



uplift
education

MATHS

HSC MATHEMATICS GENERAL PROGRAM

CALL US ON 1300 92 92 99
UPLIFTEDUCATION.EDU.AU
FACEBOOK.COM/UPLIFTED



HSC: MATHEMATICS GENERAL PROGRAM OVERVIEW

STAFF CONTACT DETAILS

James Ma	Head of Mathematics	james@uplifteducation.edu.au
Eric Tran	Year 7 – 12 Mathematics Tutor	eric@uplifteducation.edu.au
Diem Nguyen	Year 7 – 12 Mathematics Tutor	diem@uplifteducation.edu.au
Andy Tran	Year 7 – 12 Mathematics Tutor	Andy@uplifteducation.edu.au
Pranav More	Year 7 – 12 Mathematics Tutor	pranav@uplifteducation.edu.au
Igor Buvac	Year 10 – 12 Mathematics Tutor	Igor@uplifteducation.edu.au
Maryanne Feghali	Year 10 – 12 Mathematics Tutor	maryanne@uplifteducation.edu.au
Sachin Kinger	Year 7 – 9 Mathematics s Tutor	sachin@uplifteducation.edu.au

YEAR OVERVIEW

By the end of Year 12, students will be able to use two-dimensional and three-dimensional models to solve practical problems and understand the relationship between changing quantities in algebraic and graphical form. Students will be able to solve and apply Pythagoras' theorem and trigonometric ratios to trigonometric problems. They will be able to model financial situations and represent collected data appropriately. Students will be able to use statistics and analyse data to make inferences, predictions and conclusions. They will be able to make predictions based on mathematical models and about financial situations. Students can use results of measurements and calculations to make judgements about reasonableness. Students can apply mathematical techniques to real life through mathematical argument and reasoning.

SEQUENCE OF TOPICS

Year 11

Module	Topic	Weeks required (40 in total)
1) Financial Mathematics (8 Weeks)	Earning and Managing Money	3
	Investing Money	3
	Taxation	2
2) Data and Statistics (8 Weeks)	Data Collection and Sampling techniques	2
	Displaying and Interpreting single data sets	3
	Summary Statistics	3
3) Measurement (7 Weeks)	Units of Measurement and Applications	2
	Applications of perimeter, area and volume	3
	Similarity of Two-Dimensional Figures, Right-Angled triangles	2
4) Probability (3 Weeks)	Relative Frequency and Probability	3
5) Algebra and Modelling (4 Weeks)	Algebraic Manipulation	2
	Interpreting Linear Relationships	2
6) Mathematics and Communication (4 Weeks)	Mobile Phone Plans	2
	Digital Download and File Storage	2
7) Mathematics and Driving (6 Weeks)	Costs of Purchase and Insurance	2
	Running Costs and Depreciation	2
	Safety	2

Module	Topic	Weeks required (40 in total)
1) Financial Mathematics (8 Weeks)	Credit and Borrowing	4
	Annuities and Loan Repayments	4
2) Data and Statistics (7 Weeks)	Interpreting Sets of Data	2
	The Normal Distribution	2
	Sampling and Populations	3
3) Measurement (8 Weeks)	Further Applications of Area and Volume	2
	Applications of Trigonometry	3
	Spherical Geometry	3
4) Probability (3 Weeks)	Multistage Events and Applications of Probability	3
5) Algebra and Modelling (6 Weeks)	Further Algebraic Skills and Techniques	2
	Modelling Linear Relationships	2
	Modelling Non-Linear Relationships	2
6) Mathematics and Health (4 Weeks)	Body Measurements	1
	Medication	2
	Life Expectancy	1
7) Mathematics and Resources (4 Weeks)	Water Availability and Usage	1
	Dams, Land and Catchment Areas	1
	Energy and Sustainability	2

ASSESSMENT

All students will be required to sit a topic test exam at the conclusion of the allocated period of study. Parents will be notified of assessment results through the semesterly report. Parents will be contacted if student performance is poor and requires remedial action.

ASSESSMENT OUTCOMES

- Represents the relationships between changing quantities in algebraic and graphical form
- Performs calculations in relation to two-dimensional and three-dimensional figures
- Demonstrates awareness of issues in practical measurement, including accuracy, and the choice of relevant units
- Use concepts and apply techniques to the solution of problems in trigonometry
- Able to apply Pythagoras' Theorem and SOHCAHTOA to simple trigonometric problems
- Models financial situations relevant to the student's current life using appropriate tools
- Determines an appropriate form of organisation and representation of collected data
- Uses mathematics and statistics to evaluate and construct arguments in a range of familiar and unfamiliar contexts
- Analyses representations of data in order to make inferences, predictions and conclusions
- Makes predictions about situations based on mathematical models, including those involving cubic, hyperbolic, or exponential functions
- Makes informed decisions about financial situations, including annuities and loan repayments
- Interprets the results of measurements and calculations and makes judgements about reasonableness, including the degree of accuracy of measurements and calculations and the conversion to appropriate units
- Analyses two-dimensional and three-dimensional models to solve practical problems, including those involving spheres and non-right angled triangles
- Answer questions requiring statistical processes including the use of the normal distribution, and the correlation of bivariate data
- Solve problems involving counting techniques, multistage events and expectation
- Applies mathematical techniques to real life problems and drawing appropriate inferences
- Uses mathematical argument and reasoning to evaluate conclusions drawn from other sources, communicating a position clearly to others and justifies a response
- uses a variety of strategies to investigate mathematical models of situations involving Preliminary and HSC topics

PLAGIARISM AND ACADEMIC INTEGRITY

Uplift Education has a zero-tolerance plagiarism policy. In the case that plagiarism is found in a student's work, Uplift Tutors may penalize students with a reduction of marks, or in more serious cases, Uplift Education reserves the right to deny service to the student. Uplift Education defines plagiarism in the forms of:

Copying: using the same or very similar words to an original piece of work without acknowledgement or credit, or acquiring another persons' academic work and copying it.

Inappropriate paraphrasing: changing words and/or phrases while retaining the original structure and/or information without acknowledgement or credit.

**A more detailed Yearly Program will be provided upon your child's enrolment at Uplift Education.*