

Mathematics Courses for Pre-honours Physics & Astro Students (2011/12)

In pre-honours there are different tracks that students can take through the mathematics course. One set of courses, sometimes referred to as the specialist courses, is taken by Mathematics students and is lectured by the School of Mathematics. The other set, lectured by the School of Physics and Astronomy, are the standard courses. The general principle is that students on degrees apart from Mathematical Physics (MP) or Theoretical Physics (TP) will all take the standard courses (although may choose to follow the TP maths route), students on the TP degree can choose either route, and students on the MP degree follow both sets of courses. There is some blurring of this general rule as signalled in the Degree Programme Table (DPT) footnotes. Specific guidance can be found below.

Mathematics Courses for First Year

According to our DPTs, the first-year Maths courses are as follows.

- For all degree programmes except Mathematical Physics and Theoretical Physics:
 - PHYS08035 Mathematics for Physics 1 (MfP1)
 - PHYS08036 Mathematics for Physics 2 (MfP2)
- For the Theoretical Physics degree:
 - Either:
 - PHYS08035 Mathematics for Physics 1 (MfP1)
 - PHYS08036 Mathematics for Physics 2 (MfP2)
 - or:
 - MATH08057 Introduction to Linear Algebra
 - MATH08058 Calculus and its Applications
- For the Mathematical Physics degree programme:
 - PHYS08035 Mathematics for Physics 1 (MfP1)
 - PHYS08036 Mathematics for Physics 2 (MfP2)
 - MATH08057 Introduction to Linear Algebra
 - MATH08058 Calculus and its Applications
 - MATH08059 Proofs and Problem Solving

Notes:

1. Students on the MP degree have to miss Phys 1B (or take 140 credits) in order to be able to take all 100 credits of maths.
2. Suitably qualified students on the MP degree may be allowed to skip MfP1 in favour of an outside course, with permission of DoT. As a rule of thumb, such students should have A-grade Maths A-level or Advanced Higher, and have scored in the top ~25% of the cohort on the entrance diagnostic test.
3. Students on the TP degree have a choice of routes. The MfP1+2 route should be followed unless the students have A-grade Maths A-level or Advanced Higher, and have scored in the top ~25% of the cohort on the entrance diagnostic test, in which case either route is possible.
4. TP students following the MfP route can choose to take additional maths courses as their outside options, in order to retain flexibility for future years.
5. TP students following the specialist maths route are advised to also follow MATH08059 Proofs and Problem Solving as one of their outside options.
6. Students on all other degree programmes should follow the MfP1/2 route. Following the TP specialist maths route is permitted, however, if they wish to keep options open for later transfer to TP/MP, and they are suitably qualified (same recommendations as for TP students).

Mathematics Courses for Second Year

The second-year Maths courses are as follows.

- For all degree programmes except Mathematical Physics and Theoretical Physics:
 - PHYS08037 Mathematics for Physics 3 (MfP3)
 - PHYS08038 Mathematics for Physics 4 (MfP4)
- For the Theoretical Physics degree:
 - Either:
 - PHYS08037 Mathematics for Physics 3 (MfP3)
 - PHYS08038 Mathematics for Physics 4 (MfP4)
 - or:
 - PHYS08038 Mathematics for Physics 4 (MfP4)
 - MATH08005 Foundations of Calculus
 - MATH08006 Several Variable Calculus
 - PHYS08040 Dynamics
 - MATH08008 Probability (Year 2)
- For the Mathematical Physics degree programme:
 - PHYS08040 Dynamics
 - PHYS08038 Mathematics for Physics 4
 - MATH08005 Foundations of Calculus
 - MATH08006 Several Variable Calculus
 - MATH08007 Linear Algebra
 - MATH08035 Methods of Applied Mathematics
 - MATH08008 Probability (Year 2)

In addition, fast-track entrants have to take the following courses:

- For the Mathematical Physics degree programme, or for Theoretical Physics students choosing the Specialist Maths route:
 - MATH08062 Accelerated Algebra and Calculus for Direct Entry
- For all other students:
 - PHYS08031 Problem Solving in Physics

Notes:

1. Students on the TP degree have a choice of two routes. The default route is the MfP route. The specialist maths route is open only to students who did specialist maths courses in Yr 1 and performed well.
2. This specialist maths route can also be followed by non-TP students who followed (and did well in) the specialist maths courses in Yr 1.
3. Fast-track TP (and non-TP) students also have a choice of two routes. Most should follow the PSiP/MfP3 route, but the specialist maths route is an option to those with good entry qualifications and in the top 25% of the cohort on the entry diagnostic test.
4. MP fast-track students will be unable to follow Physics 2A in a standard programme (though very strong students may consider following this as an additional course to keep later options open).