

MATHEMATICS (MAT) – Year 10

Subject Outline:

Mathematics is offered in Year 10 and provides an introduction to the knowledge and skills required to be successful in Senior Mathematics in Year 11 & 12. This course also includes a brief look at some of the topics in the Senior Specialist Mathematics course, to enable students to make an informed decision when selecting subjects for Year 11. Students will need to reach a satisfactory standard in this course to manage the work covered in the following years.

Course Content:

Topic	Description
PYTHAGORAS AND TRIGONOMETRY	Finding sides and angles in triangles, bearings and radial surveys, life-related applications
CHANCE	Addition and multiplication theorem, conditional probability using Venn diagrams and tables, independent and dependent events.
DATA	Five number summary, interquartile range, outliers, boxplots, histograms, dot plots, relationship between variables in scatterplots, evaluate statistical reports.
LINEAR RELATIONSHIPS	Linear and non-linear graphs, solving linear equations, inequalities and simultaneous equations, gradient and intercepts, equation of a line, solving problems using linear equations.
GEOMETRY AND PROOFS	Parallel lines, similar and congruent triangles, formal geometric proofs, deducing properties of geometric figures, surface area and volume of prisms and composite solids, conic sections.
LINEAR AND NON-LINEAR FUNCTIONS	Simple and compound interest, exponential growth and decay, comparing simple and compound interest graphs.
QUADRATIC FUNCTIONS	Algebraic fractions, binomial expressions, factorising quadratic expressions, solving quadratic equations, sketching quadratic functions, solving life-related problems.

Assessment Outline:

- Students will have one examination at the end of each semester.
- Students will also undertake an alternative assessment task each semester that involves carrying out a problem solving and modelling task.

Learning Pathways:

Year 11/12 Subject	General/Applied/Other	Potential QCE Points	Recommended
Specialist Mathematics	General	4	B in Year 10 MAT
Mathematical Methods	General	4	B in Year 10 MAT
General Mathematics	General	4	C in Year 10 MAT
Essential Mathematics	Applied	4	

Career Pathways:

Toolmaking, Sheet-Metal Working, Fitting and Turning, Carpentry, Plumbing, Auto Mechanics, Tourism, Hospitality, Architecture, Nursing and Administration and Managerial Employment. For full details of career opportunities leading from a study of this subject see the QTAC guide to tertiary courses

Specific Requirements:

- 2 x Maths Workbooks (suitable for entire year)
- Maths Journal (48-64 pages)
- 1 Scientific Calculator (Casio FX82AU Plus)
- Ruler, Protractor, Pens, Pencils and Eraser

Approximate Cost: Nil