Selection of Medical applicants to UCL

- Holistic approach
- Initial screening of academic achievements and predictions to determine priority for subsequent assessment
- Review of personal statement and reference to determine priority for interview
- Use of the BMAT scores to confirm suitability for interview
UCL Minimum Academic Entry Requirements

• 4 AS levels to include Chemistry, Biology and 2 others (contrasting subject encouraged but not compulsory)
  *AS grades are used to determine priority for further consideration*

• 3 A levels – to include Chemistry and Biology plus one other
  To be best prepared for the UCL programme, A2 modules should ideally be taken in one sitting and without the need to re-sit modules.

• Standard offer AAA at A level plus pass in an additional AS or A level.

• GCSE  B grades (or equivalent) in Mathematics, English language and C grade in a modern foreign language (or commitment to undertake language course e.g. Student Selected Component)
Use of BMAT (by UCL)

For 2013 and 2014 entry:

• No guarantee of interview based on BMAT scores
• However, high scores in BMAT enhance chances of interview
• Average scores for UCL applicants published on website
• Applicants who score significantly below average in BMAT will not be interviewed
• Section 3 essay used in the interview to inform discussion
End of year exam results of UCL medical students who sat BMAT in pilot year
Relationship between BMAT score (Section 1) and exam performance in year 1

Students scoring > 5.0 in BMAT Section 1 usually highest achievers in year 1 (scoring 70% or higher).
Relationship between BMAT score (Section 2) and exam performance in year 1

Students scoring > 5.0 in BMAT Section 2 usually highest achievers in year 1 (scoring 65% or higher).
Average BMAT scores (2012 entry)

- **Section 1**
  - All applicants to UCL: 4.8
  - Those admitted: 5.4

- **Section 2**
  - All applicants to UCL: 4.9
  - Those admitted: 5.5

- **Section 3**
  - All applicants to UCL: 3 \( A/B \)
  - Those admitted: 3.5 \( A \)
Admissions
Tests

Mark Shannon
Group Assessment Manager
ATS tests

- Thinking Skills Assessment (TSA)
- Biomedical Admissions Test (BMAT)
- International Medical Admissions Test (IMAT)
- English Literature Admissions Test (ELAT)
- Sixth Term Examination Paper in Mathematics (STEP)
- Oxford Admissions Tests
TSA – structure of the test

• 90 minutes – 50 five-option multiple choice questions including:
  - Critical Thinking;
  - Problem Solving.

• The Oxford test includes an essay task.

• Results are considered in addition to, not instead of, traditional selection criteria.
TSA - Critical Thinking

Reasoning using everyday written language.
– Ability to identify: main conclusion, reason, assumption, principle, error.
– Designed not to need a large amount of preparation – avoids use of technical terms.
– Does not assume any previous knowledge.
Levels of financing health services in advanced industrial countries have little effect, statistically speaking, on the health of the population. There are countries which spend six times as much per head on health care as Britain, and countries which spend only half as much: their populations end up with more or less the same life expectancy. Therefore arguments about levels of financing Britain’s National Health Service are largely irrelevant to the health of the population.

Which of the following is an underlying assumption of the above argument?

A. The cost of Britain’s Health Service is disproportionate to its effectiveness.
B. Spending is the most effective way of improving a health service.
C. Advanced industrial countries have failed to improve the health of their population.
D. Governments have a responsibility to organise efficient health care systems.
E. Life expectancy is a reliable measure of the health of the population.
TSA - Problem Solving

Reasoning using numerical and spatial skills

- Relevant Selection
  Candidates must select only that information which is necessary and helpful in finding a solution.

- Finding Procedures
  Given all the relevant information, candidates must find a method or procedure that can be used to generate a solution.

- Identifying Similarity
  Typically requires candidates to identify which option displays the same information in a different way.
A publisher produces magazines, all of which have a number of pages which is a multiple of 32. Thus, a magazine can have 32, 64, 96, .... pages. The front cover is always counted as page 1.

The centre spread of the magazine could have pages numbered

A  15 and 16.
B  30 and 31.
C  50 and 51.
D  63 and 64.
E  96 and 97.
In order to be a successful leader, is it better to be loved or feared?
BMAT – structure of the test

Section 1 – Aptitude and Skills
1 hour – 35 multiple choice or short answer questions

Section 2 – Scientific Knowledge and Applications
30 minutes – 27 multiple choice or short answer questions

Section 3 – Writing Task
30 minutes – 1 from a choice of 4 short essay questions
A government study suggested that courses in adult education should be subsidised because they contribute to the economy, raise skills and improve job opportunities. However, where an adult education course is purely for leisure there is no case for subsidy. Therefore, subsidies for courses which are purely for leisure should be abandoned.

Which one of the following is an underlying assumption of the above argument?

A. Unemployment figures are showing an upward trend.
B. Large numbers of adults will attend these courses.
C. There are enough teachers for the courses which would be subsidised.
D. Adults attending these courses will be able to upgrade their jobs if they pass the examinations.
E. Courses which are purely for leisure cannot be economically useful.
Questions 32 to 35 refer to the following information:

In the United States, the number of serious auto accidents is declining. Countrywide, between 1980 and 1993, auto accident fatalities fell from 51,091 to 40,115, and property claims per 100 insured vehicles fell from 4.94 to 4.00, a decrease of 19 per cent. Credit for this remarkable improvement must go to the efforts of federal and state regulators to reduce automobile accidents and increase passenger safety. Laws mandating the wearing of seatbelts, the installation of airbags, a more robust construction of the car body, enhanced vehicle safety standards, better road design, and campaigns against drunk driving have all helped. Despite these impressive improvements in road safety, however, Americans now make more claims for bodily injury, referred to as BI. Between 1980 and 1993, the number of BI claims per 100 insured vehicles rose 33 per cent to 29.3, and the likelihood of a BI claim being filed in an accident that involved a property damage claim rose 64 per cent in the same time period. The ‘whippers’, as the insurance industry calls whiplash claimants, account for this huge increase in BI claims. For the purpose of insurance statistics, whiplash is recorded as “sprains and strains,” and since these sprains and strains nearly all involve the neck and the back, it is reasonable to equate them with whiplash. From 1987 to 1992, claims in the US for sprains and strains increased in proportion to other injuries. In 1987, 75 per cent of BI claims were for sprains and strains, and 45 per cent for “all other injuries.” By 1992 sprains and strains had risen to 83 per cent, and all other injuries had fallen to 17 per cent. This trend is no isolated oddity, for similar changes have happened elsewhere. In Japan annual collision deaths peaked at 4900 in 1993 and fell to little over 4200 by 1997, while over the same period the number of whiplash claims rose from 228,000 to 252,000.


33 The data concerning the proportions of different BI claims in paragraph 3 would be puzzling without which one of the following explanations?

A Whiplash accounted for most of the injuries classified as strains and sprains.
B Some of the claims were for sprains and strains along with other injuries.
C Not all of the claims made to insurance companies were for genuine injuries.
D The number of minor injuries has risen in contrast with number of fatal accidents.

34 Estimate the number of BI claims per 100 insured vehicles in 1980. Give your answer to the nearest whole number.

35 Which one or more of the following offer some explanation for the apparent anomaly in the trend for bodily injury claims, especially strains and sprains, as against property claims. (Shade all that apply.)

A Doctors are divided in their opinion as to whether or not whiplash is a bona fide condition.
B Many lawyers have introduced a no-win-no-fee service to claimants seeking compensation for personal injury.
C The severity of strains and sprains is difficult to assess whereas damage to a vehicle is directly observable.

32 What was the percentage decrease in fatalities in Japan between 1993 and 1997? Give your answer to the nearest whole number.
If someone has a condition which makes their homeostatic system less responsive, how would the shape of the graph be altered?

A  1 would be earlier  
B  1 would be less steep  
C  2 would be earlier  
D  2 would be higher  
E  3 would be steeper  
F  3 would be earlier
3 There is more to healing than the application of scientific knowledge.

Briefly define ‘scientific knowledge’. Explain how it might be argued that medical treatment that is not wholly based on scientific knowledge is worthless. Discuss whether there can be approaches to healing that are valid but not amenable to scientific experiment.
IMAT – structure of the test

Two hours – 80 five-option multiple choice questions:
- 40 Thinking Skills
  20 Critical Thinking
  20 Problem Solving
- 18 Biology
- 11 Chemistry
- 11 Physics & Mathematics
If more workers worked for only four days each week there would be fewer commuters, and therefore less traffic congestion and less pollution. Also, fewer people would be unemployed because there would be more work to go around. There is evidence that part-time workers are absent from work less often than full-time workers, so a person working a four-day week would be more productive. Less work means less pressure, which means less stress and people would be happier.

Which one of the following can be drawn as a conclusion from the above passage?

A  People choosing to work a four-day week would have to take a 20% pay cut.

B  There would be less pressure on the health services if most workers were on a four-day week.

C  The economy would be more competitive if people worked more productively.

D  The government should enforce a four-day working week.

E  There would be many benefits to working a four-day week.
The law of gravitation states that the gravitational force between two bodies of mass $m_1$ and $m_2$ is given by:

$$F = \frac{Gm_1m_2}{r^2}$$

$G$ (gravitational constant) = $7 \times 10^{-11}$ Nm$^2$ kg$^{-2}$

$r$ (distance between the two bodies) in the case of the Earth and Moon = $4 \times 10^8$ m

$m_1$ (Earth) = $6 \times 10^{24}$ kg

$m_2$ (Moon) = $7 \times 10^{22}$ kg

What is the gravitational force between the Earth and the Moon?

A  $1.8375 \times 10^{19}$ N

B  $1.8375 \times 10^{20}$ N

C  $1.8375 \times 10^{25}$ N

D  $1.8375 \times 10^{26}$ N

E  $1.8375 \times 10^{28}$ N
Admissions Testing Service

ELAT

90 minute essay paper
eight-page answer booklet
The following extracts from longer texts offer different perspectives on the theme of poverty and destitution. They are arranged in reverse chronological order by date of composition or publication. Read all the material carefully, and then complete the task below.

(a) An extract from *How the Poor Die* (1946), an essay by George Orwell

(b) An extract from *Widowers’ Houses* (1892), a play by... page 5

Task:

Select two or three of the passages (a) to (f) and compare and contrast them in any ways that seem interesting to you, paying particular attention to distinctive features of structure, language and style. In your introduction, indicate *briefly* what you intend to explore or illustrate through close reading of your chosen passages.
STEP

Three papers, of which candidates typically take two (choice depends on A levels studied and university offer)

3 hours - six questions from 13

8 Pure Mathematics
3 Mechanics
2 Statistics
A light spring is fixed at its lower end and its axis is vertical. When a certain particle \( P \) rests on the top of the spring, the compression is \( d \). When, instead, \( P \) is dropped onto the top of the spring from a height \( h \) above it, the compression at time \( t \) after \( P \) hits the top of the spring is \( x \). Obtain a second-order differential equation relating \( x \) and \( t \) for \( 0 \leq t \leq T \), where \( T \) is the time at which \( P \) first loses contact with the spring.

Find the solution of this equation in the form

\[
x = A + B \cos(\omega t) + C \sin(\omega t),
\]

where the constants \( A, B, C \) and \( \omega \) are to be given in terms of \( d, g \) and \( h \) as appropriate.

Show that

\[
T = \sqrt{d/g} \left( 2\pi - 2 \arctan \sqrt{2h/d} \right).
\]
Oxford Tests

Classics Admissions Test (CAT)
History Aptitude Test (HAT)
Mathematics Aptitude Test (MAT)
Modern Languages Admissions Test (MLAT)
Oriental Languages Aptitude Test (OLAT)
Physics Aptitude Test (PAT)