

Course Description (Ext 1)

The Mathematics Extension 1 Syllabus has been divided into a Preliminary course and a HSC course as follows:

Preliminary Course	HSC Course
Other inequalities (1.4 E)	Methods of integration (11.5)
Circle geometry (2.6–2.10)	Primitive of $\sin^2 x$ and $\cos^2 x$ (13.6 E)
Further trigonometry (sums and differences, t formulae, identities and equations) (5.6–5.9)	Equation $\frac{dN}{dt} = k(N-P)$ (14.2 E)
Angles between two lines (6.6)	Velocity and acceleration as a function of x (14.3 E)
Internal and external division of lines into given ratios (6.7 E)	Projectile motion (14.3 E)
Parametric representation (9.6)	Simple harmonic motion (14.4)
Permutations and combinations (18.1)	Inverse functions and inverse trigonometric functions (15.1–15.5)
Polynomials (16.1–16.3)	Induction (7.4)
Harder applications of the Preliminary 2 Unit course	Binomial theorem (17.1–17.3)
	Further probability (18.2)
	Iterative methods for numerical estimation of the roots of a polynomial equation (16.4)
	Harder applications of HSC 2 unit topics, including 10.5 E, 13.4 E, 14.1 E