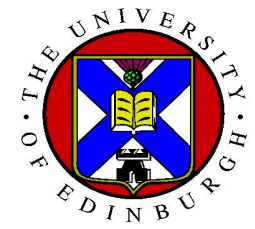




Welcome to the School of Physics and Astronomy!

- Orientation
- Outline of the degree, and course choices
- Directors of Studies

Philip Best, C21, ROE



Orientation; JCMB & ROE





Key contacts

- Teaching Programme Administrator, 4314 JCMB
Helen Hamer
- Physics Teaching Office, 4315 JCMB
Jen Wood, Leanne O'Donnell, Laura Gonzalez,
Cyrstal Lei
- Astronomy Teaching Office, C17 ROE
Paula Wilkie
- Your "Director of Studies"
- The Head DoS (me; Room C21 ROE)
[also <http://www.ph.ed.ac.uk/>]



Special arrangements

If you have a disability or other issue that requires special arrangements to be made, please tell either

- Helen Hamer 4314 JCMB, or
- Your DoS

Also, you should contact the Student Disability Service
www.ed.ac.uk/student-disability-service



Role of the DoS

Your DoS is your primary formal contact with the University. They will advise on:

- Courses
- Change of degree
- Problems
- Where to find help around the University

They are also *your advocate* within the University system if any problems arise.



Getting started : matriculation

Registration & fees:

By post, or in person at
Pollock Halls or Old College

Course Enrolment:

Director of Studies



Structure of our degrees

Each year you will take courses to the value of 120 credit points

You need:

- 360 credits for a BSc Ordinary
- 480 credits for a BSc Honours degree
- 600 credits for a MPhys degree

[Fast-track entrants start at year-2 and are awarded 120 credits for prior study]



New Theoretical Physics degree

Beginning in 2011/2, we have introduced a new Theoretical Physics degree.

Any student enrolled on any flavour of Physics degree is entitled to change to this degree if they wish.

Note that the pre-honours courses for the Physics degree are the same as those of the Theoretical Physics degree*, so this change can be made at any time in the first two years.

[* for the main route in TP; an alternative route exists]

Theoretical Physics vs "Straight" Physics



The main difference between the Physics and the Theoretical Physics degrees come at Honours level.

Students on the TP degree take additional maths, computing, or Theoretical Astrophysics options in Junior Honours in place of experimental labs.

This opens up the possibility to more higher-level theoretical physics courses in later years.

Theoretical Physics vs Mathematical Physics



The introduction of the Theoretical Physics degree co-incides with large changes in our Mathematical Physics degree.

The Mathematical Physics degree now contains much more mathematics in pre-honours, opening up the possibility to take a wider range of honours-level maths courses.

However, to achieve this it removes all choice at pre-honours level, and some background physics.

If in doubt, discuss options with your DoS



Pre-honours courses

In most cases* (see "Degree Programme Tables" in your Pre-Honours Guide) in each of the first two years you will take

40 credits of Physics (Phys 1A & 1B, then 2A & 2B)

40 pts of Maths

40 pts of something else

For some degree programmes, however, some or all of the "40 pts of something else" are constrained.

[* the exception being Mathematical Physics]



Maths options

There are two distinct sets of maths courses in Yr 1

- The "standard" courses, Maths for Physics 1 (MfP1) and MfP2, taught by the School of Physics.
 - The "specialist" courses (Introduction to Linear Algebra, Calculus and its applications, Proofs and Problem solving) run by the School of Maths.
- => Most students take the MfP courses
- => Mathematical Physicists take both sets to ensure a solid foundation: to do this, they don't take Physics 1B
- => Theoretical Physicists can choose either route

Fast-track entry



Suitably qualified students can enter our degree programme direct into 2nd year. Such students follow the Yr-2 programme, but on most degree programmes take the "Problem Solving in Physics" course as their outside option in Semester 1 (fills gaps in maths/phys)

Fast-track entry requirements are:

- A's in Maths and Physics and another subject at A-level or Advanced Higher

If you satisfy these requirements and wish for fast-track entry then that is normally still possible - talk with your DoS for more information



Fast-track maths options

Most fast-track students follow the Physics run MfP3 and MfP4 courses (as well as Problem Solving in Physics)

Theoretical Physics fast-track students can once again choose a specialist maths route instead; they would then take a maths-run fast-track course instead of PSiP (as with PSiP, this fills the Sem 1 outside choice).

Mathematical Physics fast-track students again take both Physics and Maths-run maths courses. To fit this in they don't take Physics 2A. Be aware that this significantly constrains later choices in Physics courses, but opens up many additional choices in maths courses.



Optional courses

You can use the (up to) 40 pts of optional courses to:

- Do something "Physics related"
- Do some extra maths
- Keep another degree open
- Do something "interesting"



Compulsary choices on our Physics Degrees

- Physics - no requirements on outside courses
- Astrophysics - no requirements but students usually take Astro 1S and Astro 1G in yrs 1+2
- Theoret. Phys - no requirements, but may take extra maths yr1 and maths/Comp-Sim yr 2
- Math. Physics - Yr1 and yr2 filled with extra maths.
- Comput. Phys. - Informatics 1 courses in yr-1 Sem 1, and Comp. Sim in yr-2 Sem 2.
- Phys & Meteor - Meteorology courses in yr 2, Sem 1+2
- Phys. & Music - Mus Acoustic & Music 1B yr1. Music yr2



Other possible transfers

- Computer Science, Computer Science and Physics, or Informatics
- Chemical Physics, Chemistry
- Geophysics, Geology, Environmental Geoscience
- Mathematics, Maths and Physics
- Engineering: Mechanical, Chemical, Electrical or Civil

See hand-out for details.



Other optional courses

There are some suggestions in the Pre-Honours Guide and many more in the handout.

See also: www.drps.ed.ac.uk for Degree Programme Tables and a Course Catalogue

Check out more at the Academic Fair, in the Appleton Tower today until 3pm

Pre-Honours Optional Courses 2008/9						
Students are eligible to select courses from all around the University, provided that they satisfy any pre-requisite requirements of that course, and that course does not have timetable clashes with any of their compulsory courses.						
One factor that students may wish to consider when choosing courses is the opportunity to keep open the option of degree transfers at the end of 1st or 2nd year, either to a different flavour of physics, or a completely different degree. To assist with this, summarised below are the outside course options that would need to be chosen to satisfy the DPTs of different degrees within the University.						
Following this is a listing of outside options which are commonly chosen by Physics students, along with details of any timetable clashes or pre-requisites. This can be used as a guide, but is far from a complete listing of options. For a complete course catalogue and details of Degree Programme Tables, see: www.drps.ed.ac.uk . For timetable data see: www.timetab.ed.ac.uk						
Degree	Required Courses	Code	Credits	Year	Sem.	Pre-requisites / comments
Computational	Informatics 1: Computation & Logic	U04323	10	1	S1	Must take U04324 in parallel
Physics	Informatics 1: Functions & Programming	U04324	10	1	S1	Must take U04323 in parallel
	Computer Simulation	U00549	20	2	S2	Physics 2A
Physics with Meteorology	Meteorology: Atmosphere and Env.	U01598	20	2	S1	
	Meteorology: Weather and Climate	U01802	20	2	S2	
Physics with Music	Musical Acoustics	U00541	20	1	S1	
	Music 1C (or A-level or Higher)	U00778	20	1	S2	
	2 of Music 2A	U02745	20	2	S1	
	Music 2B	U02746	20	2	S2	
	Music 2C	U03991	20	2	Y	
Maths & Physics or Mathematics	Differential Eq Mod Sol	U01462	10	1	S2	
	Lin Prog Graph Theory	U01461	10	1	S2	
Geophysics	Earth Dynamics	U01208	20	1	S1	
	Intro to Geophysics	U02089	20	2	S1	
	Sedimentology A	U01850	20	2	S1	Earth Dyn
Chemical Physics	Chemistry 1A	U00963	20	1	S1	
	Chemistry 1B	U00964	20	1	S2	Chem 1A
	Either Chemistry 2 or Physical Chemistry 2	U00968	40	2	Y	Chem 1A and 1B
Chemistry	Chemistry 1A	U00963	20	1	S1	
	Chemistry 1B	U00964	20	1	S2	Chem 1A
	Chemistry 2	U00968	40	2	Y	Chem 1A and 1B
Civil Engineering	Engineering 1	CE0021	20	1	S1	
	Civil Engineering 1	CV0001	20	1	S2	Eng 1
Mechanical Engineering	Engineering 1	CE0021	20	1	S1	
	Mechanical Engineering 1	ME0001	20	1	S2	Eng 1
Electrical Eng Or Electronics	Engineering 1	CE0021	20	1	S1	
	Electrical Engineering 1	EE0001	20	1	S2	
Computer Sci or Informatics	Informatics 1: Computation & Logic	U04323	10	1	S1	Must take U04324 at same time
	Informatics 1: Functions & Programming	U04324	10	1	S1	Must take U04323 at same time
	Informatics 1: Object Oriented Program.	U04326	10	1	S2	U04323,U04324; U04325 at same time
	Informatics 1: Data and Analysis	U04325	10	1	S2	U04323,U04324; U04326 at same time
Commonly Chosen Outside Option Courses:						
Area	Course	Code	Points	Year	Sem.	Pre-requisites / comments
Physics	Astronomy 1S: Stellar & Planetary Sci.	U03371	20	1	S2	Alternate years; runs 2008-09
	Discover Astronomy G: Gals & Cosmo	U03375	20	1	S1	Mainly for non-scientists; runs 2008-09
	Astronomy 1G: Galactic & Cosmo. Sci.	U03373	20	2	S2	Alternate years; runs 2009-10
	Discover Astronomy S: Stars & Planets	U03374	20	2	S1	Mainly for non-scientists; runs 2009-10
	Introductory Musical Acoustics	U01867	20	1	S1	
	Musical Acoustics	U00541	20	1	S1	
	Computer Simulation	U00549	20	2	S2	Physics 2A
	Problem Solving in Physics, Sem 1	U03739	20	2	S1	Physics 1A and Physics 1B
	Problem Solving in Physics, Sem 2		20	1 or 2	S2	Phys 1A & 1B (1B at same time is OK).
	Mathematics	Maths support for Direct Entry	U04306	0	2	S1
Differential Eqns, Modelling & Solution		U01462	10	1	S2	Common for MP; Clashes in Yr 2
Linear Prog and Numerical Analysis		U03826	10	1	S2	Common for MP; Clashes in Yr 2
Numerical Differential Equations		U03863	10	2	S1	Pass Specialist Yr1 Maths; Clash MM3
Probability (Year 2)		U01480	10	2	S1	Passes in Year 1 mathematics

	Statistical methods	U01481	10	2	S1	Passes in Year 1 mathematics	
	Statistical models	U01483	10	2	S2	Prior attendance at U01480, U01481	
Informatics	Computer Literacy 1	CS0001	20	1	S1		
	Comp Prog Skills & Concepts 1	CS0004	20	1	S1		
	Comp Foundation of Cognitive Sci	U03859	20	1	S2		
	Human communication 1	CG0001	20	1	S2		
	Informatics 1: Computation & Logic	U04323	10	1	S1	Must take U04324 at same time	
	Informatics 1: Functions & Programming	U04324	10	1	S1	Must take U04323 at same time	
	Informatics 1: Object Oriented Program.	U04326	10	1	S2	U04323&4; U04325 co-req. Clash FoMP	
	Informatics 1: Data and Analysis	U04325	10	1	S2	U04323&4; U04326 co-req. Clash FoMP	
	Informatics 2A	U02599	20	2	S1	All 4 Info-1 courses are pre-requisites	
	Informatics 2B	U02600	20	2	S2	All 4 Info-1 courses are pre-requisites	
Informatics 2C	U02601	20	2	S1	All 4 Info-1 courses are pre-requisites		
	U02602	20	2	S2	All 4 Info-1 courses are pre-requisites		
Chemistry	Chemistry 1A	U00963	20	1	S1	Higher B or equivalent; clashes Yr 2	
	Chemistry 1B	U00964	20	1	S2	Chem 1A; clashes Yr 2	
	Chemistry 2	U00968	40	2	Y	Chem 1A and 1B	
	Environmental Chemistry 2	U00969	20	2	S2	Chem 1A and 1B	
	Physical Chemistry 2	U01725	20	2	Y	Chem 1A and 1B	
	Materials Chemistry	U02663	20	2	S1	Chem 1A & 1B, or grade B at A-level/AH	
Earth Science	Earth Dynamics	U01208	20	1	S1	Timetable problem in Yr2	
	Earth surface systems	U03237	20	1	S2	Timetable problem in Yr2	
	History of Life	U02516	20	1	S2		
	Sedimentology A	U01850	20	2	S1	Earth Dyn	
	Mineralogy and Petrology	U01918	20	2	S2	Earth Dyn	
	Intro to Geophysics	U02089	20	2	S2	Timetable problem in Yr2	
	Geomorphology	GG0004	20	2	S2	Earth Dyn	
	Natural Hazards	U02515	20	2	S1	Clash in Yr-1	
Meteorology	Meteorology: Atmosphere and Environ	U01598	20	2	S1	Timetable problem in Yr1	
	Meteorology: Weather and Climate	U01802	20	2	S2	Timetable problem in Yr1	
Ecological and biological science	Sustainability, Society and Env.	U02841	20	1	S2		
	Soil, Water and Atmospheric Processes	U01806	20	2	S2		
	Origin and Diversity of Life 1	BI0001	20	1	S1		
Engineering	Engineering 1	CE0021	20	1	S1	Clash Yr 2	
	Mechanical Engineering 1	ME0001	20	1	S2	Eng 1; Clash yr 2	
	Chemical Engineering 1	CE0001	20	1	S2	Eng 1; Clash yr 2	
	Civil Engineering 1	CV0001	20	1	S2	Eng 1; Clash yr 2	
	Electrical Engineering 1	EE0001	20	1	S2	Eng 1; Clash yr 2	
	Electronics 1	U01655	20	1	S2		
	Fluid Mechanics 2	U00469	10	2	S1	Clash Yr 1	
	Geotechnical Engineering 2	CV0008	20	2	S1	Eng 1, Physics 1	
	Electronics 2	U00478	20	2	S1	MM2 or Eng 1	
	Electronic Currcuits and devices	U00480	10	2	S2	EE1 or Eng 1	
	Mechanical Engineering Design 2B	U01293	10	2	S2	Physics 1	
	Management and enterprise	Innovation and Enterprise for Sci & Eng	U01858	20	1	S2	
		Industrial management 1	BS0002	20	1	S1	Clash Yr 2
Career Development Planning		U02812	0	2	S2		
Social Science	History of Medicine	SU0005	20	1	S2		
	Science and Society	SU0001	20	1	S1		
	Technology and Society 2h	SY0071	20	2	S1		
Philosophy	Logic 1	PP9976	20	1	S1		
	Philosophy of Science 1h	PP9977	20	1	S2		
	Philosophy 2A	PP0033	40	2	Y	Logic 1h and Phil of Sci 1h	
Language	Linguistics 1Ah	U00555	20	1	S1	Clash yr 2	
	Introductory French Language	FR0002/3	20	1	S1/S2	Standard Grade or GCSE	
	Intermediate French Language	FR0007/9	20	1	S1/S2	Level 1 or Weak A level	
	Introductory German Language	GE0003	20	1	S1	None	
	Intermediate German Language	GE0019	20	2	S2	Level 1 or Standard	
	Introductory Spanish Language	HS0003/4	20	1	S1/S2	None	
	Intermediate Spanish Language	HS0008/9	20	2	S1/S2	55% in Level 1 or Standard Grade	
	Introductory Italian Language	IT0002/3	20	1	S1/S2	None	
	Intermediate Italian Language	IT0004/5	20	2	S1/S2	Level 1 or Standard Grade	



Importance of pre-honours

Pre-honours results don't directly contribute to your degree classification, however it is important to do well:

- Builds all the vital knowledge and mathematical skills that future courses build on
- Gets you "into the habit" of University work
- Affects issues such as studentships, Erasmus, etc

Hard work is necessary: 10 credits corresponds to 100 hours of work - much more than timetabled hours

Pre-honours "Certificate of Merit" for 1st-class students

ERASMUS / International Exchange



The University offers the possibility to study one year of your degree abroad.

- Usually the Junior Honours year, but can be the Senior Honours year for students on MPhys programmes
- ERASMUS exchanges within Europe
- International exchanges world-wide

Can be a very valuable experience; many students who do it consider it the greatest part of their degree

ERASMUS / International Exchange



The University has exchange agreements with a few Universities in Europe, and a few tens worldwide

On an ERASMUS/International exchange, the University pays the fees at your host institution.

For more information, and lists of current destinations, See the International Office website:

http://www.ed.ac.uk/international_office

The school also has an exchange coordinator who can give more information: Kristel Torokoff (JCMB Rm 5413)

ERASMUS / International Exchange



For International Exchanges:

- Apply around November of previous academic year
- Very competitive; usually need grade-A performances
- Also assessed on motivation, "ambassadorial" role, and benefit to student.

For ERASMUS Exchanges:

- Apply around January/February time
- Less competitive, but usually need B-grade results
- Your linguistic suitability is part of assessment: can use opportunity of outside courses to develop this



Seeing your DoS

- The following lists assign students to DoSs
- If your name doesn't appear, please see me after this session, or contact the Teaching Office (4315 JCMB)
- Go to your DoS's office, and book a time
- If you doubt about maths options, make sure you do the diagnostic test before going to see your DoS
- **Consider course options in advance!**
 - **Academic Fair today until 3pm in Appleton Tower**