

Pre-requisites for University Study: A Level Subject Selection Guide

Prepared for Applicants to Karachi Grammar School

Please read and understand this document before you select your A Level subjects.

- 1) This information is a general outline. Please see university websites for detailed information on specific institutions or on subject areas or countries not included.
- 2) Information is as accurate as possible at time of publication. It is each student's responsibility to confirm the specific entry requirements of desired universities. There can always be variations in requirements between different insitutions.
- 3) The following criteria are designed to help you meet admission requirements, but following them does not guarantee admission into any institution.
- 4) Students are advised to read and understand this entire document, to be prepared in case the intended degree or country of destination changes.
- 5) All students are advised to meet the requirements for university entry in Pakistan. Please see IBCC Equivalence information on Page 7.
- 6) Information has been carefully presented in the appropriate sections. Requirements meant for one country, course of study or institution cannot be automatically applied universally.

A Level Preparation by Country and Field of Study

Karachi Grammar School

Accounting

Pakistan	No specific requirements. ICAP - Exemptions for ICAP papers may be available for students with English General or English Language / Accounts / Computer Science / Economics / Maths (Further Maths along with P1/P2 or P1/P3). Subject to change, please re-confirm with ICAP.
Canada	See Business. A Level Math usually required, A Level Accounting not required. Professional designation: CA. Minimum BA degree in accounting or in a related subject and related work experience required for licensure.
United States	See Business. A Level Math recommended, A Level Accounting not required. Usual path is undergraduate business with a major in accounting, or accounting at the master's level. Professional designation: CPA (Certified Public Accountant) Minimum bachelor's degree and related work experience required, and state requirements for licensing vary. Not British system.
United Kingdom	See Business. A Level Math required/strongly recommended, A Level Accounting not required. Professional designation: CA. Over 90% of ICAEW members have a bachelor's degree in accounting and finance or a related subject (ex: business, economics). Related work experience required.

Actuarial Science	
Pakistan	A Level Math required.
Canada	A Level Math required.
United States	A Level Math strongly recommended.
United Kingdom	A Level Math required and Further Mathematics highly recommended (occasionally required) as a fourth elective.
Architecture	
Pakistan	Art school-based programmes (NCA/IVSAA/BNU) - Aptitude test requires drawing, but A Level Art not required. Engineering school based programmes - A Level Math, Physics, and Chemistry required (pre-engineering curriculum).
Canada	A Level Physics and Math usually required, and art recommended. Portfolio required. O Level Chemistry rarely required. Aptitude test
United States	Bachelors of Architecture (5yr) programs may require math and physics. No specific requirements for pre-architecture programs; Math recommended. Pre-architecture must be followed by a Master's degree in Architecture. Must have work experience before licencing.
United Kingdom	Requirements vary by university. Portfolio required; A Level Art, Math and or science may also be required.
Art/Design	
Pakistan	No specific requirements, but art background recommended. Aptitude test, including drawing, will be required.
Canada	Portfolio required. A Level art recommended.
United States	O/A Level Art usually not required but is beneficial when a portfolio must be submitted. Most art schools or programs will require a portfolio. Art as a major in a liberal arts context has no prerequisites.
United Kingdom	A Level Art usually required. Most universities require a foundation art course from a UK institution. Portfolio required.
Biology and Biological Sciences	
Pakistan	A Level Biology, Chemistry and Physics may be required. IBCC Pre-medical or General Science AL equivalence may be required.
Canada	A Level Biology, Chemistry and Math is the best combination. Biology may be required. Entrance requirements vary.
United States	No specific requirements. Science background helpful.
United Kingdom	A Level Biology and Chemistry and one of either Math or Physics recommended.

Business (Finance, Accounting, Marketing, Management, etc.)	
Pakistan	No specific requirements. A Level Math recommended.
Canada	A Level Math usually required. AS Level Maths (calculus) sometimes acceptable, a few programmes have no requirement. Some schools require an A grade in A Level Math.
United States	No specific requirements.
United Kingdom	A Level Math usually required. Strong O Level Math grade preferred. Further Mathematics may be required rarely.
Chemistry	
Pakistan	A Level Physics, Chemistry and either Biology or Math. IBCC Pre-engineering or General Science equivalence may be required.
Canada	A Level Chemistry, Physics and Math are recommended. Entrance requirements vary. Biology occasionally required.
United States	No specific requirements. Science background helpful.
United Kingdom	A Level Chemistry and one of either math or Physics.
Computer Science (See Engineering for Computer Engineering)	
Pakistan	A Level Math recommended. IBCC A Level Pre-engineering or O level General Science equivalence may be required.
Canada	A Level Math required. Additional sciences sometimes required (physics/chemistry/biology).
United States	No specific requirements. Math strongly recommended.
United Kingdom	A Level Math usually required. A Level Computer Science helpful.
Economics	
Pakistan	A Level math recommended and may be required.
Canada	A Level math usually required. AS Level maths sometimes accepted.
United States	A Level mathematics strongly recommended.
United Kingdom	A Level math usually required. High grade in O Level math preferred. Economics recommended. Further Maths recommended, occasionally required (usually as 4th elective with math and 2 other traditional subjects).
Engineering	
Pakistan	A Level Physics, Chemistry and Math required by all institutions. Pre-engineering equivalence certificate from IBCC required.
Canada	A Level Physics, Chemistry and Math required (usually even for computer engineering). Chemistry occasionally accepted at the O Level.
United States	A Level Physics and Math strongly recommended. High school math and physics (grades 9-11) required.
United Kingdom	A Level Math and Physics required. A Level Chemistry required for chemical engineering.

Engineering, Software (sometimes found within Computer Engineering or Computer Science)	
Pakistan	Some programmes may not require full pre-engineering subjects. A Level Math (minimum) required.
Canada	See Engineering
United States	See Engineering
United Kingdom	A Level Math usually required. See Computer Science.
Humanities (History, Literature, Languages, Philosophy, Religion, etc.)	
Pakistan	No specific requirements.
Canada	Very occasionally specific A Level subject prerequisites exist. Check desired school/programme.
United States	No specific requirements.
United Kingdom	See programme webpages for discipline-specific requirements. A Level in the relevant subject usually required, if available.
Info. Technology & Information Systems	
Pakistan	Math and computer background helpful. NUST: A Level Math, Physics and either Computer Science or Chemistry required.
Canada	Usually offered within business. A Level Math usually required.
United States	Usually offered within business or computer science. A Level Math recommended.
United Kingdom	A Level Math required.
Law	
Pakistan	Combined BA/LLB degree or BA degree plus local/external LLB degree required to practice in Pakistan. LLB degree plus one year Bar at Law in UK or LLM also acceptable. 2 to 3 A Level subjects, minimum C grade required for entry to University of London external programme LLB course.
Canada	Law not available as an under-graduate degree. A BA in history or political science is good preparation for law school, but not required. British system law, with some schools calling it an LLB and others calling it a JD.
United States	Not British system law. Law not available as an undergraduate degree. Pre-law advising is available at university. Any major can be preparation for the 3-year graduate law programme which leads to a JD (Juris Doctor) degree.
United Kingdom	Admission is very competitive. Traditional A Levels subjects, taken in a single sitting, are preferred. A Level Law may not be advised as one of three principal subjects. To practice law in Pakistan, a student with an LLB must also complete one year Bar at Law in the UK or obtain a BA or an LLM degree.

Mathematics

Pakistan	A Level Math required. At LUMS, math is in SBASSE which requires an A Level science background. See website for full list.
Canada	A Level Math required.
United States	No specific requirements. A Level Math strongly advised.
United Kingdom	A Level Math required. Further Math recommended and may be required if offered by the A Level school.

Medicine and Dentistry

Pakistan	A Level Physics, Chemistry and Biology required. Pre-medical equivalence certificate from IBCC required. AKU prefers a 4th A Level subject (Math is common but other subjects are acceptable). Evidence of leadership potential, extra-curricular medical experience and community service strongly preferred.
Canada	Medicine and dentistry not available as undergraduate degrees. Premedical/dental requirements must be met during university studies. Separate application to graduate medical programmes required, International students do not have access to all programmes. Entry to others will be extremely competitive.
United States	Medicine and dentistry not available as undergraduate degrees. Any undergraduate major is acceptable as long as pre-medical/dental requirements are fulfilled during university studies. Separate application to graduate medical programmes required. International students do not have access to all graduate medical programmes. Entry to others will be extremely competitive.
United Kingdom	A Level Biology, Chemistry and either Physics or Math (in one sitting) required. Competitive candidates will have A*/A at the O and AS Level and in predicted grades. Entry extremely competitive, 4 A Levels with good grades recommended. Community service necessary, medically-related preferred. Interview abroad may be required. Evidence of dexterity for dentistry necessary.

Pharmacy and Pharmacology

Pakistan	A Level Physics, Chemistry and Biology required for pre-medical equivalence certificate from IBCC.
Canada	Minimum 3 A Levels, preferably 4 including Mathematics, Physics, Chemistry, and Biology. Minimum Add Maths at the O Level.
United States	Undergraduate degree or pre-pharmacy programme (2 year minimum) required. Separate application to professional programmes. A Level Biology and Chemistry recommended. Minimum O Level Math and Physics recommended.
United Kingdom	A or B grade in A level chemistry and at least 2 A Levels from Physics, Biology and Math. O Level Biology may be required. A Level Math helpful.

Physics		
Pakistan		A Level Physics, Chemistry and Mathematics required. IBCC pre-medical or General Science equivalence may be required.
Canada		A Level Physics and Math. Minimum O Level, sometimes A Level Chemistry required.
United States		No specific requirements. Science background helpful.
United Kingdom		A Level Physics and Math required. Further Math sometimes recommended.
Psychology		
Pakistan		No specific requirements.
Canada		May be offered with physical sciences, social sciences or both. Science divisions require some A Level science and/or Math. See entry requirements for relevant division.
United States		No specific requirements.
United Kingdom		A Level science subject(s) or Math sometimes required. Good grade in O Level Math required. A Level Biology helpful, as is knowledge of statistical methods.
Sciences		
Pakistan		A level science subjects. IBCC General Science equivalence may be required.
Canada		Usually A Level Math and 2 of Biology, Physics and Chemistry, with the remaining science to have been taken at the O Level.
United States		No specific requirements. Science background at O or A level helpful.
United Kingdom		Usually 2 from A Level Math, Biology, Chemistry, Physics and Computer Science required. Relevant science required. Math may be required.
Social Sciences (Anthropology, International Relations, Political Science, Sociology, etc.		
		See separate entries for Economics and Psychology.)
Pakistan		No specific requirements.
Canada		No specific requirements.
United Kingdom		Traditional A Level subjects preferred. A Level in relevant subject may be required.
United States		No specific requirements.

IBCC Equivalence

Obtaining IBCC (Inter Board Committee of Chairmen) equivalence is an important step for those students:

- 1 who will complete their university studies or graduate studies in Pakistan,
 - 2 who may, in the future, seek a public sector job in Pakistan. IBCC equivalence may be required even if the university degree was earned abroad.
- The Higher Education Commission (HEC) requires students to obtain O and A Level equivalence as a part of the university degree attestation process, and has advised universities to require that the equivalence certificate be submitted as a part of the application for admission.

Requirements:

O Level Equivalence	Pass in 5 Required O Level Subjects, and	Pass in 3 additional O Level subjects
General	English, Math, Urdu, Pakistan Studies and Islamiyat (or approved substitute)	Any 3 subjects. The 3 subjects with highest grades are used.
Science	English, Math, Urdu, Pakistan Studies and Islamiyat (or approved substitute)	Chemistry, Physics and either Biology or Computer Science
A Level Equivalence	O Level equivalence required, and	Pass in 3 A Level Subjects
General	General or Science	Any 3 subjects
Pre-Medical	Science	Biology, Chemistry, Physics
Pre-Engineering	Science	Mathematics, Chemistry, Physics (The Mathematics grade will be used even if there is a Further Mathematics grade.)

Please note:

- 1 Students who want A Level Pre-Engineering equivalence must pass Physics, Chemistry and either Biology or Computer Science at the O Level.
 - a. Students who wish to obtain A Level Pre-Medical equivalence must opt for Biology.
- 2 Non-Muslim students who do not take O Level Islamiyat must pass an IBCC approved substitute.
- 3 Students who pass O Levels from abroad and appear for A Levels in Pakistan, or vice-versa, must pass O Level Urdu, Pakistan Studies and Islamiyat (or approved substitute).
- 4 Foreign national and dual national students may be exempted from some exams. It is the responsibility of the student to make sure that IBCC has approved any exemption and will issue any needed equivalence certificate.
- 5 Your name must be exactly the SAME on all certificates and must match government issued ID.
- 6 IBCC does not accept plastic coated / laminated certificates.
- 7 Please refer to the IBCC website (<http://www.ibcc.edu.pk>) for full information, or write to karachi@ibcc.edu.pk