

MATHEMATICS COURSE SELECTION FOR 2010

2009 will see the complete introduction of the new WACE Courses for Mathematics. This means that the previous TEE maths courses are no longer available – they have been officially discontinued. 2009 is the final phase of introduction for the new courses and, as such, will see Discrete Mathematics, Applicable Mathematics and Calculus replaced by Mathematics 3A / 3B, Mathematics 3C / 3D and Specialist Mathematics 3C / 3D respectively.

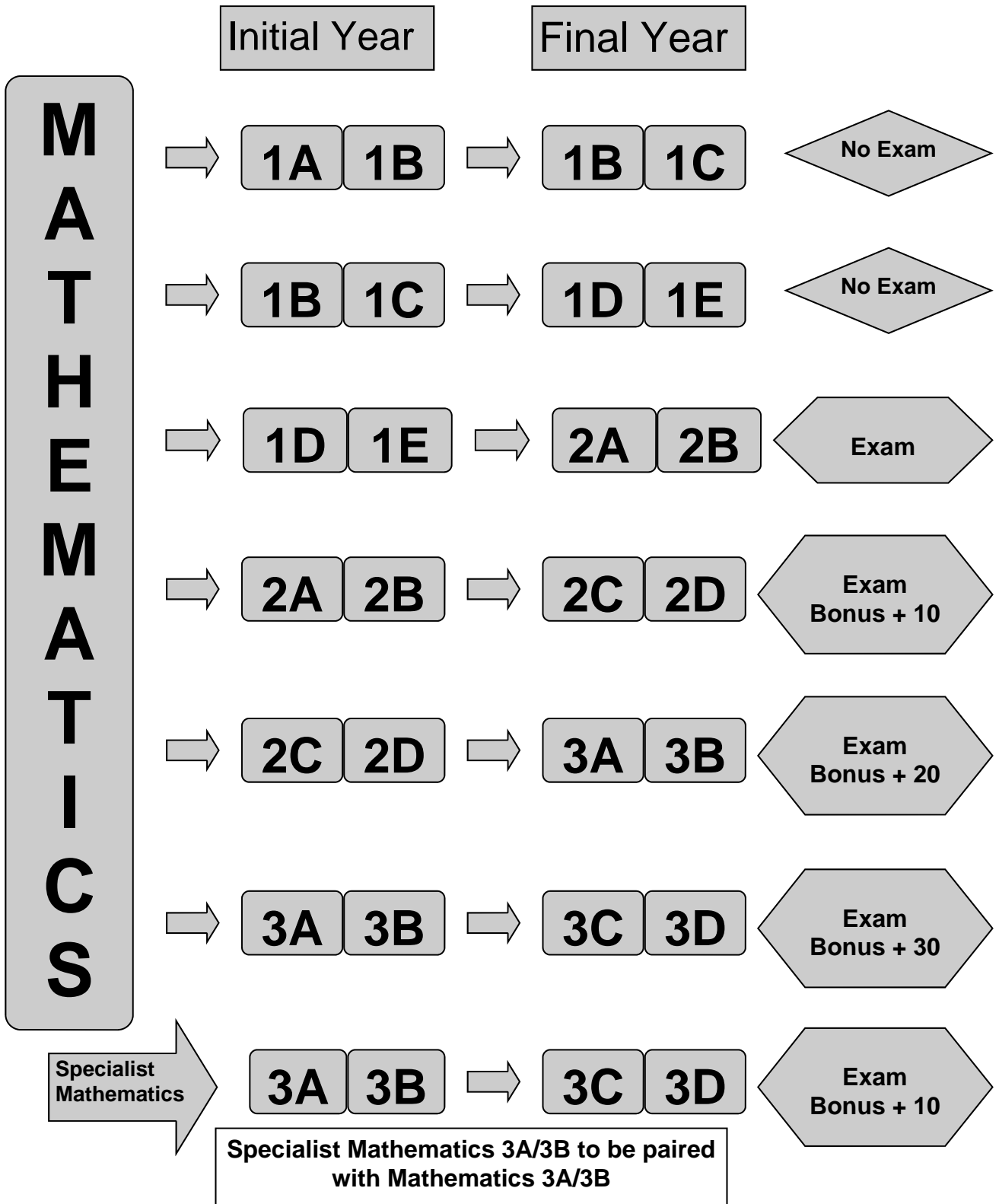
Also gone is the rigid distinction between Year 11 maths and Year 12 maths. Instead the courses are now in a vertical ladder, as it were, and you get off that 'ladder' at the end of Year 12, one 'rung' above where you got onto it at the start of year 11.

For Year 11 students, then, their choice for Year 12 is dictated by their performance in Year 11. Year 10 students can use the table below as a guide for their course selection

Year 10 Grade	Yr 11 Suggested Path	Exam Yr 12
'D' Grade	Mathematics 1A	
'C' Grade	Mathematics 1B / 1C	
'C' grade	Mathematics 1B / 1C	
	Mathematics 1D / 1E	✓(MAT 2A/2B)
'C' grade	Mathematics 1D / 1E	✓ (MAT 2A/2B)
'B' grade	Mathematics 2A / 2B	✓ (MAT 2C/2D)
'B' grade	Mathematics 2A / 2B	✓(MAT 2C/2D)
	Mathematics 2C/2D	✓(MAT 3A/3B)
'A' grade	Mathematics 3A / 3B	✓(MAT 3C/3D)
	with (optional) Specialist Mathematics 3A /3B	✓(MAS 3C/3D)

NOTE: The above table provides a guide only. Please refer to each course for detailed pre-requisites.

Mathematics Course Pathway



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**MATHEMATICS 1A (1AMAT)
MATHEMATICS 1B (1BMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'D' grade in Year 10 Mathematics

GENERAL AIMS

This course is likely to be most useful for people looking to improve their maths skills to a level suitable for the work force. This course will prepare you for Yr 12 Mathematics 1B / 1C.

CONTENT

This course covers the following topics:
Number / Algebra

- Common fractions & their decimals - Fractions, Decimals
- Multiplication 'tables'
- Working with fractions
- Practical missing value problems
- 'Everyday' banking & financial maths.
- Space / Measurement
 - Simple areas, perimeters & volumes
 - Maps, and map reading & Directional language
- Probability
 - Simple probability
 - Tallies, picture graphs
 - Sorting and understanding data

ASSESSMENT

Assessment will consist of a mostly even balance of investigations and tests.

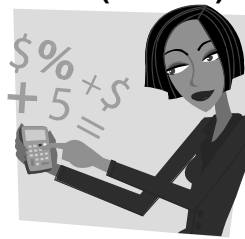
UNIT CHARGE

Mathematics 1A (1AMAT) \$15.00

Mathematics 1B (1BMAT) \$15.00

Additional associated costs may apply to this unit.

**MATHEMATICS 1B (1BMAT)
MATHEMATICS 1C (1CMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'C' grade in Year 10 Mathematics
- A teacher recommendation
- Year 11 pass in at least Mathematics 1A/1B

GENERAL AIMS

This course is likely to be most useful for people looking to improve their maths skills to a level suitable for the work force.

CONTENT

This course covers the following topics:

- Number / Algebra
 - Fractions, Decimals & Percentages
 - Powers, ratios and rates
 - Linear patterns & graphs
 - Finance – loans, credit rates
- Space / Measurement
 - Common areas & perimeters
 - Simple Surface area & volume
 - Properties of common 3-D shapes
 - Symmetry & transformations
- Probability
 - Probability in everyday events
 - Calculate simple probabilities
 - Tables & data, two way tables
 - Graphing and types of graphs

ASSESSMENT

Assessment will consist of a mostly even balance of investigations and tests.

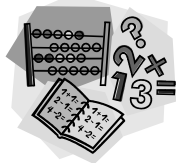
UNIT CHARGE

Mathematics 1B (1BMAT) \$15.00

Mathematics 1C (1CMAT) \$15.00

Additional associated costs may apply to this unit.

**MATHEMATICS 1D (1DMAT)
MATHEMATICS 1E (1EMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'C' grade in Year 10 Mathematics
- A teacher recommendation
- Year 11 pass in at least Mathematics 1C /1D
- 'C' Grade in Year 10 Mathematics with teacher recommendation.
Year 11 pass in at least Mathematics 1B /1C.

GENERAL AIMS

This course would be suitable for people looking to work their way up to positions of responsibility. It will lead to an exam in Year 12 and provide opportunities to further training or education beyond school.

CONTENT

This course covers the following topics:

- Algebra
 - Fractions, powers, ratios and rates
 - Cartesian Plane, variable quantities
 - 1-step / 2-step rules and recursions
 - Interest & depreciation
 - compound interest using recursion
- Measurement
 - Common Surface area & volume
 - Unit conversions
 - Angle measure & trigonometric ratios
 - Traversable networks & shortest path
- Probability
 - Probability experiments
 - Sample spaces for one stage events
 - Calculate common probabilities
 - Decimals, fractions & percentages

ASSESSMENT

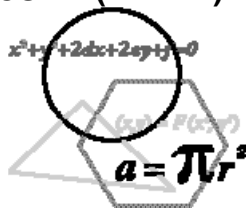
Assessment is based on in-class tests & investigations. There is no formal exam.

UNIT CHARGE

Mathematics 1D (1DMAT)	\$15.00
Mathematics 1E (1EMAT)	\$15.00

Additional associated costs may apply to this unit.

**MATHEMATICS 2A (2AMAT)
MATHEMATICS 2B (2BMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'B' grade in Year 10 Mathematics
- A teacher recommendation
- Year 11 pass in at least: Mathematics 1D /1E

GENERAL AIMS

This course is a lead-in for a variety of professions studied at university that use maths skills but are not maths intensive. It is also worthwhile preparation for those going into trades *who like maths and are good at it*.

CONTENT

This course covers the following topics:

- Algebra
 - Ratios & Percentages
 - Linear & Exponential Functions
 - Simultaneous Equations
 - Sequences & Recursion
 - Profit & loss, discounts & margins
- Statistics
 - Data gathering
 - Histograms, scatter plots & trend lines
 - Frequency tables
 - Mean, mode median
 - Probability
- Geometry
 - Pythagoras
 - Geometric transformations
 - Surface areas & volumes
 - Trigonometric Ratios
 - Coordinate geometry

ASSESSMENT

Assessment is based on in-class investigations & tests.

UNIT CHARGE

Mathematics 2A (2AMAT)	\$15.00
Mathematics 2B (2BMAT)	\$15.00
Additional associated costs may apply to this unit.	

**MATHEMATICS 2C (2CMAT)
MATHEMATICS 2D (2DMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'B' grade in Year 10 Mathematics
- A teacher recommendation
- Year 11 pass in at least Mathematics 2A/2B

GENERAL AIMS

This course is a lead-in for a variety of professions studied at university. Some examples are, engineering (mechanical, electronic, civil, environmental etc.), science career sand medical research.

CONTENT

This course covers the following topics:

- Number / Algebra
 - Difference of Squares
 - Algebraic manipulation
 - Functions / graphs
 - Quadratics, exponentials & cubics
 - Exponential equations
- Statistics
 - Venn Diagrams
 - Set notation
 - Probability
 - Summation notation
 - Interpret mean, mode median
 - Interpolation & extrapolation
- Space & Measurement
 - Coordinate geometry
 - Networks
 - Trigonometry
 - Sine & Cosine rules

ASSESSMENT

Assessment is based on in-class investigations & tests.

UNIT CHARGE

Mathematics 2C (2CMAT)	\$15.00
Mathematics 2D (2DMAT)	\$15.00
Additional associated costs may apply to this unit.	

**MATHEMATICS 3A (3AMAT)
MATHEMATICS 3B (3BMAT)**



RECOMMENDED PRE-REQUISITES

- Minimum 'A' grade in Year 10 Mathematics
- A teacher recommendation
- Year 11 pass in at least Mathematics 2C/2D

GENERAL AIMS

This course is a lead-in for a variety of professions studied at university. Some examples are, engineering (mechanical, electronic, civil, environmental etc.), science careers and medical research.

CONTENT

This course covers the following topics:

- Algebra
 - Functions: their graphs & properties
 - Algebraic solutions of quadratics, cubics, exponentials, reciprocals
 - Introductory Calculus
- Statistics
 - Counting techniques
 - Normal distributions & probabilities
 - Data representation / interpretation
 - Sampling Techniques
 - Correlation & regressions
 - Moving Averages
- Geometry
 - Advanced networks – critical paths
 - Geometric proof
 - Interpreting rate units
 - Time-Distance Graphs

ASSESSMENT

In-class investigations and summative assessments including tests and exams.

UNIT CHARGE

Mathematics 3A (3AMAT)	\$15.00
Mathematics 3B (3BMAT)	\$15.00

Additional associated costs may apply to this unit.

**MATHEMATICS 3C (3CMAT)
MATHEMATICS 3D (3DMAT)**



RECOMMENDED PRE-REQUISITES

Year 11 pass in at least Mathematics 3A / 3B

GENERAL AIMS

This course is pre-requisite for a variety of professions studied at university that are maths intensive. Some examples are, engineering (mechanical, electronic, civil, environmental etc.), science careers, medical research and so on. It is especially suited to high end maths applications like aeronautics, physics and nuclear physics.

CONTENT

This course covers the following topics:

- Number, Algebra, Calculus
 - Derivatives & Tangents
 - Derivative of exponential functions
 - Optimisation & curve sketching
 - Fundamental Theorem of Calculus
- Space & Measurement
 - Instantaneous rate of change
 - Differential equations
 - Marginal rate of change
- Chance & Data
 - Combinations & Permutations
 - Probabilities
 - Random variable & density function
 - Binomial & other distributions

ASSESSMENT

In-class investigations and summative assessments including tests and exams.

UNIT CHARGE

Mathematics 3C (3CMAT)	\$15.00
Mathematics 3D (3DMAT)	\$15.00

Additional associated costs may apply to this unit.

**SPECIALIST MATHEMATICS 3A (3AMAS)
SPECIALIST MATHEMATICS 3B (3BMAS)**



RECOMMENDED PRE-REQUISITES

- Minimum 'A' Grade in Yr 10 Mathematics
- A teacher recommendation
- Strong A-grade in Mathematics 2C / 2D

GENERAL AIMS

This course is a lead-in for a variety of professions studied at university. Some examples are, engineering (mechanical, electronic, civil, environmental etc.), science careers and medical research.

CONTENT

This course covers the following topics:

- Calculus
 - Exponential & Logarithmic Functions and applications
 - Function theory & inverse functions limits & continuity
- Vectors & Matrices
 - Vectors in 2-D
 - Vector Algebra
 - Vector Geometry
- Trigonometry & Complex Numbers
 - Arclength & Radian measure
 - Segments & Sectors
 - Trigonometric Functions & Problems
 - Arithmetic with Complex Numbers

ASSESSMENT

Assessment is based in-class investigations & tests. There is no formal examination.

UNIT CHARGE

Specialist Maths 3A (3AMAS)	\$15.00
Specialist Maths 3B (3BMAS)	\$15.00

Additional associated costs may apply to this course

**SPECIALIST MATHEMATICS 3C (3CMAS)
SPECIALIST MATHEMATICS 3D (3DMAS)**



RECOMMENDED PRE-REQUISITES

- Year 11 pass in - at least:
- Mathematics 3A / 3B

GENERAL AIMS

This course is pre-requisite for a variety of professions studied at university that are maths intensive. Some examples are, engineering (mechanical, electronic, civil, environmental etc.), science careers, medical research and so on. It is especially suited to high end maths applications like aeronautics, physics and nuclear physics.

CONTENT

This course covers the following topics:

- Number, Algebra, Calculus
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- Space & Measurement
 - Instantaneous rate of change
 - Differential equations
 - Marginal rate of change
- Chance & Data
 - Combinations & Permutations
 - Probabilities
 - Random variable & density function
 - Binomial & other distributions

ASSESSMENT

In-class investigations and summative assessments including tests and exams.

UNIT CHARGE

Specialist Maths 3C (3CMAS)	\$15.00
Specialist Maths 3D (3DMAS)	\$15.00

Additional associated costs may apply to this unit.