Atherton State High School
On Eagles' Wings

Senior General Mathematics (General)
Learning and Assessment Overview 2021

Year 11		Year 12	
MAG Unit 1 **Money, measurement and relations**	**MAG Unit 2** **Applied trigonometry, algebra, matrices and univariate data**	**MAG Unit 3** **Bivariate data, sequences and change, and Earth geometry**	**MAG Unit 4** **Investing and networking**
In Unit 1, students will develop mathematical understandings and skills to solve problems relating to the topics listed below. Consumer arithmetic reviews the concepts of rate and percentage change in the context of earning and managing money, and provides an opportunity for the use of spreadsheets. Shape and measurement builds on and extends the knowledge and skills students developed in the P–10 Australian Curriculum with the concept of similarity and problems involving simple and compound geometric shapes. Students apply these skills in a range of practical contexts, including those involving three-dimensional shapes. Linear equations and their graphs uses linear equations and straight-line graphs, as well as piece-wise linear graphs and step graphs, to model and analyse practical situations.	In Unit 2, students will develop mathematical understandings and skills to solve problems relating to the topics listed below. Applications of trigonometry extends students' knowledge of trigonometry to solve practical problems involving non-right-angled triangles in both two and three dimensions, including problems involving the use of angles of elevation and depression and bearings in navigation. Algebra and matrices continues the study of algebra and introduces the new topic of matrices. Univariate data analysis develops students' ability to organise and summarise univariate data in the context of conducting a statistical investigation.	In Unit 3, students will develop mathematical understandings and skills to solve problems relating to the topics listed below. Bivariate data analysis introduces students to some methods for identifying, analysing and describing associations between pairs of variables, including the use of the least-squares method as a method for analysing linear associations. Time series analysis continues students' study of statistics by introducing them to the concepts and techniques of time series analysis. Growth and decay in sequences employs recursion to generate sequences that can be used to model and investigate patterns of growth and decay in discrete situations. These sequences find application in a range of practical situations, including modelling the growth of a compound interest investment, the growth of a bacterial population or the decrease in the value of a car over time. Sequences are also essential to understanding the patterns of growth and decay in loans and investments studied in detail in Unit 4. Earth geometry and time zones offers an opportunity to use contexts relevant to students.	In Unit 4, students will develop mathematical understandings and skills to solve problems relating to the topics listed below. Loans, investments and annuities aims to provide students with sufficient knowledge of financial mathematics to solve practical problems associated with taking out or refinancing a mortgage and making investments. Graphs and networks introduces students to the language of graphs and the ways in which graphs, represented as a collection of points and interconnecting lines, can be used to model and analyse everyday situations such as a rail or social network. Networks and decision mathematics uses networks to model and aid decision-making in practical situations.
Topics 1. Consumer arithmetic 2. Shape and measurement 3. Linear equations and their graphs.	**Topics** 1. Applications of trigonometry 2. Algebra and matrices 3. Univariate data analysis.	**Topics** 1. Bivariate data analysis 2. Time series analysis 3. Growth and decay in sequences 4. Earth geometry and time zones.	**Topics** 1. Loans, investments and annuities 2. Graphs and networks 3. Networks and decision mathematics.
Unit Duration Yr 11 Weeks 1 - 16 (16 weeks)	**Unit Duration** Yr 11 Weeks 17 - 32 (16 weeks)	**Unit Duration** Yr 11 Weeks 33-38, Year 12 Weeks 1 - 10 (16 weeks)	**Unit Duration** Yr 12 Weeks 11-26, Revision 27-33, External Exam Weeks 34-37 (22 weeks)
Assessment Task/s	**Assessment Task/s**	**Assessment Task/s**	**Assessment Task/s**
FIA1 **Problem-solving and modelling task** *Weighting:* 20% *Conditions:* up to 10 pages, maximum of 2000 words, 4 weeks including 3 hours of classtime *Issued: T 1* Week 5 *Due: T 1* Week 8	**FIA2** **Examination** *Weighting:* 25% *Conditions:* 120 mins + 5 mins perusal short response items *Issued:* n/a *Due: T 2* Week 6	**FIA3** **Examination** *Weighting:* 15% *Conditions:* 120 mins + 5 mins perusal short response items *Issued:* n/a *Due: T 3* Week 4	**FIA4** **Examination** *Weighting:* 40% *Conditions:* 2 papers short response items *Issued:* n/a *Due: T 4* Week 2	**IA1** **Problem-solving and modelling task** *Weighting:* 20% *Conditions:* up to 10 pages, maximum of 2000 words, 4 weeks including 3 hours of classtime *Issued: T 1* Week 3 *Due: T 1* Week 7	**IA2** **Examination** *Weighting:* 15% *Conditions:* 120 mins + 5 mins perusal short response items *Issued:* n/a *Due: T 1* Week 10	**IA3** **Examination** *Weighting:* 15% *Conditions:* 120 mins + 5 mins perusal short response items *Issued:* n/a *Due: T 3* Week 5	**EA4** **External Examination** *Weighting:* 50% *Conditions:* 2 papers short response items *Issued:* n/a *Due: T 4* Week 4