



**MS & PHD
PHYSICS**



SYED BABAR ALI
SCHOOL OF SCIENCE AND ENGINEERING



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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 PHYSICS AT LUMS?

LUMS AND SBASSE FOSTER A DYNAMIC LEARNING ENVIRONMENT

There are excellent research groups at the Department of Physics that explore various aspects of theoretical Physics, such as cosmology, high energy phenomenology, lattice gauge theory, quantum computation, quantum dynamics, and quantum gravity. The Department houses:

- Laboratories in solid state physics, nanoscience, optics and photonics, radiation physics, and measurement and instrumentation
- Homegrown facilities in diverse areas of Physics, including synthesis of new materials, cryogenic and high temperature transport, electrical, thermal and magnetic property measurements, home-built atomic force microscopy, and magnetic resonance devices
- A wide range of experimental facilities in optics, such as optical spectroscopy, optical and Kerr microscopy, sensitive imaging, light modulation, radiation detection, X-ray fluorescence, quantum optics, single photon detection, electrodeposition, electrospinning, sputter coating, and high speed electronic test and measurement equipment

RESEARCH BY STUDENTS AND FACULTY

The SBASSE faculty has produced around 300 articles, all published in international venues of prestigious ranking.

The Syed Babar Ali Research Awards (SBARA) recognise PhD students for the novelty of their research work, and the potential for lasting impact on their disciplines and the society.





PROMINENT PLACEMENTS

Our graduates ascend to prominent roles, pursuing academics at world-renowned institutions, securing fully-funded PhD positions, and driving innovation at leading organisations in the industry.





ADMISSION CRITERIA

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

MS & PHD PROGRAMMES

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

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on MS Physics





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.

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MUHAMMAD UMAIR

MS Physics '22

“Joining LUMS proved to be one of the best decisions of my life. The Physics department’s dynamic atmosphere, paired with the unwavering support of the faculty, constantly inspired me to expand my horizons and push the boundaries of my knowledge. I was surrounded by a diverse group of classmates who brought fresh perspectives and contributed to stimulating discussions spanning all subfields of Physics. My deepest appreciation goes to my thesis supervisors, Dr. Ata-Ul-Haq and Dr. Ammar Ahmad Khan, whose exceptional mentorship was pivotal in my research journey, particularly in Experimental Condensed Matter Physics. Thanks to their invaluable support and encouragement, I have secured a PhD position at Stevens Institute of Technology, USA, where I will continue to pursue my passion for Physics and research.”



FINANCIAL SUPPORT

- Merit scholarships
- Partial tuition fee waivers for students pursuing MS in Basic Sciences
- 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 that 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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