

# Practical physics

As you progress through your degree course, you will gradually explore practical physics in greater depth, learning to become a more independent scientist. These acquired skills are essential in science, and transferable to a huge range of other professions. Typically all experimental work is carried out in a pair.

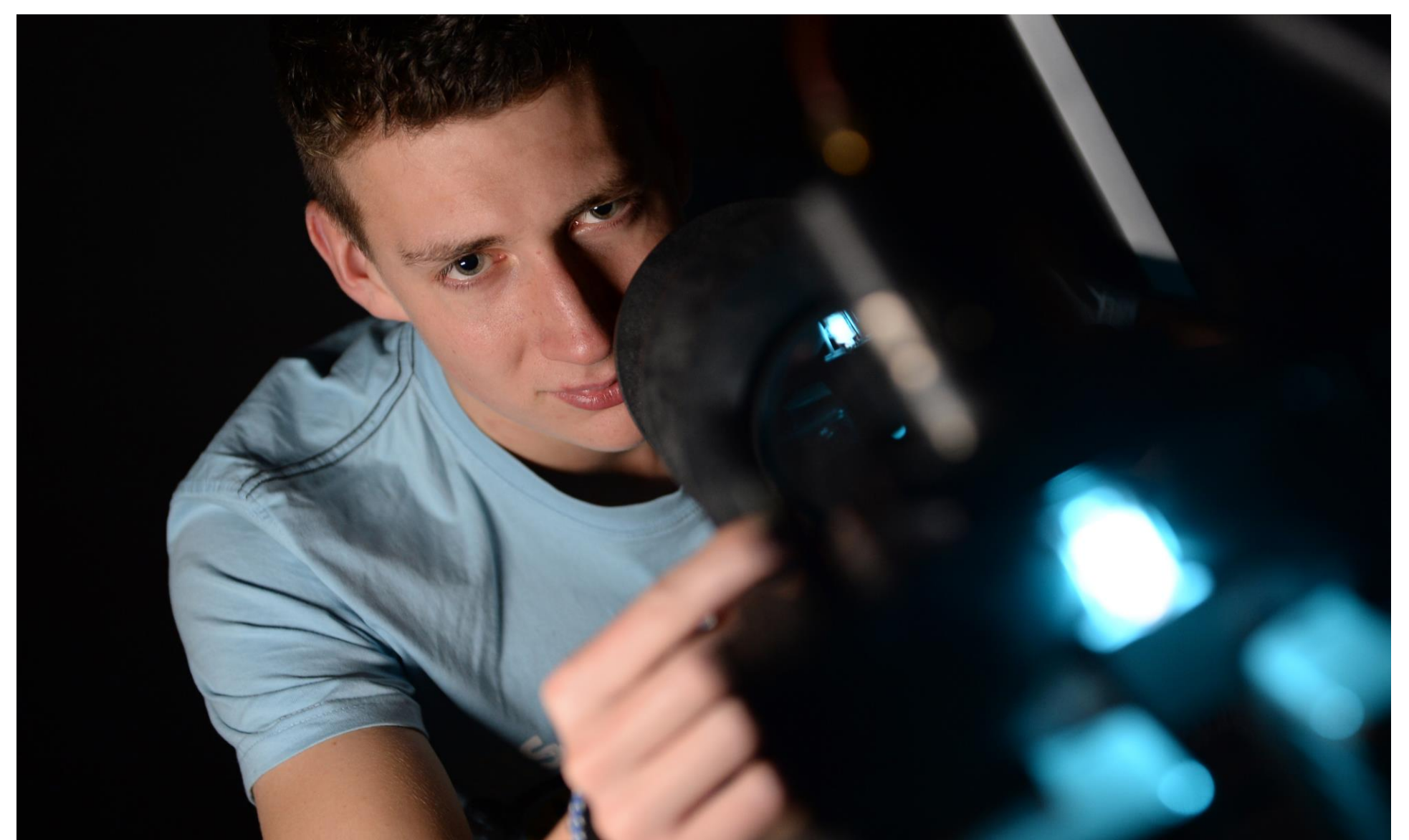
## Key components include

- Keeping precise notes
- Critically analysing data and sources of error
- Planning and continuously re-assessing your experiments and procedures
- Writing a formal report and giving presentations.

## First year – *short one or two day experiments*

In the first year you work with a partner of your choice in a small demonstration group with a graduate student who guides you through the experiments week-by-week.

Assessment is by handing in your weekly work, and through writing lab formal reports.



## Second year – *longer and more challenging experiments over four weeks*

Experiments include X-ray crystallography, adiabatic expansion and thermodynamics, radioactive decay, viscosity of fluids, photon diffraction. Postgraduate demonstrators and staff are on hand to help, but you work more independently.

## Third year (MSci) – *more advanced experimental techniques over six weeks*

Extended six week experiments with an academic to supervise, using research-type equipment: electron diffraction, gamma-ray spectroscopy, scanning tunnelling microscopy, pulsed NMR, and galaxy clustering.



## Final year BSc and MSci – *a project in a research group*

A highlight for most students is the opportunity to work directly with an academic supervisor in a research environment. Projects can be chosen from all groups within the School of Physics. Students might be challenged to design and build new equipment, computationally model data from a particle accelerator or telescope, or work on new theoretical models.