

# DESIGNING your Physics Course at Imperial

Take, for example, an MSci student who already knows that she/he wants to specialise in Astronomy or Astrophysics:

*aiming for the stars!*

One of the strengths of the way that the Imperial Physics degree programmes are structured is that you can wait before deciding on your specialisation until after you have learned more about the subject(s). Of course, some people have always known what they want to study. The question these people ask is whether the Imperial Physics degree programmes contain courses that are relevant to their specific interests. Almost certainly the answer is 'Yes'.

## Year One

Select a First Year Project offered by the Astrophysics or Space & Atmospheric research groups.

Recent projects have included:

- Orbits around black holes
- Investigating a massive cluster of galaxies
- The kitchen sink heliosphere.

## Year Three

- Astrophysics is the main course that establishes the physics of stars and galaxies.
- The option on Plasma Physics treats both astrophysical plasmas (in stars) and man-made plasmas.
- Principles of Instrumentation would be a good course to take as it is applicable to instrumentation used with telescopes. Optical Communications Physics also covers related themes.
- The core course Nuclear and Particle Physics is very relevant to astrophysics because it treats the nuclear processes which occur in stars.

This is just a possible selection of courses and Projects, not a defined "stream". It will be up-to-you to decide, in consultation with your Personal Tutor, the Senior Tutor, and other staff, which would be your best choice.

## Year Two

- Select the option Sun, Stars and Planets, which gives a good introduction to astronomy and astrophysics.
- Alternatively, learning a language can be a real asset to a scientist who joins an international collaboration, or you might take Mathematical Methods if your interests are more in theoretical astrophysics.

## Year Four

- Select an MSci Project offered by the Astrophysics or Space & Atmospheric research groups.
- Recent MSci Project titles have included:
- Dust in local galaxies from Herschel and Planck; Galaxy sizes as a probe of cosmology;
- Stellar microvariability;
- Magnetic explosions in the solar wind.
- Select options from Cosmology, Advanced Particle Physics, General Relativity, Space Physics, Atmospheric Physics, Hydrodynamics and Shocks.