



UNIVERSITY OF
OXFORD

Physics

“The prestige of the university was clearly important but I was particularly impressed by the breadth the course offered” (Rosie Batty, student)



Why Physics?

The big questions

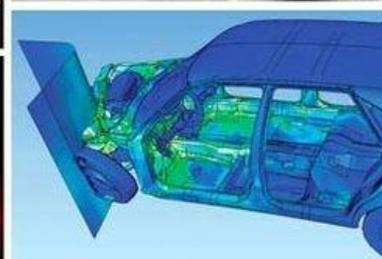
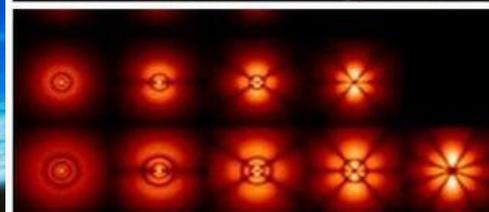
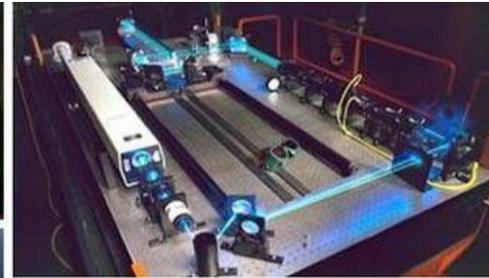
New discoveries

Technology

Careers

Like Science?

It began with Physics



“Physics is crucial to understanding the world around us, the world inside us, and the world beyond us.” (APS)

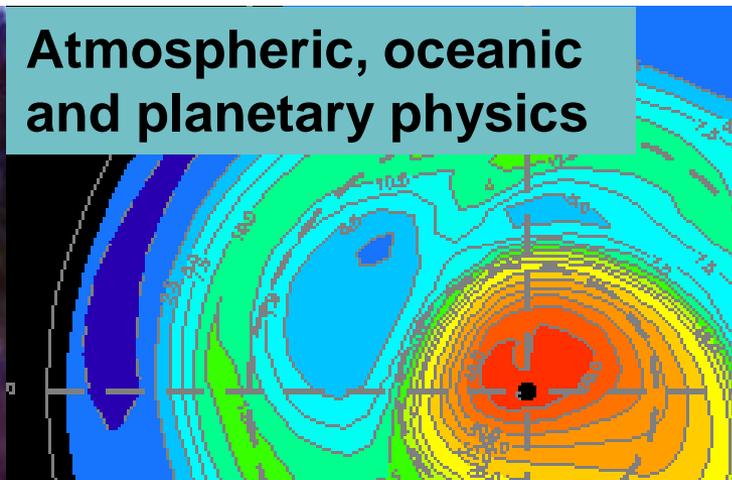


Physics at Oxford

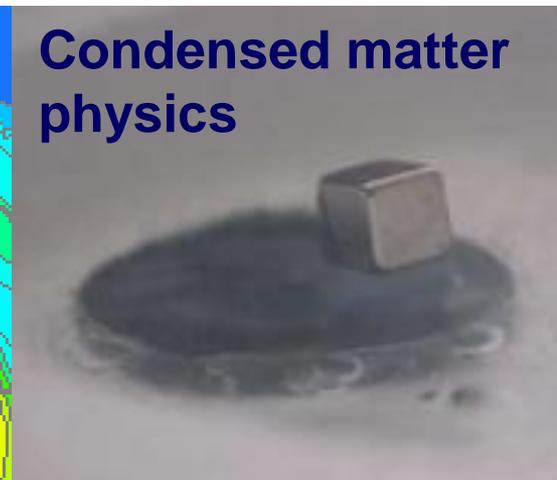
Six sub-departments covering most areas of Physics research



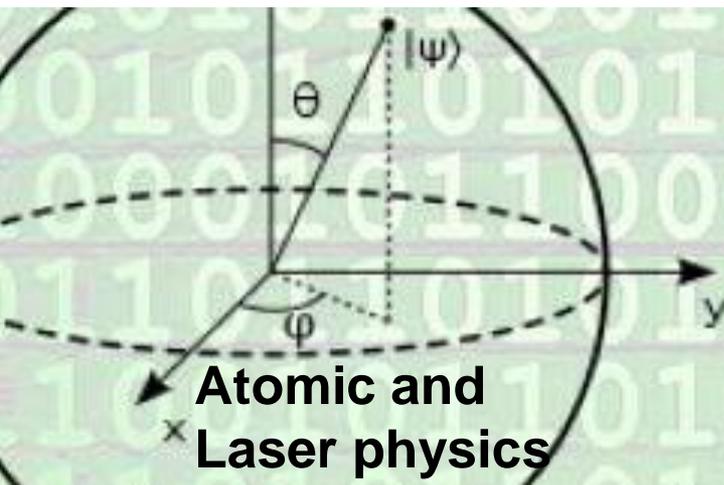
Astrophysics



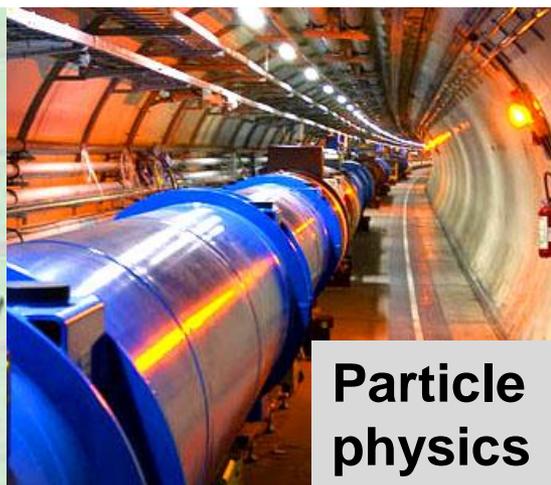
Atmospheric, oceanic and planetary physics



Condensed matter physics



Atomic and Laser physics



Particle physics

Theoretical physics

$$H_3 = QR$$
$$\alpha = \int_{\alpha} H_3$$
$$F_{\vec{a}} =$$
$$N_{\alpha} =$$

→ # ∫



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Why Physics at Oxford?

- 180 undergraduates - one of the largest departments in the UK
- Top ranking university – graduate prospects
- Accredited by the Institute of Physics
- A broad curriculum which covers all areas of physics
- Mathematically based approach – stretching and challenging





Course overview

Undergraduate Physics degree courses:

BA: Physics 3 years

MPhys: Physics 4 years

Joint course:

MPhysPhil: Physics & Philosophy 4 years



Department	College
Lectures	Tutorials
Practical work	Classes

“An unmatched opportunity to be tutored by the leading experts in your field”

(Deyan, student)





Year 1, Year 2 and Year 3

Compulsory courses

Year 1

Four compulsory courses:

Mechanics & Special Relativity
Electromagnetism, Optics & Circuit Theory

Two maths courses covering:
Vectors, matrices, complex numbers,
calculus & wave motion

Year 2

Three compulsory courses:

Thermal Physics
Electromagnetism & Optics
Quantum Physics

Year 3

Four compulsory courses
(BA)

OR

All six compulsory courses
(MPhys)

Flows, Fluctuations & Complexity
Symmetry & Relativity
Quantum, Atomic & Molecular Physics
Sub-Atomic Physics
General Relativity & Cosmology
Condensed-Matter Physics

Optional units

Optional units

Functions of a Complex Variable
Astrophysics: from Planets to the
Cosmos

Quantum Ideas

Energy Studies

Classical Mechanics

Financial Physics

Medical and Health Physics

Introduction to Biological Physics

Plasma Physics

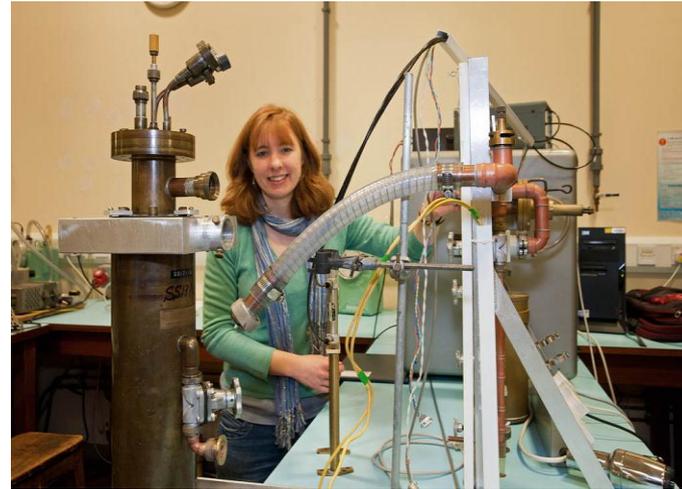
Advanced Quantum Mechanics

Particle Accelerator Science

Physics of Climate Change

Stars and Galaxies

Teaching and Learning Physics in
Schools



From other Departments or Faculties

History of Science

Philosophy of Science

Language Option (French and Spanish or
German)

Philosophy of Space-Time

Philosophy of Quantum Mechanics

Practical teaching

“Great demonstrators”

“Interesting practicals”

*“I’ve learnt more in
optics than in lectures”*



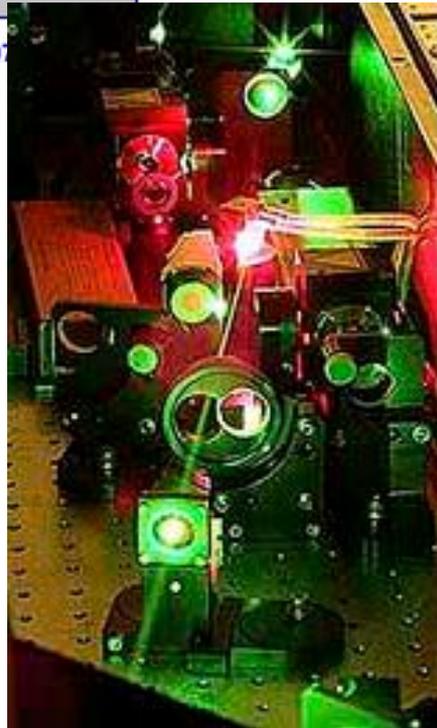
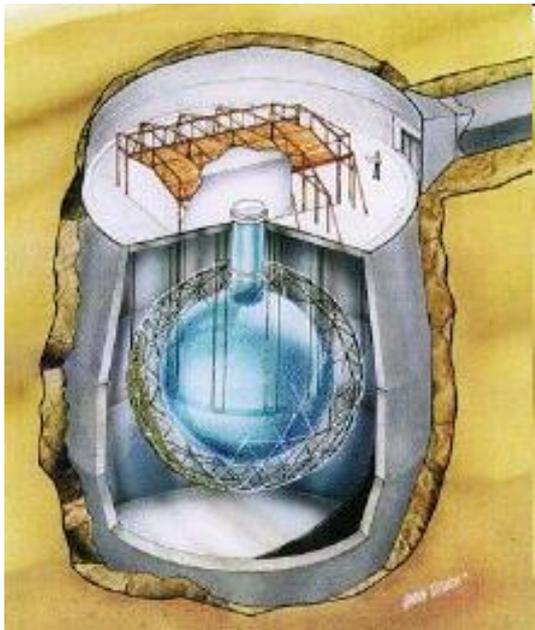
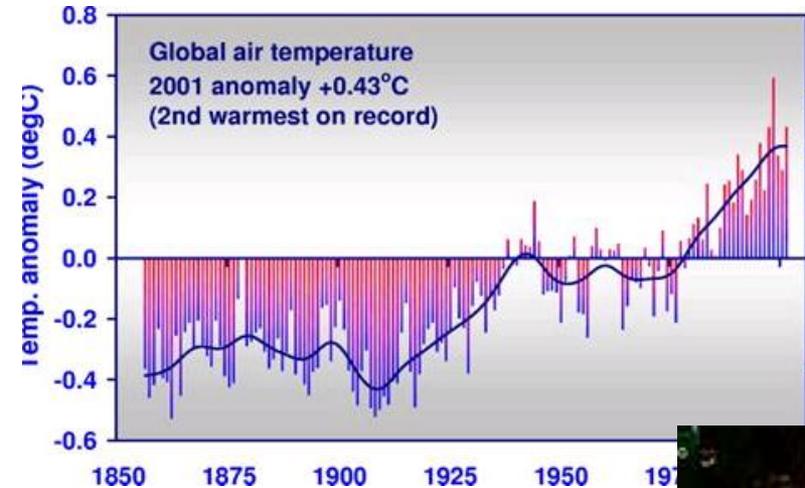


Physics Year 4: MPhys

Fourth Year Major Options

Two courses from:

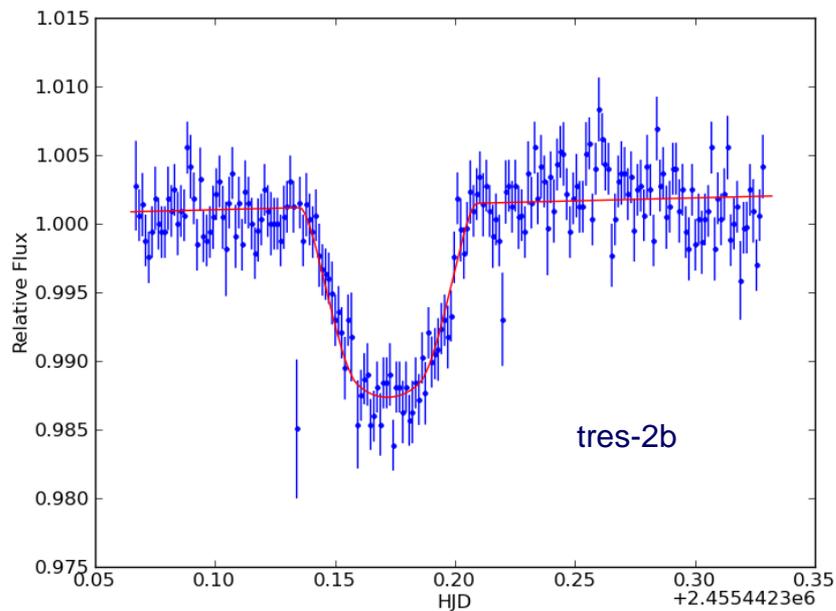
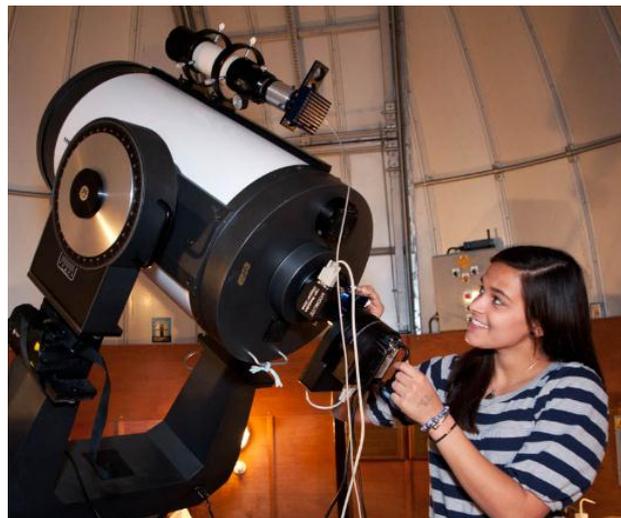
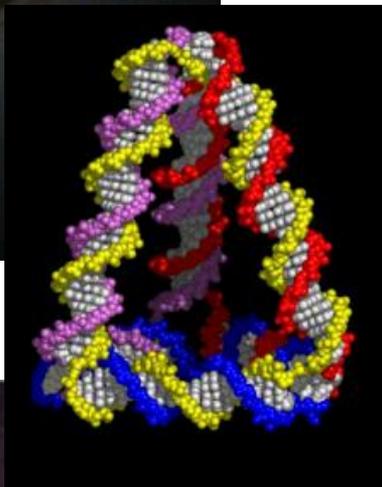
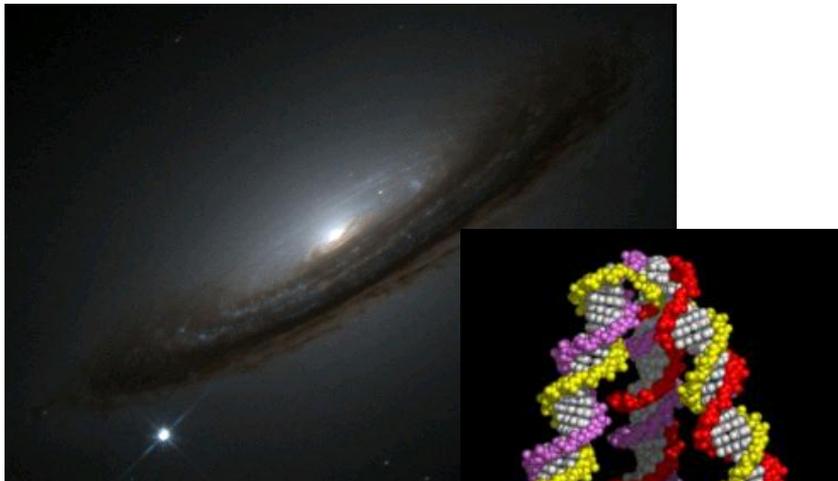
- Astrophysics
- Biological Physics
- Condensed Matter Physics
- Laser Science and Quantum Information Processing
- Particle Physics
- Physics of Oceans and Atmospheres
- Theoretical Physics

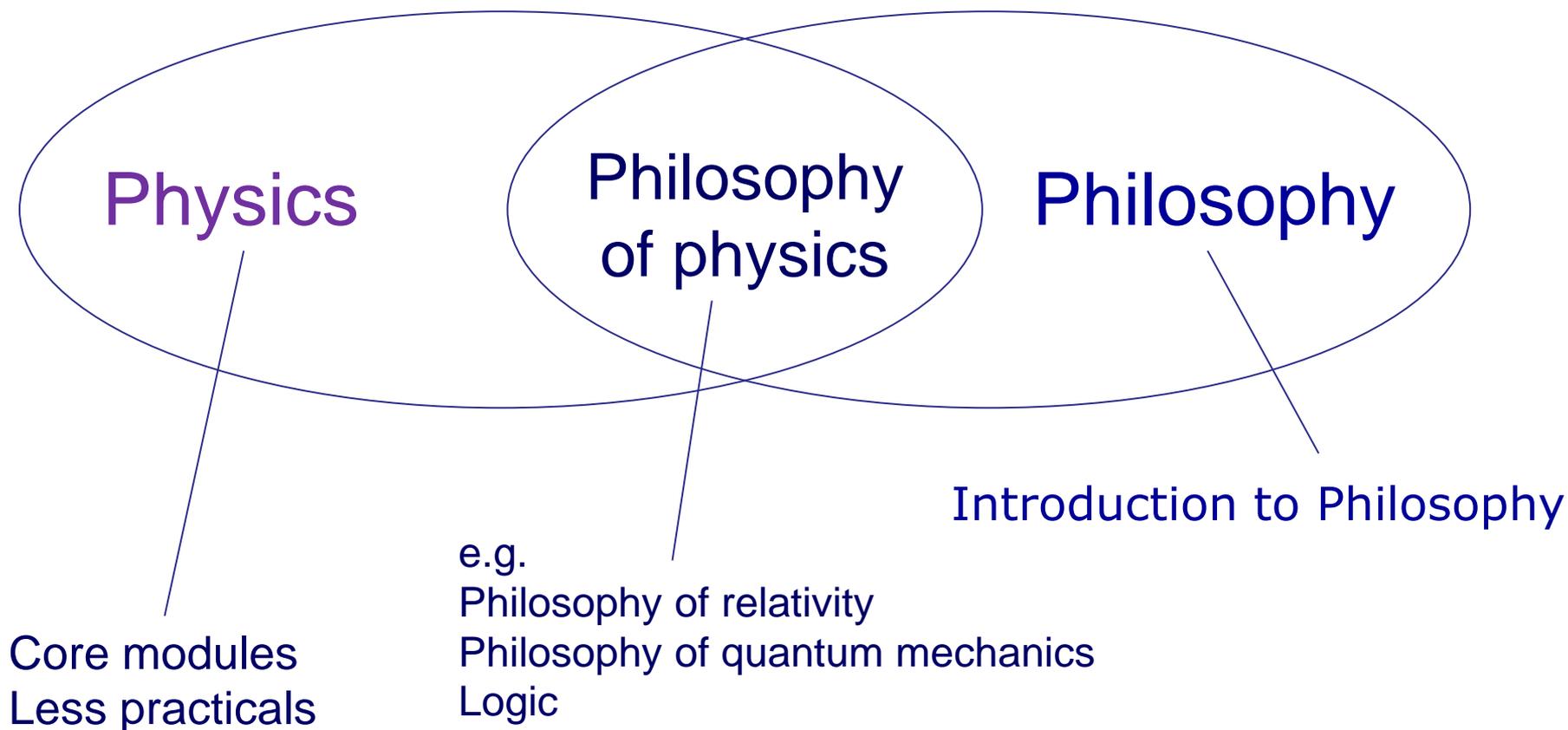




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MPhys Projects





Specialise in the 4th year

*“If you want to know everything there is to know about ‘the universe’,
Physics and Philosophy is a good place to start” (Áron Pólos, student)*

Admissions to Physics



Course requirements - summary

A-level requirements:

	Essential subjects	Recommended subjects	Helpful subjects
Physics	Physics and Maths	Inclusion of FP1,FP2 and FP3 modules, mechanics modules are also useful	Further Maths

- Offer **A* A A** or any other equivalent

Other qualifications also welcome:

IB: 38 - 40 including core points (7,6,6 at HL) **40 for MS/MEM**

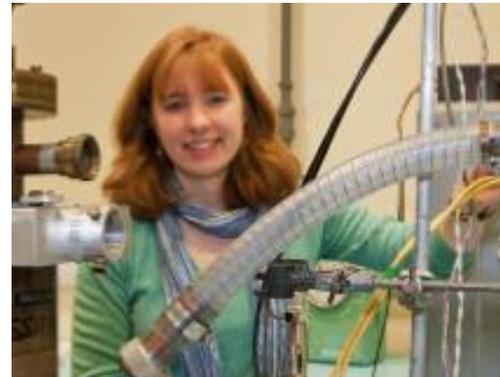
Welsh Baccalaureate: Advanced Diploma with A*A at A Level alongside the core certificate at Level 3

Scottish Highers: AAAAA or AAAAB, Advanced Highers AA/AAB

Pre-U: D2D3D3

Admissions

- The application deadline is **15th October 2012**; we do not accept late applications
- All candidates applying for **Physics & Physics and Philosophy** must do an **aptitude test** in Physics and Maths (the PAT)
- Interviews occur around the second week in December
- Candidates for **Physics** may specify **Materials Science** as a second choice course. Arrangements for 2013 entry are still to be arranged, but it will probably be done via email





Physics Aptitude Test

This test is normally held on the first Wednesday in November and is ordinarily taken at your own school or college

A single two hour test, covering both **Physics** and **Mathematics**.

- Calculators *will not* be permitted for this two hour test
- Concentrates on core knowledge common to all A-level syllabuses
- Sample papers available from admissions office or Physics website:

<http://www.physics.ox.ac.uk/admissions/undergraduate/apptests.htm>

	Applicants	Shortlisted	Acceptances
2010/2011	1013	497	201
5 Yr Average	880	481	199



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Courses and Colleges

**There are 30 undergraduate colleges:
Make sure your choice offers the course you want**

Physics

ALL EXCEPT:

Harris Manchester
Pembroke

The college to which you apply is not necessarily where you will end up.





What tutors are looking for in a successful candidate

Tutors will consider:

- School reference
- UCAS personal statement
- Previous academic record
 - GCSE results
 - AS results
 - A2 predicted results, or other school leaving qualifications
- Performance in aptitude tests (if applicable)
- Performance at Interview
 - Your potential & motivation to do well at university
 - Independent thinking
 - A genuine interest & commitment to your chosen subject
 - Problem solving skills





Career options

- With a science background your career opportunities are wider than you might have imagined

Continuing in Higher Education at Oxford or elsewhere (DPhil/PhD)

Using your first degree in a related Industry

Using your 'transferable skills' in another occupation



- There are plenty of jobs that can be accessed via a science degree

Oceanographer

Geologist

Computer programmer

Patent lawyer

Computer games designer

Scientific journalist

Laboratory scientist

Music technologist

Publisher

Environmental scientist

Materials scientist

University lecturer

TV presenter

Air traffic controller

Technical salesperson

Medical physicist

Accountant

TV producer

Design engineer

Science teacher

Civil engineer

Particle physicist

Astronomer

Motor mechanic

Investment banker

Consultant

Conservationist



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