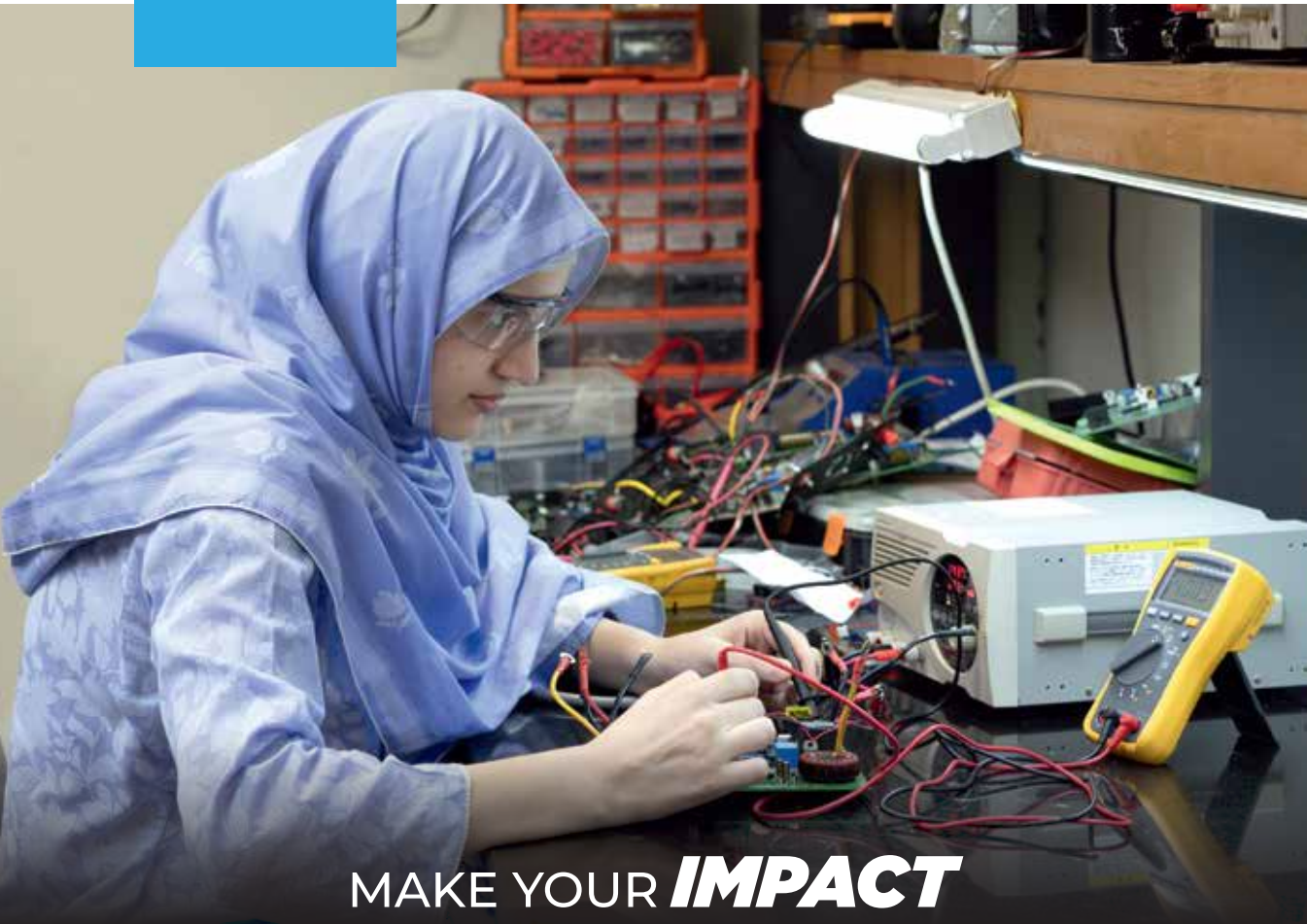




● ● **MS & PHD ELECTRICAL  
ENGINEERING**



MAKE YOUR ***IMPACT***

**SYED BABAR ALI**  
**SCHOOL OF SCIENCE AND ENGINEERING**



# SYED BABAR ALI SCHOOL OF SCIENCE AND ENGINEERING

Founded in 1985 as a not-for-profit, LUMS has pioneered innovative educational trends. The expanse of research and teaching at LUMS offers its community 'Learning Without Borders' by breaking academic, geographic, and socio-economic barriers to enhance students' academic exposure and make education accessible to all.

The Syed Babar Ali School of Science and Engineering (SBASSE) at LUMS is at the forefront of research and teaching in Pakistan. The MS programmes at SBASSE are rigorous and designed to impart specialised professional and research-oriented training to students. All SBASSE departments offer at least two options to choose from: MS-by-Coursework or MS-by-Thesis. The School's PhD programmes prepare students to think scientifically and conduct high-quality research independently. Major milestones that must be achieved for the successful completion of the PhD degree include the Coursework, Comprehensive (Qualifying) Examination, Thesis Proposal Defense, at least one peer-reviewed journal article, and PhD Thesis Defense.



# WHY MS AND PHD ELECTRICAL ENGINEERING AT LUMS?

## LUMS AND SBASSE FOSTER A DYNAMIC LEARNING ENVIRONMENT

The Electrical Engineering (EE) department at LUMS offers an unparalleled experience, distinct from any other in Pakistan, with a focus on addressing inherently multidisciplinary and nuanced problems. The department's endeavours range from water informatics of the Indus Basin, crucial for Pakistan's sustainable water consumption, to a wide array of areas including electric vehicles, climate change, environmental issues, sustainable urban communities, robotics for agriculture, food safety technologies, and disease diagnostics.

The department's labs tackle challenges with significant societal and economic impact on Pakistan. Students receive meticulously structured training, empowering them to formulate research questions that transcend different fields and address real-world problems.

The EE department's commitment to impactful research has earned it a position among the top 400 globally in the QS World University Rankings by Subject. By joining the EE graduate programmes, you will have the opportunity to contribute to transformative work that shapes the future of technology and addresses critical issues in society.

# MS AND PHD

## ELECTRICAL ENGINEERING

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



A quadcopter drone is positioned in the center of the frame, viewed from a low angle. It has four grey propellers and a black frame. The background is a blurred laboratory or classroom with wooden desks, computer monitors, and various pieces of equipment. The lighting is bright, coming from overhead fluorescent lights.

## 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 of the following themes, mapped across different labs and clusters:

### **DATA (AI HARDWARE AND THEORETICAL FOUNDATIONS)**

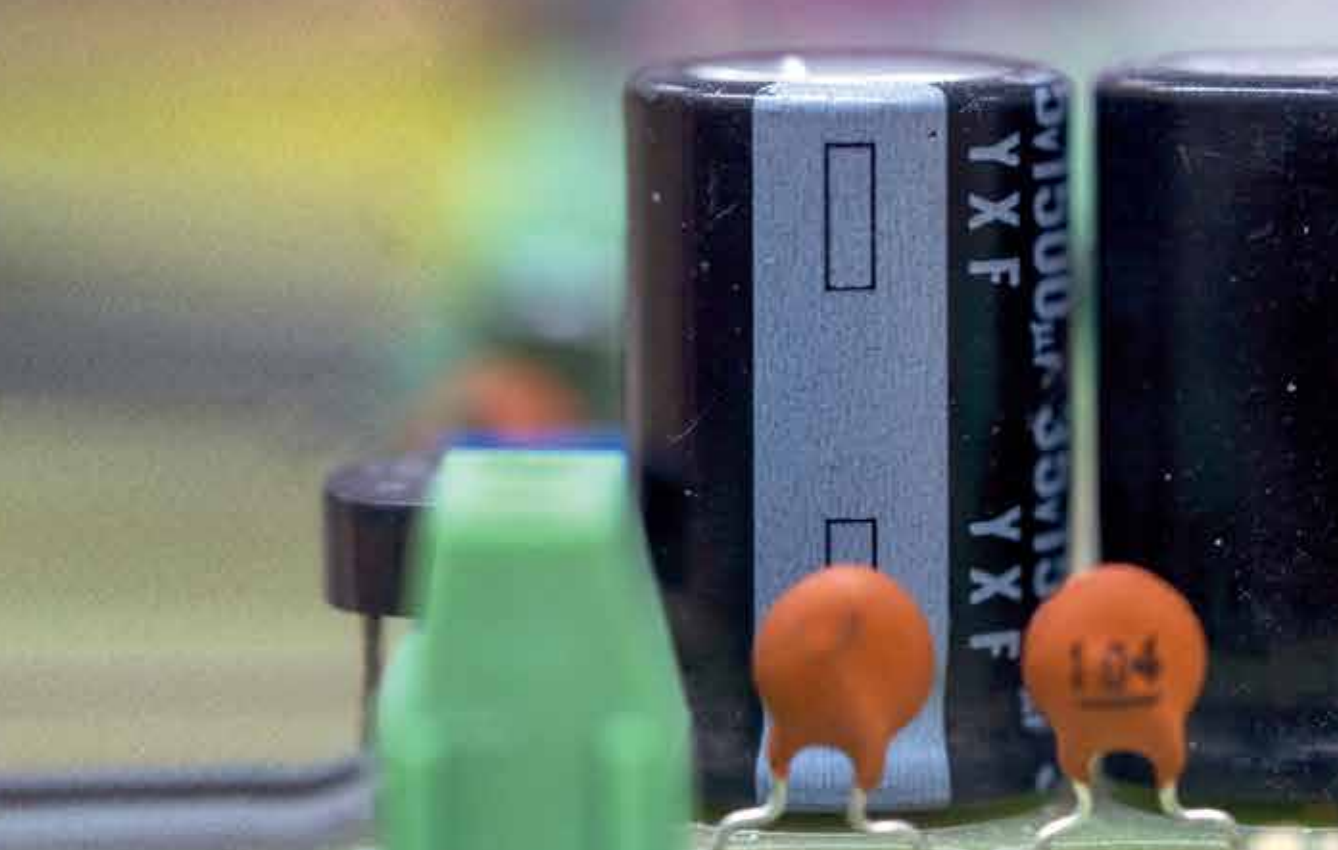
- Electronics and Embedded Systems Lab
- Smart Data, Systems, and Applications (SDSA) Lab and Signal, Image, and Video Lab
- Advanced Communications (AdCom) Research Lab
- Cyber Physical Networks (CyPhyNet) Lab
- Clinical and Translational Imaging Lab
- Networks and Communications Lab

### **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



# ADMISSION CRITERIA

Admission is purely merit-based and rests on the following criteria:

## MS & PHD PROGRAMMES

- Academic Record
- Performance in Admission Tests
- Research Statement (only for PhD applicants)
- Online Application Submission
- Online Submission of Supporting Documents and Fee Payment
- Letters of Recommendation (only for PhD applicants)
- Application Review
- Interview Performance (if shortlisted)

**Note:** These are the minimum criteria applicants must fulfil to be eligible to apply. Meeting these criteria does not guarantee admission to LUMS.

Scan for more information  
on MS Electrical Engineering





# PHD ADMISSION CRITERIA FOR FOREIGN NATIONALS

The following criteria applies to all foreign applicants:

- Academic Record
- Research Background
- Letters of Recommendation
- Online Application Submission
- Online Submission of Supporting Documents
- Application Review
- Online Test and Interview Performance (if shortlisted)

To study at LUMS, foreign nationals must follow requirements such as obtaining a visa and a no-objection certificate from Pakistani authorities. LUMS will assist in this process.

Scan for more information  
on PhD Electrical Engineering



# ARSLAN HASSAN

PhD Electrical Engineering '21

“My journey in the Electrical Engineering Department, supported by expert faculty and state-of-the-art lab facilities, was transformative. Focusing on designing energy-efficient communication systems, I gained skills that were crucial for both academia and industry. This knowledge enabled me to create sustainable solutions with a positive impact on society.”



## FINANCIAL SUPPORT

- Merit scholarships
- LUMS Financial Aid (for local applicants only) aims to reduce financial barriers to higher education, nurturing an inclusive and vibrant community where academically distinguished students can realise their full potential and achieve their professional aspirations. At the graduate level, financial aid is provided in the form of an interest-free loan.
- Fully-funded scholarship for PhD which covers admission, tuition, semester registration fees, and a monthly stipend subject to the supervisor's approval for 4 years
- Options to work as Research or Teaching Assistants (subject to availability)
- External scholarships (support and eligibility for these vary depending on the donor)



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