Laboratory
10	Personality Development Workshop-I
11	Open Elective-I (Online Certification Course through MOOC, SWAYAM etc.)

Note: Training will be imparted in the Industry at the end of 4th Semester for Four (04) weeks minimum duration.

After Completion of 2nd Year — UG Diploma in Electrical Engineering

Semester V — Third Year

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S.No.	Course Name
1	Renewable Energy and Power Evacuation
2	Automatic Control Systems
3	Power Electronics and Drives
4	Professional Elective-II
5	Utilization of Electrical Energy
6	Power Generation and Economics
7	Control Systems Laboratory
8	Power Electronics and Drives Laboratory
9	Industrial Training with Project

Semester VI — Third Year

S.No.	Course Name
1	Special Electrical Machines
2	Professional Elective-III
3	Smart Grid Technologies and Infrastructure
4	Practitioner's Approach to Power System Protection and Switchgear
5	EHVAC and HVDC Transmission System
6	Protection and Switchgear Laboratory
7	Special Electrical Machines and Drives Lab
8	Personality Development Workshop-II
9	Project Work
10	Open Elective-II (Online Certification Course through MOOC, SWAYAM etc.)

□ After Completion of 3rd Year — B.Sc. in Electrical Engineering (Smart & Sustainable Power Engineering)

Semester VII — Fourth Year

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

Semester VIII — Fourth Year

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

□ After Completion of 4th Year — B.Tech Degree in Electrical Engineering (Smart & Sustainable Power Engineering)

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PROFESSIONAL ELECTIVES — COURSE OPTIONS

Professional Elective-I (Semester IV)

S.No.	Course Name
1	Electrical Drives
2	Power System Dynamics and Control
3	Wind and Solar Energy Systems

Professional Elective-II (Semester V)

S.No.	Course Name
1	Electric and Hybrid Vehicle
2	Power System Reliability
3	Flexible AC Transmissions

Professional Elective-III (Semester VI)

S.No.	Course Name
1	Satellite Communication
2	Sensor Technology and Instrumentation
3	Line-Commutated and Active PWM Rectifiers
4	Energy Efficient Systems

PROGRAMME EXIT MILESTONES

- ◆ After Year 1 (Semesters I & II) → Certificate in Electrical Engineering
- ◆ After Year 2 (Semesters III & IV) → UG Diploma in Electrical Engineering
- ◆ After Year 3 (Semesters V & VI) → B.Sc. in Electrical Engineering (Smart & Sustainable Power Engineering)
- ◆ After Year 4 (Semesters VII & VIII) → B.Tech Degree in Electrical Engineering (Smart & Sustainable Power Engineering)

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