



# MEDICAL COLLEGE

Master of Philosophy in Biological and Biomedical Sciences (MPhil) Admission Information 2024-2025

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# THE UNIVERSITY

The Aga Khan University 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.

# MPHIL IN BIOLOGICAL AND BIOMEDICAL SCIENCES PROGRAMME

The MPhil in Biological and Biomedical Sciences Programme, launched in 2019, is accredited by the Higher Education Commission (HEC), Pakistan. The programme is designed to produce competent, confident and productive biomedical scientists who can continue their passion for research and learning onto PhD training or have a successful career in academia and industry straight away. Our mission is to educate graduate students with broad-based integrated concepts of basic health sciences in the field of research-based education, to integrate the desired attributes of knowledge, skills and attitude as outcomes and to welcome meritorious applicants from a wide range of disciplines within health sciences. Upon completion of the MPhil, we expect that the students will have the capacity to ask innovative questions and provide answers to these questions using innovative approaches; contributing to their fields by unfolding their creative energy. Our graduates will have the choice to join academia, industry or pursue PhD studies as it dove-tails with AKU's PhD Programme in Health Sciences.

The MPhil programme is both, an interdisciplinary and multidisciplinary programme in Biological and Biomedical Sciences with four specialities/streams.

- Anatomy
- Physiology
- Biochemistry
- Pharmacology

## **PROGRAMME OBJECTIVES**

- To provide an understanding of modern and integrated concepts in biological and biomedical sciences by recognizing and applying subject-specific theories, paradigms, concepts.
- To provide research friendly enabling environment to nurture scientists.
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- Develop skills to apply subject knowledge and understanding to address familiar and unfamiliar problems.
- Recognize the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.
- Develop the ability to read and use appropriate literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application.
- Develop the ability to employ a variety of methods of study in investigating, recording, analyzing and reporting investigations.
- Develop the ability to think independently, set tasks and solve problems.
- Develop an appreciation of the multidisciplinary nature of science and of the validity of different points of view.
- Develop the skills necessary for self-managed and lifelong learning.
- Obtain, record, collate and analyze data using appropriate techniques working by students themselves or in a group, as deemed most appropriate for the subject under study.
- Enable students to understand modern concepts of health and disease, opportunities and dilemmas.

## PROGRAMME STRUCTURE AND DESIGN

The MPhil programme is a two-year full-time programme, requiring 24 credits of coursework and 6 credits of original research. Classes are scheduled between 8:30 AM and 5:00 PM.

Upon successful completion of coursework with minimum CGPA of 2.5 followed by review and approval of research work by internal and external reviewers and successful defence of the thesis, the candidate will be awarded the degree of the "Master of Philosophy in Biological and Biomedical Sciences". Specialization can be undertaken in any one of the 4 disciplines - Anatomy, Biochemistry, Physiology and Pharmacology.

## PLEASE NOTE: HEC REQUIRES A GPA OF 3.0 TO JOIN A PHD PROGRAMME

| Semester I                                                                                              |                                           |                                                           |                                                |  |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------|------------------------------------------------|--|
| Mandatory core courses<br>Cellular, Molecular & Genetic Sciences: Knowledge and Application (4 credits) |                                           |                                                           |                                                |  |
| т                                                                                                       |                                           | odology (3 credits)                                       |                                                |  |
|                                                                                                         |                                           | isualization in R (3 credit<br>Health Sciences (3 credits | · ·                                            |  |
|                                                                                                         | G                                         |                                                           |                                                |  |
|                                                                                                         |                                           | ester II<br>ourses (12 credit hours)                      |                                                |  |
|                                                                                                         |                                           |                                                           |                                                |  |
| Anatomy                                                                                                 | Physiology                                | Pharmacology                                              | Biochemistry                                   |  |
| Brain-Body Axis:                                                                                        | Cardiovascular and                        | Essentials of                                             | Bioinformatics <sup>1,2,3</sup>                |  |
| Development,<br>Structure &                                                                             | Respiratory<br>Sciences <sup>1, 3,4</sup> | Pharmacology and its<br>Applications in                   | (4 credits)                                    |  |
| Function <sup>2,4</sup> (4                                                                              | (4 credits)                               | Clinical Medicine                                         |                                                |  |
| credits)/                                                                                               |                                           | (4 credits)                                               |                                                |  |
| Clinically and<br>Radiologically                                                                        |                                           |                                                           |                                                |  |
| Oriented Human                                                                                          |                                           |                                                           |                                                |  |
| Anatomy (4 credits)                                                                                     | I                                         | I                                                         | 1                                              |  |
| I                                                                                                       |                                           | I                                                         | Introduction to                                |  |
| Principles of                                                                                           | Endocrine and                             | Insight into Adverse<br>Drug Reactions                    | Microbiology and<br>Immunology (4              |  |
| Laboratory Animal<br>Sciences <sup>2,3,4</sup>                                                          | Reproductive<br>Sciences <sup>,,,4</sup>  | (4 credits)                                               | credits)/                                      |  |
| (4 credits)                                                                                             | (4 credits)                               |                                                           | Principles of                                  |  |
|                                                                                                         |                                           |                                                           | Laboratory Animal<br>Sciences <sup>1,2,3</sup> |  |
|                                                                                                         | 1                                         | I.                                                        | (4 credits)                                    |  |
| <br>Neurosciences/                                                                                      | Neurosciences <sup>1, 3,4</sup>           | Pharmaco-                                                 | Contemporary                                   |  |
| Cardiovascular and                                                                                      | (4 credits)                               | epidemiology(4                                            | Concepts in Cancer                             |  |
| Respiratory<br>Sciences <sup>2,3,4</sup>                                                                |                                           | credits)                                                  | and Virology <sup>1,2,3</sup> (4 credits)/     |  |
| (4 credits)                                                                                             |                                           |                                                           | Cardiovascular and                             |  |
|                                                                                                         |                                           |                                                           | Respiratory<br>Sciences <sup>1,2,3</sup>       |  |
|                                                                                                         |                                           |                                                           | (4 credits)                                    |  |
| Thesis research                                                                                         | <br>Thesis research                       | Thesis research                                           | Thesis research                                |  |
| (6 credits)                                                                                             | (6 credit)s                               | (6 credits)                                               | (6 credits)                                    |  |
| Superscript numbers indicate the additional subject streams for which the courses can also              |                                           |                                                           |                                                |  |
| <i>be taken on the advic</i> <sup>1</sup> Anatomy                                                       | <sup>3</sup> Pharmacology                 |                                                           |                                                |  |

<sup>1</sup>Anatomy <sup>3</sup>Pharmacology <sup>2</sup>Physiology <sup>4</sup>Biochemistry

#### **RESEARCH WORK**

The basic research work for the thesis will proceed in parallel with the subject specific coursework. Thus, by the time students reach the second semester, they would have selected a Principal Thesis Supervisor, and started to formulate a research project. When developing the protocol/proposal, approval from the Ethics Review Committee will be required for research on human subjects and/or animals.

The research project of MPhil students, leading to a thesis and the award of degree will follow the AKU policy.

#### MENTORSHIP

In the MPhil programme, mentoring is a custom-built feature. Each student will be assigned a Primary supervisor, and a Secondary supervisor, who would be seasoned scientists in their field of interest and have prior history of supervising the thesis research of graduate students.

#### **PLACEMENTS**

In cases where students require placements, i.e. to attend other institutions and workplaces for specific research exposure, data collection, laboratory or field-based work, etc., the primary responsibility will remain with the Primary supervisor and the student. The arrangement, however, will need to be approved by the Programme Committee of the Department.

#### **PROGRAMME TIMELINES**

Minimum completion time for the MPhil is 2 years. Maximum time limit for the completion of the degree is 3 years for full-time students. An additional one-year extension can be requested for extenuating circumstances with the approval of the Registrar's Working Group.

#### SCHEDULE OF SEMESTERS

The programme will have two regular Semesters (Spring and Fall), each comprising of 17 weeks and an 8-week summer break. The summer break may be used by students to undertake research electives to gain more exposure to research or complete their remedial courses if required.

#### **PROGRESSION AND GRADUATION REQUIREMENT**

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 Cumulative Grade Point Average (CGPA) of at least 2.50 in all the course work is required to be eligible for defence of thesis.
- 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 ELIGIBILITY CRITERIA**

Candidates must have at least 16 years of undergraduate education/4 years of education (124 credit hours) after HSSC or equivalent in Health Sciences with a minimum CGPA of 2.50 or 60% equivalent in percentage.

# **ADMISSION PROCESS SUMMARY**

Candidates are evaluated in stages:

| Stage I   | Online submission of application.<br>Candidates are invited to write an AKU Admission Test.                                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stage II  | <ul> <li>Candidates who are shortlisted based on the Admission Test will be required to:</li> <li>submit relevant academic documents and reference letters;</li> <li>attend interviews with senior faculty members of the University.</li> </ul> |
| 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.                                                                                         |

www.aku.edu/admissions/Documents/admission-process-summary.pdf

# **ADMISSION TEST NOTE**: The test will be conducted online onsite on computers.

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.
- 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 speciality.

Sample test paper for the Test is available on: <u>www.aku.edu/admissions/mphil-bbs</u>

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 on the basis of 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 will be conducted in Pakistan. For all candidates who are residing overseas, interviews will be conducted on Zoom.

# VALIDITY OF TEST SCORES

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 **January 14 and March 14, 2024**. Candidates must apply online by logging on to <u>www.aku.edu/apply-online</u>

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

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

In the form please upload the following

- i. Upload the application fee on the online form.
- ii. Upload CNIC/NICOP both sides as one file or relevant Passport pages (for foreign nationals)
- *iii.* As a mandatory requirement:
  - *a.* HEC attested undergraduate mark sheet/ degree (16 years) or a receipt from HEC as evidence that an application has been submitted. (*front and back copy pdf*)
    - b. 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)
- iv. Upload Detailed curriculum vitae (see CV specification section)

## Incomplete applications or applications submitted after the deadline are not processed.

## NOTE FOR ALL CANDIDATES

Candidates are requested to ensure they meet application eligibility requirements before applying. These are listed in this programme brochure. Moreover, candidates applying online are responsible to complete 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 determines to be the most suitable for the candidate. 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 <u>postgrad.query@aku.edu</u> 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.

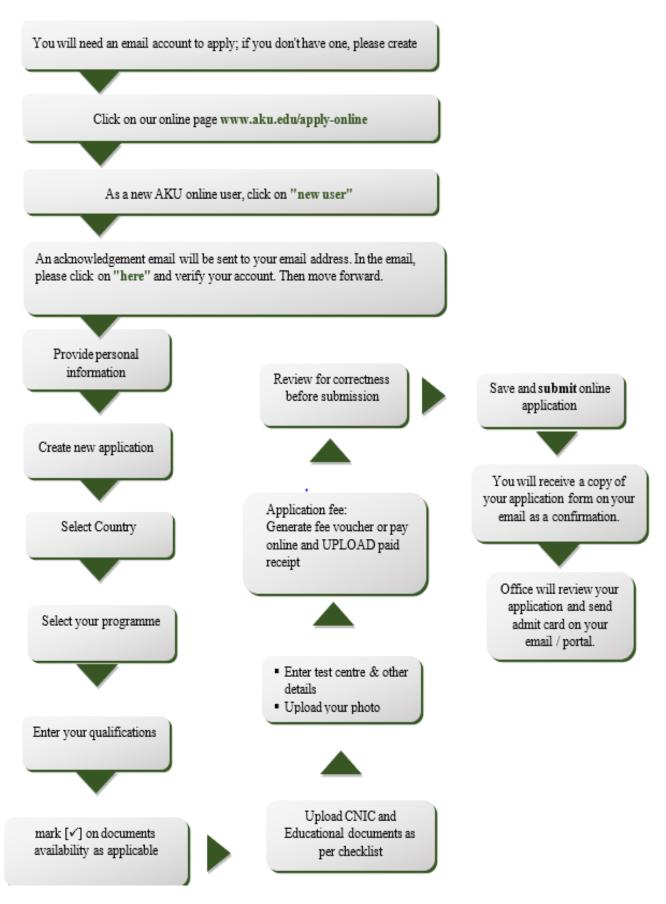
#### Please note:

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:



# PLEASE UPLOAD THE FOLLOWING DOCUMENTS WHEN APPLYING 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. As a mandatory requirement:
  - a. HEC attested undergraduate mark sheet/ degree (16 years) or a receipt from HEC as evidence that an application has been submitted. (*front and back copy pdf*)
  - b. 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)

#### Application Fee: - Applying from AKU residential countries\* is Rs. 7000/-

- Applying from AKU non-residential countries is US \$ 150/-
  - (see mode of payment section for details)

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

<sup>\*</sup>Afghanistan, Burundi, Kenya, Pakistan, Rwanda, Tanzania and Uganda

# DOCUMENTS REQUIRED UPON SHORTLISTING CANDIDATES WILL BE REQUIRED TO SUBMIT HARD COPIES OF THE FOLLOWING (HEC ATTESTED)DOCUMENTS TO THE ADMISSION OFFICE:

- 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. Detailed curriculum vitae (CV) (see CV specification section)
- 7. Two 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.*)
- 8. Transcript / enrolment information of all the courses undertaken or completed at AKU (if applicable)
- 9. Latest mark sheets / progress reports, if currently enrolled in any other institution (if applicable)

# **MODE OF PAYMENT**

Candidates may pay the application fee through any of the following modes. When the fee is paid, please upload the receipt on the online admission portal to complete the application.

## • **FEE VOUCHER** (FOR PAKISTANI CURRENCY ONLY)

Please follow these steps to pay the application fee through fee voucher:

- 1. On the application home page, please click on "Application Fee Information"
- 2. For **payment options**, select "Fee Voucher"
- 3. Click "Yes" to generate the voucher (make sure that your pop ups aren't blocked)
- 4. Take the printed voucher to any branch of Habib Bank Ltd (HBL) and pay the fee. (*Please do not transfer online*)
- 5. Upload the paid voucher by clicking the "Upload Button" on the proof of payment section.

## • ONLINE PAYMENT THROUGH DEBIT/CREDIT CARD (PAKISTANI & US\$ CURRENCY)

Follow these steps to pay application fee online through a debit / credit card:

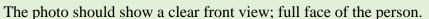
- 1. On the application home page, please click on "Application Fee Information"
- 2. For **payment options**, select "Online Payment" and click yes *(make sure that your pop ups aren't blocked)*
- 3. Complete your payment details on online web portal: <u>https://payonline.aku.edu/</u>
- 4. Upload the payment acknowledgement email or screenshot by clicking the "Upload Button" on the proof of payment section.

In case you are unable to receive the payment acknowledgement, please notify the Finance Office by emailing your query along with tracking Id, name, and programme name at <u>student.finance@aku.edu</u>

## **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.

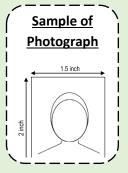


If your photograph does not reflect your current appearance, the University will not allow you to write the Admission Test.

# CURRICULUM VITAE (CV) SPECIFICATION

Your CV must include the following:

- Qualifications with grades/percentage and passing year
- Details of 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 and financial assistance is available on: <a href="http://www.aku.edu/admissions/fees-and-funding">www.aku.edu/admissions/fees-and-funding</a>

#### **SCHOLARSHIPS**

There are 2 scholarships available for candidates selected in the 2024-2025 admission cycle. The top candidates are selected on criteria designed by the University. No applications are required; the University decision is final.

Students receiving the scholarship will have their tuition waived and will receive a monthly stipend of Rs. 25,000/-

All MPhil students will get US \$ 350/- and PKR 50000/- start-up fund for their research project.

## 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 the hostels managed by the University. 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 2024-2025 session is 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 2024-25 ADMISSIONS**

| January 14 – March 14,<br>2024 | Admission Open: Apply online via www.aku.edu/apply-online |                                                                                                       |  |
|--------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|
|                                |                                                           | Test Centres                                                                                          |  |
| May 12                         | AKU Admission<br>Test -Pakistan                           | Chitral, Gilgit, Karachi, and Islamabad                                                               |  |
|                                | AKU Admission<br>Test - Overseas                          | Dar es Salam, Kabul, Kampala, Khorog, London,<br>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.* 

| Up on shortlisting in June | <ul> <li>HEC attestation on 16 years of undergraduate transcript and degree</li> <li>HEC equivalence* (if applicable)</li> </ul> |  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|--|
| June                       | Interviews                                                                                                                       |  |
| February 2025              | 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 2024-25. 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

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