

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

Prepared for applicants to The Lyceum for September 2018

- **You MUST read and understand this document BEFORE you select your A Level subjects.**
- **Changes of subject will not be possible after admission, so please make sure you make the correct selection of subjects NOW.**

- 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. If you wish, you may request to speak with a College Counsellor before making your final course selection.
- 2) Information is as accurate as possible at time of publication. It is each student's responsibility to confirm specific entry requirements of desired universities.
- 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) Students must choose from one of the approved combinations.
- 6) Students must enroll in General Paper or English Language or Global Perspectives and complete the AS exam.
- 7) Information has been carefully presented in the appropriate sections. **Requirements meant for one country, course of study or institution cannot be automatically applied universally.**

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General Requirements

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A) All Students

General Principles

Universities will judge you based on all of your grades; those you earn in school as well as those from CIE exams.

They will expect strong grades in ALL subjects, not just those related to your future studies. This includes English General/Language/GPR.

Be honest with yourself about your academic abilities. Make sure you can do well in ALL of the subjects you choose to take. There is no net benefit if you try to make yourself a stronger candidate by taking more subjects, but at the same time weaken your application by getting lower grades.

Elective Subjects

- 1) The universities you plan to apply to will determine whether you take 3 or 4 A Level elective subjects.
 - a) 3 electives is usually the minimum required and is appropriate for many universities. Fewer than 3 electives is not considered to be rigorous.
 - b) 4 electives, or 3 electives and an additional subject to the AS Level, is preferable for students who wish to be considered for the most competitive universities or for financial aid or scholarship.
- 2) The most competitive universities abroad (especially US and UK) prefer traditional subjects (math, sciences, humanities, social sciences) rather than accounting/business, and recommend a diverse range of subjects across sciences, humanities and social sciences.
 - a) Business students should consider taking a science (other than mathematics), social science (other than economics), or humanities subject.
 - b) Many universities are happy with A Level business subjects.
- 3) Math is increasingly a prerequisite for admissions in social sciences (esp. economics, psychology) as well as business and engineering.

Required English: General Paper/English Language/Global Perspectives and Research

- 1) English Language/English General/GPR are accepted equally for admissions purposes. (Two exceptions only: See UK item #5, Canada, #2.)
- 2) Universities expect to see strong English skills whether or not a CIE language exam is listed as an entry requirement, and will look for strong grades in school and in CIE examinations. Failing grades can lead to revocation of offers of admission.
 - a) All students benefit from the critical thinking and writing skills developed through the study of English.
 - b) Studying English General/Language improves performance in elective subjects and prepares you for university level work.
- 3) CIE O, AS and A Level language study does not automatically exempt students from having to show a TOEFL or IELTS score.
 - a) Students must confirm whether TOEFL/IELTS test will be required. It is recommended that students obtain any exemption in writing.

Miscellaneous

- 1) Although grades from re-sits are usually acceptable, it is preferable to achieve high grades in the first attempt at any AS or A Level exam.
- 2) Strong candidates' interest in their studies will be reinforced by high attendance figures. Low attendance reflects lack of interest and effort.
- 3) Extracurricular activities and community service are increasingly important in international and domestic admissions.
- 4) Extra subjects given privately are generally acceptable to universities. The student is responsible for providing proof of registration and for obtaining a written copy of the predicted A and/or AS Level grade(s) from the tutor for any private subject.
- 5) Meeting minimum entrance requirements alone does not make a candidate competitive.
- 6) The Lyceum cannot be responsible for changes in admissions or visa requirements.

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General Requirements, continued

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B. Pakistan

- 1) 3 principal subjects required. Urdu as a principal subject is not accepted by some universities.
- 2) An equivalence certificate from the Inter Board Committee of Chairmen (IBCC) is required for most universities and all public universities.
 - a) **Students MUST check with IBCC at the earliest to confirm their eligibility for a certificate as requirements are subject to change.**
 - b) O Level equivalence is often required by universities at time of application. Complete any late O Levels by December of the A2 year. A Level equivalence is then obtained in August after the A2 year: O Level equivalence + A Level results = A Level equivalence. Full equivalence details are available at the Inter Board Committee of Chairmen website: www.ibcc.edu.pk.
- a) Students must first obtain O Level equivalence; Science group or General group
 - O Level Science equivalence: 8 subjects including Biology, Chemistry, Physics, Mathematics, English, Urdu, Pakistan Studies and Islamiyat. Computer Studies may substitute for Biology except for those who will require A Level Pre-medical equivalence. All other subject combinations will receive General equivalence.
 - O Level Pakistan Studies/Islamiyat/Urdu are compulsory unless BOTH O Level and A Level examinations were taken abroad.
 - Non-muslim students may take an alternative to Islamiyat. Confirm with IBCC for acceptable substitutes.
- b) Students obtain A Level equivalence after the issue of A Level results: Pre-medical, Pre-engineering, General Science or Humanities group
 - A Level Pre-medical equivalence: A Level Biology, Chemistry and Physics + O Level Science equivalence
 - A Level Pre-engineering equivalence: A Level Chemistry, Physics and Mathematics + O Level Science equivalence

C. Canada

- 1) Minimum 3 A Level principal subjects required for the top universities.
 - a) 2 AS Level exams may sometimes be accepted in lieu of 1 A Level exam. AS English General may not be accepted.
- 2) TOEFL or IELTS usually required for students coming from international schools. Universities may require TOEFL/IELTS even from students who qualify for standard exemptions listed on websites. Exemption, if desired, must be obtained in writing from each college or university individually.
- 3) Confirm A Level course requirements for desired major. Requirements may be stringent.

D. United States

- 1) University entrance requirements are based on the normal US high school curriculum: 4 years of English, 3-4 years of math, 2 years of history/social science, 1-3 years of lab science, and 2-4 years of the same foreign language. Traditional subjects preferred.
 - a) Some universities may impose minimum course requirements for entry.
- 2) US high school students do not normally study business subjects, - Accounting/BS may not be accepted as college preparatory courses by the most competitive universities, but these courses will not normally prevent you from applying. Many schools are happy with business subjects.
- 3) 4 A level subjects strongly recommended for applying to the most competitive universities and for aid or scholarship.
- 4) SAT Reasoning Test/ACT (critical reading, mathematics and writing) usually required. First test must be taken in the A1 year.
- 5) 2 SAT Subject Tests occasionally required (literature, math I, math II, biology, chemistry, physics, world history, US history, some languages). 3 SAT Subject Tests very occasionally required. Math I and Math II combination is not preferred, and occasionally not accepted.
- 6) TOEFL often required for international students. Many universities now accept IELTS or specified SAT Critical Reading score in lieu of TOEFL. Exemption, if desired, must be obtained in writing from each college or university individually, if not clearly stated on the school's website.

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General Requirements, continued

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E. United Kingdom

- 1) Minimum B grade in O Level math and English usually required. If O Level English is below B, IELTS/TOEFL is generally required.
 - a) Students with lower grades may wish to retake those exams in the A1 year.
- 2) All students must be prepared to provide proof of English proficiency if it is requested as a part of a university's offer, or if required for a visa. TOEFL/IELTS may become a visa requirement; the process is currently under review by the UK Border Agency. Confirm visa requirements at the UK Border Agency website - www.ukba.homeoffice.gov.uk
- 3) Minimum 3 A Level principal subject passes usually required. A Level (but not AS Level) English Language accepted. (See section A above.)
 - a) Sometimes not accepted: A Level Thinking Skills, A Level in your native language (Urdu).
 - b) Not accepted: (English) General Paper, because it is an AS Level exam only; there is no A Level General Paper exam.
- 4) Competitive University Admissions: 3-4 A Level subjects in a diverse range of traditional subjects preferred. (see non-traditional subjects at #5b)
 - a) A combination of 4 A Level subjects is more competitive **if** all of the grades remain high. (Ex. To meet a AAA offer, AAA is better than AABB)
 - b) A minimum of 2, and preferably 3 A Level subjects must be traditional subjects. A 4th A Level subject may be non-traditional.
 - c) Warwick: Avoid A Level subjects with overlapping curricula, for example Business Studies and Economics.
 - d) LSE: Avoid Business Studies/Economics combination at the A Level. Further Maths recommended only as a 4th elective in combination with mathematics and 2 traditional subjects. Diversity of subjects preferred.
NOTE: The fact that Warwick and LSE do not like the BS/Economics combination does NOT mean that other universities in the UK and in other countries do not find this combination of subjects acceptable. Most do.
 - e) Oxford/Cambridge: Competitive candidates will have a minimum of (a) 9-10 A*/As at the O Level, including English Language, (b) at least 4 A Level electives with achieved AS Level results of A and (c) forecasted grades of A and A*.
- 5) An additional AS Level subject is required by some of the most competitive universities. Such universities recommend candidates to complete 4 AS level subjects at the end of the first year, and continue at least 3 of them to the full A Level at the end of the second year. AS Level exams taken at the end of the second year, either alone or combined with the A2 exam, are accepted.
 - a) AS Level English General/Thinking Skills sometimes not accepted, AS English Language accepted.
 - b) Non-traditional subjects (accounting/business studies/art/law) may be taken as an additional AS Level subject.
 - c) 4th AS Level subject expected at LSE, and usually required by King's, UCL and Warwick.
 - d) 4th AS Level subject required by some courses at Bath, Bristol, Edinburgh, Imperial, Nottingham and Southampton.

F. Other Countries

- 1) 3 to 4 A Level subjects usually required. A Level in relevant subject(s) may be required.
- 2) SAT Reasoning Test / SAT Subject Tests very occasionally required.
- 3) TOEFL/IELTS often required. Exemption, if desired, must be obtained in writing from each college or university individually.

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A Level Preparation by Country and Field of Study

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	United Kingdom	United States	Canada	Pakistan
Accounting	See business. A Level math required/strongly recommended. Accounting not required. LSE may accept A Level accounting for the accounting and finance programme. 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.	See Business. A Level maths recommended, 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. State requirements for licensing vary. Not British system.	See Business. A Level mathematics ususally required. Accounting not required. Professional designation: CA. Minimum BA degree in accounting or in a related subject and related work experience required.	No specific requirements. ICAP - Course exemptions available for students with A or B in English, Economics, and/or Maths (Further Maths along with P1/P2 or P1/P3). Subject to change, please re-confirm with ICAP.
Actuarial Science	A Level mathematics required and further mathematics highly recommended as a 4th elective.	A Level mathematics strongly recommended.	A Level mathematics required.	A Level mathematics required.
Architecture	Requirements vary by university. Portfolio required; A Level art, mathematics and or science may also be required.	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.	A Level physics and math usually required, and art recommended. Portfolio required. O Level chemistry rarely required. Aptitude test rarely required. Most programs are pre-architecture, which must be followed by a Master's degree.	NCA/Indus/BNU - Aptitude test requires drawing but A Level art not required. Other schools - A Level math, physics, and chemistry required (pre-engineering curriculum).
Art/Design	A Level Art required. Most universities require a foundation art course from a UK institution before entry. Portfolio required.	O/A Level art usually not required. Most art schools or programs will require a portfolio. Art as a major in a liberal arts context has no prerequisites.	Portfolio required. A Level art recommended.	No specific requirements, but art background recommended. Aptitude test, including drawing, will be required.

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Biology and Biological Sciences	A Level biology and chemistry and one of either math or physics recommended.	No specific requirements. Science background helpful.	A Level biology, chemistry and math is the best combination. Biology may be required. Entrance requirements vary.	A Level biology, chemistry and physics may be required. Pre-medical or general science equivalence may be required.
Business (Finance, Accounting, Marketing, Management, etc.)	A Level math usually required. Strong O Level mathematics grade preferred. Further mathematics required rarely.	No specific requirements. A Level math recommended.	A Level math usually required. AS Level Maths (calculus) sometimes acceptable, a few programs have no requirement. Some schools require an A grade in A Level math.	A Level math recommended. No specific requirements.
Chemistry	A Level chemistry and one of either math (preferably) or physics.	No specific requirements. Science background helpful.	A Level chemistry, physics and math is the best combination. Entrance requirements vary. Biology occasionally required.	A Level physics, chemistry and either biology or math. Pre-engineering or general science equivalence may be required.
Computer Science (See Engineering for Computer Engineering)	A Level math usually required. A Level computer studies helpful.	No specific requirements. Math strongly recommended.	A Level math required. Additional sciences sometimes required (phys/chem/bio).	A Level math recommended. Pre-engineering or general science equivalence may be required.
Economics	A Level math usually required. High grade in O Level math preferred. Economics recommended. Further Maths occasionally recommended (only as 4th elective with math and 2 other traditional subjects).	A Level mathematics strongly recommended.	A Level math usually required. AS Level Maths sometimes accepted.	A Level math recommended and may be required.
Engineering	A Level math and physics required. A Level chemistry required for chemical engineering.	A Level physics and math strongly recommended. High school math and physics (grades 9-11) required.	A Level physics, chemistry and math required. (Even for computer engineering) Chemistry occasionally accepted at the O Level.	A Level physics, chemistry and math required by all institutions. Pre-engineering equivalence certificate from IBCC required by most universities.

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Engineering, Software	A Level math usually required. See Computer Science.	See Engineering	See Engineering.	See Engineering.
Humanities (History, Literature, Languages, Philosophy, Religion, etc.)	Required: English - A Level English literature. History - A Level history. Language - A Level in that language.	No specific requirements.	Very occasionally specific A Level subject prerequisites exist. Check desired school/program.	No specific requirements.
Info. Technology & Information Systems	A Level mathematics required.	Usually offered within business or computer science. A Level mathematics recommended.	Usually offered within Business. A Level mathematics usually required.	Math and computer background helpful. NUST: A Level math, physics and either computers or chemistry required.
Law	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. 8 universities require the LNAT test. To practice in Pakistan, a student with an LLB must also complete 1 year Bar at Law in the UK or obtain a BA or LLM degree.	Not British system. 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.	Law not available as an undergraduate 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.	Combined BA/LLB degree or BA degree plus local/external LLB degree required to practice in Pakistan. LLB degree plus 1 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.
Mathematics	A Level math required. Further math recommended.	No specific requirements. A Level Math strongly advised.	A Level math required.	A Level math required. Entry test for the math major at LUMS requires A Level math plus two of biology/chemistry/physics.

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	United Kingdom	United States	Canada	Pakistan
Medicine and Dentistry	A Level chemistry, biology and either physics or math (in one sitting) required. Competitive candidates will have A*/A at the O Level. Entry extremely competitive, 4 A Levels with good grades recommended. Most universities require either the BMAT or the UKCAT test. Community service necessary, medically related preferred. Interview abroad may be required. Evidence of dexterity for dentistry necessary.	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. International students do not have access to all graduate medical programs. Entry to others will be very competitive.	Medicine and Dentistry are not available as undergraduate degrees. Premedical/dental requirements must be met during university studies. International students do not have access to all graduate medical programs. Entry to others will be very competitive.	A Level physics, chemistry and biology required. Pre-medical equivalence certificate from IBCC required. AKU prefers a 4th A Level subject (math preferred), and evidence of leadership potential, extra-curricular medical experience and community service.
Pharmacy and Pharmacology	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.	Undergraduate degree or pre-pharmacy programme (2 year minimum) required before the 4 year professional programme. A Level biology and chemistry recommended. Minimum O Level math and physics recommended.	Minimum 3 A Levels, preferably 4 including Mathematics, Physics, Chemistry, and Biology. Minimum Add Maths at the O Level.	Physics, chemistry and biology required for pre-medical equivalence certificate from IBCC.
Physics	A Level physics and math required.	No specific requirements. Science background helpful.	A Level physics and math. Minimum O Level, sometimes A Level chemistry required.	A Level physics, chemistry and mathematics required. Pre-medical or general science equivalence may be required.
Psychology	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.	No specific requirements.	May be offered with physical sciences, social sciences or both. Science divisions require some A Level science subjects. See entry requirements for relevant division.	No specific requirements.

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	United Kingdom	United States	Canada	Pakistan
Science	Usually 3-4 A Levels with 2 from math, biology, chemistry, physics and computer science required.	No specific requirements. Science background at O or A level helpful.	Usually A Level math and 2 of biology, physics and chemistry. The remaining science must be taken at the O Level.	A level science subjects. General Science equivalence may be required.
Social Sciences (Anthro, Int'l Relations, Political Sci, Socio, etc.) (See Econ and Psych separate entries)	Traditional A Level subjects preferred. A Level in relevant subject occasionally required.	No specific requirements.	No specific requirements.	No specific requirements.

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