



## ADMISSION TEST

### LOCAL APPLICANTS

Applicants are required to take the following two admission tests in order to be considered for Fall 2024 admission:

- LUMS Graduate Admission Test (LGAT); and
- LUMS SBASSE Subject Test (Related to Electrical Engineering and Power and Energy Systems subjects)

### INTERNATIONAL APPLICANTS

Applicants residing outside Pakistan are required to take the GRE General Test through the Educational Testing Service (ETS), USA. For further information, please visit [www.ets.org](http://www.ets.org). International applicants will be assessed based on their GRE General Test score only.



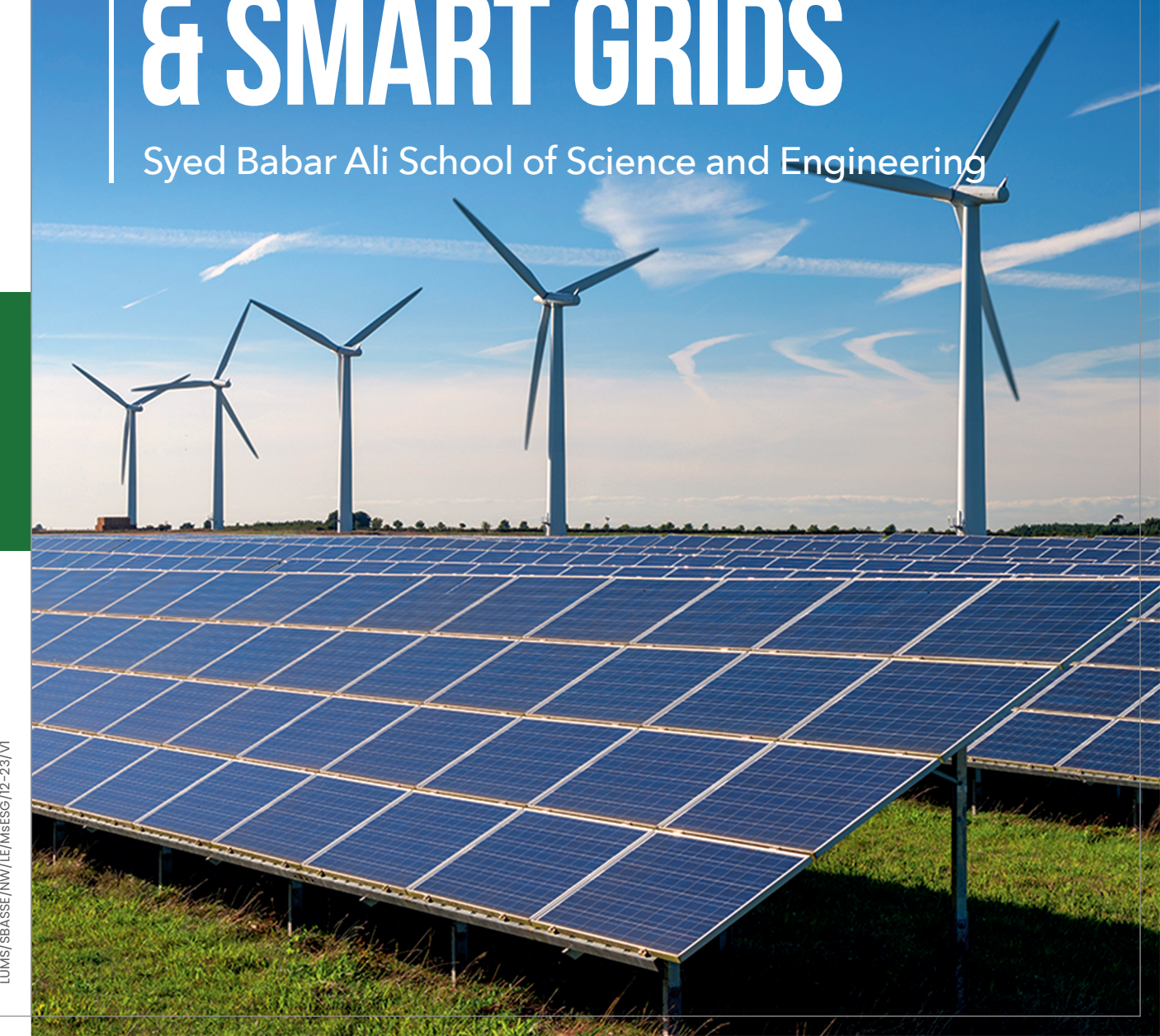
## DR. HASSAN ABBAS

ASSOCIATE PROFESSOR

“The MS in Power Engineering and Smart Grids at SBASSE has a forward-thinking curriculum designed to equip students with expertise in advanced power systems, renewable energy and cutting-edge smart grid technologies. It offers extensive hands-on training, preparing students to become industry-ready professionals. Graduates are set to emerge as innovative leaders, equipped with skills to reshape the power industry’s future in Pakistan and beyond.”

# MS POWER ENGINEERING & SMART GRIDS

Syed Babar Ali School of Science and Engineering



LUMS/SBASSE/NW/LE/M&ESG/12-23/V1

## ACADEMIC BACKGROUND REQUIREMENTS

A minimum of 16 years of education is required for applying to the MS Power Engineering and Smart Grids programme. Applicants are expected to have obtained their Bachelor’s (or Master’s) degree from national or foreign institutions accredited or recognised by the Higher Education Commission (HEC), Pakistan.

Applicants who have obtained their degrees from institutions not listed with the HEC, Pakistan, will be required to obtain an Equivalence Certificate from the HEC. As a minimum academic performance, all applicants must have a CGPA of at least 2.4 (on a scale of 4) or at least 60% marks in all university-level degrees (i.e., 4 years Bachelor’s degree or 2 years BSc degree and 2 years MSc degree).

Applicants must have their Bachelor’s (or Master’s) degree in any one of the following areas:

- Electrical Engineering
- Power Engineering
- Electronics Engineering or Electronics Engineering/Applied Physics
- Mechatronics Engineering
- Computer Engineering
- Other engineering disciplines peripherally related to Power, Electronics or Electrical Engineering

## ADMISSION CRITERIA

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

- Academic Record
- Performance in Admission Test
- Application Review
- Submission of complete online application, application processing fee and supporting documents by the stipulated deadline
- Interview Performance (if needed)
- Letters of Recommendation

**Note:** This is the minimum criteria that applicants need to fulfil in order to be eligible to apply. Fulfilment of this criteria does not guarantee admission to LUMS.

Scan for more information



## FINANCIAL SUPPORT

- Seven merit scholarships
  - Four 100% tuition waivers
  - Three 60% tuition waivers
- Interest-free loans

وہی جہاں ہے تیرا جس کو تو کرے پیدا

علامہ اقبال

## WHY MS POWER ENGINEERING & SMART GRIDS AT LUMS?

# 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.

Syed Babar Ali School of Science and Engineering (SBASSE) at LUMS is making significant strides in the experimentation of teaching and learning, and making impactful contributions to science and technology. 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.

### LUMS AND SBASSE FOSTER A DYNAMIC LEARNING ENVIRONMENT

#### QS WORLD UNIVERSITY RANKINGS BY SUBJECT

#301-350  
Computer Science and Information Systems

#351-400  
Engineering – Electrical and Electronics

#401-450  
Engineering and Technology

#501-550  
Physics and Astronomy

The MS Power Engineering and Smart Grids (PESG) programme's primary objective is to impart engineering design skills in Power and Smart Grids, and to prepare graduates for electricity market transition in Pakistan. Graduates of the programme will be able to respond quickly to changes in the power sector and strategically build solutions for evolving power systems, smart grids, and related applications to allow better organisational decision-making.

## PROGRAMME HIGHLIGHTS

- Up to 7 merit scholarships
- World-class facilities
- Multidisciplinary environment
- Top quality research
- Rigorous curriculum
- Modern teaching methodology

The programme is designed for recent Electrical Engineering graduates as well as seasoned industry professionals in power systems engineering and/or smart grids. The curriculum offers a number of opportunities in a variety of dynamic, rewarding, and demanding industries that are frequently in need of experts:

- Power distribution companies
- Government sector (NTDC, NEPRA)
- Power generation companies
- Power engineering companies
- Renewable energy sector
- Smart grid sector
- Central Power Purchasing Agency (CPPA-G)



## PROGRAMME STRUCTURE

Students pursuing the MS Power Engineering and Smart Grids degree are required to complete 30 credit hours by taking core courses and major electives, as listed below:

### CORE COURSES

- Renewable Energy Systems
- Power System Operation and Control
- Power Systems Protection and Stability
- Smart Grid Technology and Applications
- Electricity Markets

### MAJOR ELECTIVE COURSES\*

- Battery Energy Storage Systems
- Power Electronics
- Digital Control Systems
- High Voltage Engineering
- Modelling and Control of Electric Machine Drives
- Software Engineering for Smart Grids
- Machine Learning
- Advanced Power Systems
- Socio-ecological Systems and Sustainability
- Convex Optimisation

\*Students may choose any two courses

The remaining 6 credit hours can be completed as follows:

- MS with Thesis option: 6 credit hours thesis
- MS with Project option: 3 credit hours MS project and 3 credit hours (1 course) major electives course
- MS with Coursework option: 2 major electives courses

