# FG31 'Physics and Mathematics B.Sc.'
# YEAR 3

In their third year students take 60 credits of MATH modules and 60 credits of PHYS modules, chosen according to the following table. Other modules from the Mathematics or Physics department, which are not on the list, may be chosen as optional modules, but must be discussed with and approved by the programme director.

All students must take a project module, either MATH334 or PHYS379; and a quantum mechanics module, either MATH325 or PHYS361.

Students who do not take PHYS379 (Physics Project), must take PHYS378 (Advanced Practical Physics).

| Module | | Credits | Semester | Level |
|---|---|---|---|---|
| **15 Credits from:** | | | | |
| PHYS378 | Advanced Practical Physics | 15.0 | 1 or 2 | 3 |
| or | | | | |
| PHYS379 | Project (see Note 1 below) | 15.0 | 1 or 2 | 3 |
| **45 Credits from:** | | | | |
| PHYS361 | Quantum Mechanics & Atomic Physics (Note 2) | 15.0 | 1 | 3 |
| PHYS363 | Condensed Matter Physics | 7.5 | 1 | 3 |
| PHYS375 | Nuclear Physics | 7.5 | 1 | 3 |
| PHYS387 | Materials Physics | 7.5 | 1 | 3 |
| PHYS389 | Semiconductor Applications | 7.5 | 1 | 3 |
| PHYS393 | Statistical and Low Temperature Physics | 15.0 | 1 | 3 |
| PHYS370 | Advanced Electromagnetism | 15.0 | 2 | 3 |
| PHYS374 | Relativity and Cosmology | 15.0 | 2 | 3 |
| PHYS377 | Particle Physics | 7.5 | 2 | 3 |
| PHYS381 | Surface Physics | 7.5 | 2 | 3 |
| PHYS382 | Physics of Life | 7.5 | 2 | 3 |
| PHYS388 | Physics of Energy Sources | 15 | 2 | 3 |
| PHYS246 | Accelerators and Radioisotopes in Medicine | 15.0 | 2 | 2 |
| **60 Credits from modules available to G100 Mathematics students in Year 3. Recommended Modules are:** | | | | |
| MATH323 | Further Methods of Applied Mathematics | 15.0 | 1 | 3 |
| MATH324 | Cartesian Tensors and Mathematical Models of Solids and Viscous Fluids | 15.0 | 1 | 3 |
| MATH325 | Quantum Mechanics (see Note 2 below) | 15.0 | 1 | 3 |
| MATH322 | Chaos and Dynamical Systems | 15.0 | 2 | 3 |
| MATH326 | Relativity | 15.0 | 2 | 3 |
| MATH334 | Mathematical Physics Projects (see Note 1 below) | 15.0 | 2 | 3 |
| **Total Credits** | | **120** | | |

**Note 1: Either** PHYS379 **or** MATH334 (but not both) **must be taken.**

**Note 2: Either** PHYS361 **or** MATH325 (but not both) **must be taken.**