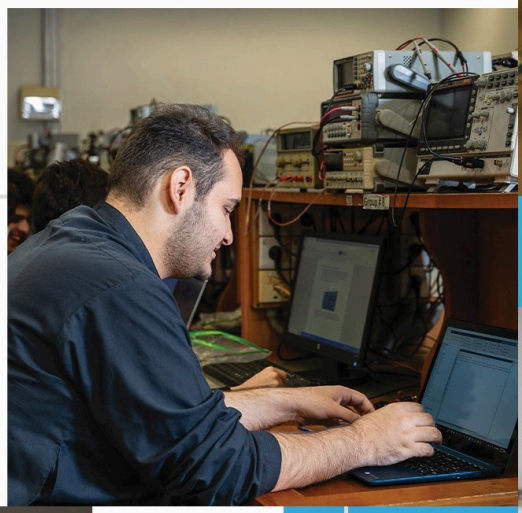
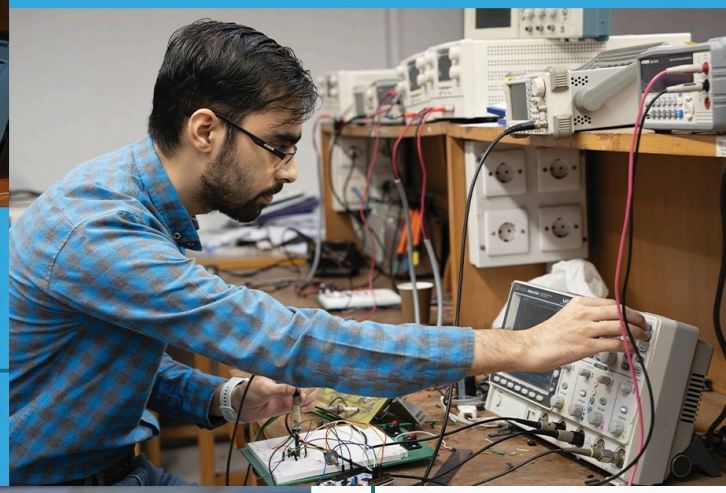
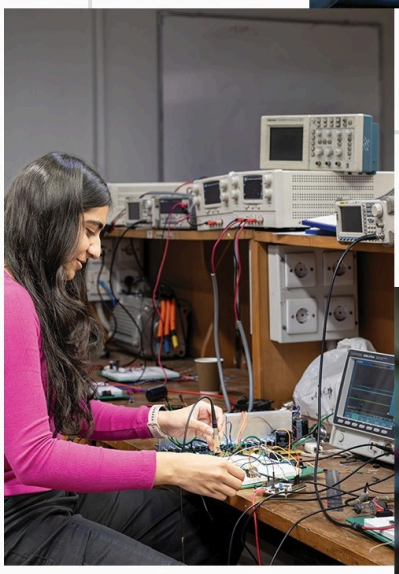
LUMS
A Not-for-Profit University







MS & PhD
ELECTRICAL ENGINEERING

EMPOWERING EVERY JOURNEY

Syed Babar Ali School of Science and Engineering

SYED BABAR ALI SCHOOL OF SCIENCE AND ENGINEERING (SBASSE)

LUMS and SBASSE Fostering a Dynamic Learning Environment

Founded in 1985 as a not-for-profit, LUMS believes in making quality education accessible while breaking academic, geographic, and socio-economic barriers to enhance students' academic exposure.

SBASSE at LUMS is advancing innovative teaching and impactful research in science and technology. The MS programmes offer rigorous, professional, and research-focused training, with two pathways: MS-by-Coursework or MS-by-Thesis. The PhD programmes prepare students for independent, high-quality research. Key milestones include Coursework, Comprehensive (Qualifying) Exams, Thesis Proposal Defense, at least one article in a peer-reviewed journal, and final PhD Thesis Defense.

WHY MS & PHD ELECTRICAL ENGINEERING AT LUMS?

QS WORLD UNIVERSITY RANKINGS BY SUBJECT

- #351-400
  Engineering - Electrical and Electronics
- #401-450
  Engineering and Technology

The Electrical Engineering department at SBASSE engages in multidisciplinary research addressing diverse challenges. Students are trained to develop research questions that span multiple fields and focus on real-world problems. The department is globally ranked and contributes to work with societal and technological impact.

- Training structured to empower students to tackle cross-disciplinary problems
- Research focused on real-world challenges with societal and economic impact
- Cutting-edge labs addressing national priorities like food safety and disease diagnostics
- Unparalleled multidisciplinary experience, unique in Pakistan
- Projects span water informatics, electric vehicles, climate change, and more

ELECTRICAL ENGINEERING EXCELLENCE

The programmes offered by the Department of Electrical Engineering are rigorous and designed to impart specialised, professional, and research-oriented training. The department aims to:

- Produce graduates with attributes essential for leadership in the industry and academic institutions, such as independence of thought, environmental and social responsibility, a professional and ethical outlook, and a strong interdisciplinary foundation built on fundamental scientific principles
- Achieve excellence in cutting-edge research by winning competitive grants and awards, creating and disseminating knowledge at globally recognised forums, and generating intellectual property
- Positively impact society by translating engineering knowledge into solutions for locally relevant problems and enabling entrepreneurship initiatives with a global footprint

THEMES AND COURSES

The Department of Electrical Engineering has gradually grown to include 21 full-time PhD faculty members who teach and direct research. MS & PhD Electrical Engineering programmes comprise the following themes, mapped across different labs and clusters:

DATA (AI HARDWARE AND THEORETICAL FOUNDATIONS)

- Electronics and Embedded Systems Lab
- Smart Data, Systems, and Applications (SDSA) Lab and Signal, Image, and Video Lab
- Advanced Communications (AdCom) Research Lab
- Cyber Physical Networks (CyPhyNet) Lab
- Clinical and Translational Imaging Lab
- Networks and Communications Lab

LIFE (BIOMEDICAL DEVICES AND POINT-OF-CARE HEALTHCARE)

- Bio-Agri Photonics Lab
- Clinical and Translational Imaging Lab and Signal, Image, and Video Lab
- Semiconductor and Nanoelectronics Devices Lab

SUSTAINABILITY (SYSTEMS VIEW OF THE WATER-ENERGY-FOOD NEXUS)

- Advanced Communications (AdCom) Research Lab
- Energy and Power Systems Lab
- Centre for Water Informatics and Technology (WIT) and CyPhyNet Lab
- Semiconductor and Nanoelectronics Devices Lab
- Centre for Urban Informatics, Technology, and Policy (CITY)

CAREER PROSPECTS

Our graduates pursue careers in:

- **Academia and Research:** As faculty and postdoctoral researchers at top global universities; they continue advanced research in specialised fields, often leading to academic publications and collaborations
- **Telecommunications:** Network design, 5G/6G systems, IoT solutions
- **Automation and Robotics:** Industrial robotics, AI-driven control systems
- **Entrepreneurship and Start-ups:** Launching tech start-ups in AI, IoT, renewable energy, etc.
- **Multinational Corporations:** Positions in companies such as Intel, Huawei, Siemens, Tesla, and Samsung
- **Government and Policy:** Advising on national technology and energy policies, and being a part of regulatory authorities like PTA, or NEPRA

"I entered the MS EE programme at LUMS after my BS in Mechatronics & Control and found the exact balance of depth and application I was seeking. Courses in AI, Robotics, and Embedded Systems translated directly into my work as a Research Assistant and Adjunct Faculty. I now mentor students on deploying models to edge devices and collaborate with an international start-up on LLM development, demonstrating the programme's industry relevance.

OSAMA AHMAD
MS Electrical Engineering '24

ADMISSION CRITERIA AND FINANCIAL SUPPORT

ADMISSION IS PURELY MERIT-BASED.

Scan to explore eligibility, deadlines, how to apply to the MS Electrical Engineering programme and find out how LUMS can support your academic journey.

PhD Electrical Engineering is a fully funded programme. Scan to find out details on how to apply.

PHD ELECTRICAL ENGINEERING ADMISSION CRITERIA FOR FOREIGN NATIONALS

Foreign nationals must obtain a visa and a no-objection certificate to study at LUMS, with support provided by the university. Applicants from developing countries may also apply via the TWAS–UNESCO portal: https://rb.gy/j83y7v. Scan to find out more.

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