MEDICAL COLLEGE

Master of Science in Health Data Science (MSHDS)
Admission Information 2025 - 2026

THE AGA KHAN UNIVERSITY

TABLE OF CONTENTS

THE UNIVERSITY

The Aga Khan University (AKU) is a pioneering institution of higher education and research that works to improve quality of life in the developing world and beyond. We educate leaders, generate life-saving knowledge and set an example that raises standards in the societies in which we work. We empower women and the disadvantaged, strengthen pluralism and partner with world-renowned institutions to address problems that affect millions of people.

A not-for-profit institution, AKU was founded in 1983 by His Highness the Aga Khan. As Pakistan's first private university, we paved the way for the growth of the country's private higher education sector. In the early 2000s, the University expanded to Kenya, Tanzania, Uganda, Afghanistan and the United Kingdom.

At AKU, students flourish in a supportive environment that embraces diversity, demands excellence and encourages leadership and direct engagement with real-world challenges. Our graduates go on to study and work at eminent universities and organizations around the world, and to make a difference in their home countries.

AKU is open to all, regardless of race, religion, gender or geographic origin. Two-thirds of students and half of faculty members are women. Admission is based on merit, and our needs sensitive financial assistance programme ensures that individuals from lower-income backgrounds are able to attend.

While we do not discriminate on faith, gender or national origin, we are selective in the students we accept. Our selection process varies by academic programmes, but a common criterion includes fluency in English.

MASTER OF SCIENCE IN HEALTH DATA SCIENCE

The Aga Khan University's Department of Community Health Sciences in the Medical College will launch the Master of Science in Health Data Science (MSHDS) Programme in 2025 - 2026.

The MSHDS programme has been developed to meet the rapidly growing need for health data scientists in Pakistan and other Low- and Middle-Income Countries (LMICs). As healthcare systems generate vast amounts of clinical and epidemiological data, there is an urgent demand for professionals who can transform this information into actionable insights for improving health outcomes, guiding policy, and driving innovation.

By combining expertise in Public Health, Epidemiology, Biostatistics, Computer Science, Mathematics, Machine Learning, and Artificial Intelligence, the programme equips graduates with the skills to analyze complex health data and provide evidence-based solutions. The MSHDS is fully aligned with the global shift towards digital health and data-driven decision-making and addresses a critical gap in Pakistan and the region.

The programme is recognized by the Higher Education Commission (HEC) of Pakistan.

KEY FEATURES

- **Comprehensive curriculum** integrating public health, data science, and informatics.
- **Hands-on training** using real-world datasets, advanced statistical tools, and programming languages (Python, RStudio, SQL, Power BI).
- **Flexible learning mode**: blended delivery with both in-person and online teaching.
- **Research-focused thesis** allowing students to apply machine learning, data analytics, and modelling techniques to real healthcare challenges.

- **Global exposure** through collaboration with international faculty, research centres, and academic networks.

TARGET AUDIENCE

- Physicians, dentists, nurses, and allied health professionals, interested in data analytics.
- Computer scientists, statisticians, mathematicians, and engineers aiming to work in healthcare.
- Health professionals in public, private, or NGO sectors seeking to upgrade qualifications.
- Professionals from Pakistan, East Africa, and other regional countries.

OBJECTIVES

The MSHDS programme aims to:

1. Develop leaders in the emerging field of health data science through a competency-based curriculum aligned with global standards.
2. Equip graduates with knowledge and technical expertise in statistical modelling, machine learning, health informatics, and big data analytics.
3. Enable students to design and conduct research using advanced data science methods to solve public health and healthcare system challenges.
4. Provide innovative and flexible learning experiences combining theory, practice, and interdisciplinary collaboration.

PROGRAMME STRUCTURE

The MSHDS is a **two-year, four-semester programme** (full-time).

- **Total Credits:** 42 (36 coursework + 6 thesis)
- **Delivery Mode:** Blended (In-person + online)
- **Teaching Methods:** Lectures, tutorials, computer labs, case studies, e-learning, and project-based learning.

Course Domains (Core & Electives)

- Applied Machine Learning for clinical and health records
- Deep Learning & Artificial Intelligence in Health
- Biostatistics & Mathematical Modelling
- Epidemiology & Disease Burden Analytics
- Health Informatics & Data Governance
- Big Data Handling & Visualization
- Text Analytics, Computer Vision & Applications in Digital Health
- Spatiotemporal Analysis of Environment and Climate Data

Thesis

A 6-credit research-based thesis is required, which may use primary or secondary data. Students will apply health data science techniques to solve real-world health problems, under supervision of a multidisciplinary thesis committee.

CLASS TIMINGS

Classes are structured to accommodate working professionals. Students attend a two-week in-person block at the start and end of each semester, followed by online classes delivered on weekdays.

RESOURCES

- A highly qualified team of faculty from health sciences, computer science, and data science.
- Access to AKU's computer labs, digital library, high-performance computing tools, and online learning platforms.
- Mentorship from faculty and collaboration opportunities with national and international partners.

EMPLOYMENT OPPORTUNITIES

The job market for a Master of Science in Health Data Science degree in Pakistan presents a unique and promising landscape, characterized by significant growth potential. The field is evolving along two parallel tracks: a top-down, government-led approach focused on national infrastructure and public health initiatives, and a bottom-up, private-sector-driven approach centered on innovative, consumer-facing applications. Successful individuals will possess dual competence in both technical data science and clinical or public health knowledge. They will be critical connectors, leveraging their skills to convert our traditional healthcare system into an efficient, data-driven ecosystem.

Graduates of the MSHDS programme will be well positioned for careers in:

- Academia and research institutions as data analyst and data engineers, analyzing large datasets
- Emerging areas such as AI in healthcare, digital health start-ups, pharmaceutical analytics, and health informatics.
- Telemedicine and Digital Platforms by using AI and machine learning to optimize patient experience, automate processes, and create user-facing dashboards.
- Healthcare Automation as professionals who can develop systems to manage EHRs, patient records, and administrative processes efficiently in hospitals, government, and global health organizations.

STUDENT EVALUATION AND GRADUATION REQUIREMENTS

The following are minimum requirements for progression and graduation:

- A Cumulative Grade Point Average (CGPA) of at least 2.50 is required at the end of each Semester for progression.
- A Grade Point Average (GPA) of at least 2.50 in all course work is required for graduating from the programme.
- Successful completion and defence of the thesis.

Students should note that HEC requires a minimum cGPA of 3.0 out of 4.0 to make an application for a PhD programme.

ADMISSION TO THE MASTER OF SCIENCE IN HEALTH DATA SCIENCE PROGRAMME

Admission to Master of Science in Health Data Science is based on academic merit and potential for leadership. Merit will be evaluated through scholastic achievement of candidates and their performance in

the AKU Admission Test. Leadership potential will be assessed based on interviews, past experience and future plans. Candidates from the public or private sector from Pakistan and overseas may apply. A high academic score in any single discipline or any outstanding achievement alone is not sufficient for selection.

ELIGIBILITY CRITERIA

Preference is given to candidates who have at least one year of full-time work experience after graduation in a health-related field at the time of application (voluntary work, part-time or unpaid internship is not included) and hold at least one of the following degrees are eligible to apply:

Sixteen years relevant qualification such as Bachelors in Computer Science / Data Science / Mathematics / Statistics, BS/BE (Biomedical Engineering), BSc, BSPH, DPT, MBBS, BDS, BScN (Bachelor of Science in Nursing), DVM, D. Pharm, B Pharm, BS Human Nutrition and Dietetics (or equivalent in any allied health related discipline).

ADMISSION PROCESS SUMMARY

Candidates are evaluated in stages:

Stage I	Online submission of application. candidates are invited to write the AKU Admission Test.
Stage II	Candidates who are shortlisted based on the Admission Test will be required to: • submit relevant academic documents, work experience certificate/ letter and reference letters • attend interviews with senior faculty members of the University.
Stage III	Final selection is based on an overall assessment of each candidate's dossier which is formally approved by the University's Admission Review Committee.

ADMISSION TEST

The Admission Test comprises three components: English Language, Quantitative Reasoning and a Subject Specific Exam.

- The English Language component evaluates a candidate's competency in the English language and serve as qualifier.
- The Quantitative Reasoning component is designed to assess problem solving and logical thinking ability.
- The Subject Specific Exam will assess basic knowledge related to the specialty.

The University does not provide any preparation for the Admission Test nor does it authorise any publication or preparatory classes for this purpose.

SHORT-LISTING AND INTERVIEWS

Candidates will be shortlisted based on the Admission Test. Interviews will be conducted for shortlisted candidates only. There will be multiple independent interviews with faculty members of the University. The purpose of the interview is to assess a variety of attributes, including motivation, maturity, social and cultural awareness, knowledge of public health issues in developing nations and evidence of interest, and commitment to the programme.

Interviews are conducted in Pakistan. For all candidates who reside overseas, interviews are conducted over Skype / Zoom.

The AKU Admission Test scores are valid for a period of two years from the date the test is written.

APPLICATION FOR ADMISSION

Applications for admission will be accepted between **September 1, 2025, and September 30, 2025.** Candidates must apply online by logging on to www.aku.edu/apply-online

Applications must be submitted via the online process. Applications will only be accepted if a candidate completes following:

1. Upload the application fee on the online form.

2. Upload CNIC/NICOP both sides as one file or relevant Passport pages (for foreign nationals)

3. HEC attested undergraduate mark sheet and degree (16 years) or receipt from HEC as evidence that an application has been made. (front & back copy pdf)

4. HEC equivalence for 16 years of education or receipt from HEC as evidence that an application has been made. (if applying with Post RN BScN or foreign qualification)

5. For unattested documents, upload HEC receipt as evidence. **This is a mandatory requirement.**

6. Upload Detailed curriculum vitae (see CV specification section)

7. Relevant Work Experience Letter / Certificate

8. Submit the application form online. *(Candidate will receive a copy of the application form on their registered email as confirmation when the application is submitted successfully)*

Incomplete applications or submission of applications after the deadline are not accepted.

NOTE FOR ALL CANDIDATES

Candidates are requested to ensure they meet application eligibility requirements before applying. These are listed in the programme brochure. Moreover, candidates applying online are responsible for completing the application and other requirements according to the published instructions and time schedule.

Aga Khan University reserves the right to admission; to revoke admission and registration if an application is discovered to be inaccurate or incomplete, or if supporting documents are discovered to be fraudulent. Any candidate who presents a fraudulent document in support of an application for admission may be identified to other universities and colleges.

Candidates may apply for multiple programmes simultaneously. Candidates who are shortlisted for interviews in multiple programmes will be required to provide their order of preference. This information will remain confidential with the Admission Office, and the candidates must attend interviews for all shortlisted programmes. If the candidate is accepted in more than one programme, the preference order provided by the Candidate will be considered by the University, the University reserves the right in its absolute discretion to offer the programme, which it determined to be the most suitable for the Candidate and the decision made by the University will be final.

ADMIT CARD

The admit card to allow you to write the test will be received by candidates who apply online on their portal and/or through an email.

In cases where the admit card is not received 12 days before the date of the test; candidates must email the Admission Office at postgrad.query@aku.edu for the required information and application details.

If a candidate would like to write the test at a different test centre from the one originally noted in the application form, candidate must inform the admission office via email at least 72 hours before the test so that information can be sent to the Test Centre. Walk in candidates are not encouraged.

Please Note: The University does not take responsibility to conduct the test for candidates who walk into a Test Centre without information.
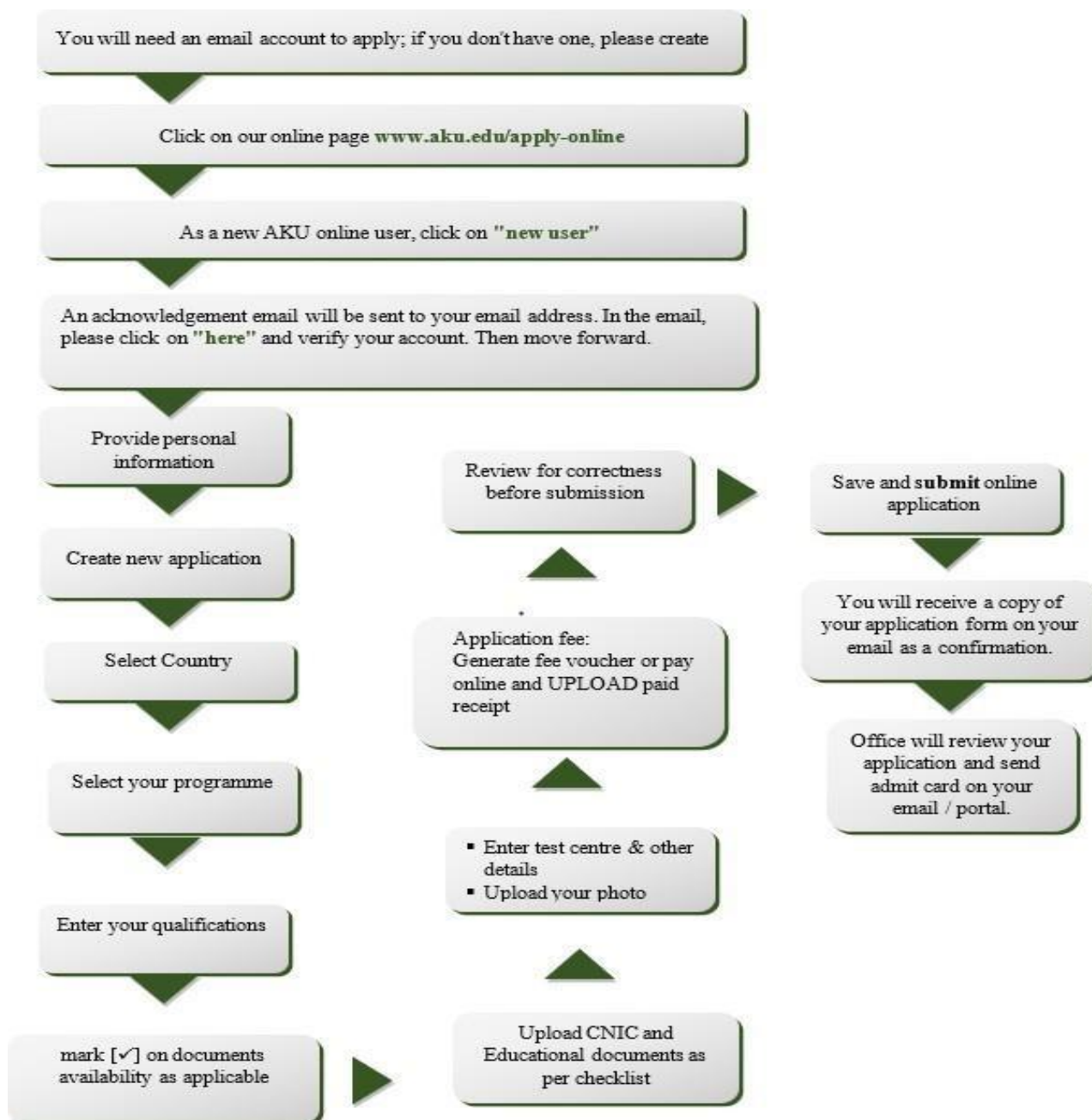
Please note:

To be allowed into the Test Centre to write the Test, candidates must bring:

- A hard copy of the admit card issued by AKU **AND**
- A valid current photo ID card/original CNIC/college ID card/enrolment card for identification. Without these documents, AKU reserves the right not to allow you to write the Test.

APPLY ONLINE

Follow the steps below to apply for an academic programme online:

Note: The photograph should be in JPEG format with 2 MB size and all other documents should be in PDF format with 5 MB file each.

1. Photograph *(see photograph specification section)*

2. CNIC / NICOP *(front & back copy)* or *relevant Passport pages (for foreign nationals)*

3. Detailed curriculum vitae *(see CV specification section)*

4. HEC attested undergraduate mark sheet and degree (16 years) or receipt from HEC as evidence that an application has been made (front & back copy pdf)

5. HEC equivalence 16 years of education or receipt from HEC as evidence that an application has been made. (if applying with Post RN BScN / B.Com & MBA / foreign qualification)

6. For unattested documents, upload HEC receipt as evidence. **This is a mandatory requirement.**

7. Relevant Work Experience Letter / Certificate.

   Application Fee: - **Applying from AKU residential countries* is Rs. 8000/-**

   -**Applying from AKU non-residential countries is US $ 155/-**

   -**(***see mode of payment section for details***)**

   The application fee is non-refundable.
   Candidates must ensure eligibility before applying.

*Afghanistan, Burundi, Kenya, Pakistan, Rwanda, Tanzania and Uganda

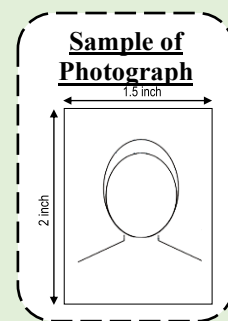# DOCUMENTS REQUIRED UPON SHORTLISTING

1. SSC / O Level / equivalent mark sheet or certificate.

2. HSSC / A Level / equivalent mark sheet or certificate.

3. Consolidated mark sheet of undergraduate qualification / equivalent to 16 years - attested by Higher Education Commission (HEC), Pakistan.

4. Degree of undergraduate qualification / equivalent to 16 years - attested by HEC.

5. HEC equivalence of 16 years for candidates applying with Post RN BScN or foreign degree.

6. All relevant work experience certificates as entered on the form.

7. Detailed curriculum vitae (CV) - *(see CV specification section)*

8. Three reference letters / recommendation to be sent in sealed envelopes or emailed directly by your referee to postgrad.query@aku.edu
   (Referees should be individuals who are well-acquainted with your previous academic work and professional experience. The letters should be current or not more than one-year-old.)

9. Transcript / enrolment information of all the courses undertaken or completed at AKU (if applicable)

10. Latest mark sheets / progress reports, if currently enrolled in any other institution (if applicable)

PHOTOGRAPH SPECIFICATION

Your photograph is a vital part of your application. Please follow these instructions carefully.

- Passport size coloured photograph with a plain background; taken within the last 1 week to reflect your current appearance.
- File size and format: 2 MB and JPEG format.
- The photo should show a clear front view, full face of the person.

If your photograph does not reflect your current appearance, the University will not allow you to write the Admission Test.

Sample of Photograph

CURRICULUM VITAE (CV) SPECIFICATION:

Your CV must include the following:

- Qualifications with grades/percentage and passing year
- Work experiences with job responsibilities and duration
- Courses undertaken or completed at AKU (if applicable)
- Other Continuing Professional Development (CPD) courses
- List of publications (if any)
- Other additional information to support your application

FEES AND FUNDING

Admissions to all the academic programmes at Aga Khan University are based on merit and are needs blind, i.e. without considering the financial background of the student.

Upon acceptance into an academic programme, a student who is unable to pay for the cost of education at the University, may apply for financial assistance.

The financial information including student's fee-paying status, fee structure for the 2025-2026 session, and financial assistance will be available on: www.aku.edu/admissions/fees-and-funding

STUDENTS ON SPONSORSHIP FROM EXTERNAL AGENCIES

Students expecting to receive sponsorships or scholarships from external agencies to complete the programme are requested to submit the relevant documents and approval letter from external agency when accepting the offer of admission.

For more details, please contact Graduate Programme Admission Office, Aga Khan University, Stadium Road, Karachi 74800, Pakistan, Phone: +92-21 3486 4410 / 4412.

ACCOMMODATION

Accommodation for outstation students is arranged in hostels managed by the University based on availability. These are shared, non-air-conditioned, furnished accommodation. Hostel space is restricted to students from outside Karachi only and is offered to graduate programme students, when available. Accommodation is limited.

A fee is charged for all accommodation. Accommodation charges for the 2026-2027 session are available online along with the fee structure. Meals may be purchased separately from the University's cafeteria.

All students living in the university hostels are expected to conform to rules and regulations. Residence is conditional upon proper use and care of the property, considerate behaviour and periodic reappraisal of the student's need for such accommodation.

CONTESTED DECISIONS

In all matters pertaining to the selection of students, fees, grants, evaluation of scholastic performance, discipline and student affairs, the decision of the University shall be final. Appeals in matters of student selection will be considered within 15 days of the announcement of the new class only if the appeal cites circumstances suggesting that the University has violated provisions of its Charter or that there has been failure to comply with the admissions procedure as described in this document.

KEY DATES FOR 2025-26 ADMISSIONS		
September 1, 2025 – September 30, 2025	**Admission Open:** Apply online via www.aku.edu/apply-online	
October 18, 2025	*AKU Admission Test -Pakistan*	**Test Centres** Chitral, Gilgit, Karachi, and Islamabad
	AKU Admission Test - Overseas	Dar es Salam, Kabul, Kampala, Khorog, London, Nairobi. *(Additional overseas centres will be confirmed if there are at least 10 candidates to write the test)*
Please note: *Timings and address for the venue will be stated on the admit card. In case of a change, candidates will be notified through email.*		
Upon Shortlisting	• *HEC attestation on 16 years of undergraduate transcript and degree* • *HEC equivalence* (if applicable)*	
November 2025	Interviews	
Mid-January 2026	Commencement of Classes	

***HEC equivalence applicability**: In case of Post RN BScN and other foreign qualifications, equivalence letter from HEC must be submitted stating that the candidate has completed at least 16 years of education.*

DISCLAIMER

This booklet contains information about the programme offered by the Aga Khan University, Pakistan, for the academic year 2025-26. The information provided is subject to change over time. Candidates aiming to apply for programmes in any other academic year are requested to get updated information about minimum eligibility requirement, application and admission process from the University Admission Office.

THE AGA KHAN UNIVERSITY
Stadium Road, Karachi 74800, Pakistan
Tel: +92-21 3486 4410 / 4412
Email: postgrad.query@aku.edu
Web: www.aku.edu