Mathematics Essential Course Outline Unit 1 2016: Semester 1

***Text References**: MAWA (Essential Mathematics Units 1 and 2); E&S (Ellery and Strickland Mathematics Essential Units 1 and 2); WATP (WATP Classwork for Essential Mathematics Units 1 and 2)*

Term & Weeks	Key Teaching Points (Content)	Objectives	Text References	Assessments
Term 1 Weeks 1 & 2	Introduction to course: book, assessments, classroom procedures etc. Skills Review: Calculations with whole numbers, order of operations, estimation, rounding to suit context, decimal, fraction & % equivalences Introduction to Maths Thinking Process	1.1.1 – 1.1.8 1.1.10-1.1.11	MAWA: Ch 1, 2 E&S: p3-4, 21-24, 26-27 WATP: p5 Set 2	Practical Application 1
3	Converting units of length, weight and capacity; metric prefixes Converting units of time	1.1.2-1.1.4, 1.1.9, 1.1.12-1.1.13, 1.1.16, 1.1.18, 1.2.2, 1.3.1 - 1.3.3, 1.3.9	MAWA: Ch 3, 4 E&S: p48 – 50 WATP: p16	
4	Simple Rates: common usage, conversions, for comparisons Substitution into formulae	1.1.3, 1.1.13, 1.1.16 – 1.1.18, 1.2.2	MAWA: Ch 5, 6 E&S: p36 – 40 WATP: p13	Test 1 (Ch 1, 3, 4, 5, 6 content)
5	Nutrition and Health Practical applications including substitution into formulae, reading and interpreting tables, percentages, order of operations, time conversions	1.1.16, 1.2.1 – 1.2.2, 1.3.15, 1.3.17 – 1.3.18	MAWA: Ch 7, 8	
6	Energy from Food: substitution into formulae, order of operations, percentage of an amount Energy in the Home: getting information from tables, order of operations, interpreting Star ratings	1.1.13, 1.2.1 – 1.2.2, 1.3.15 – 1.3.18	MAWA: Ch 9, 10 E&S: p81 – 86 WATP: p31 - 32	
7	Area: conversions, rectangle, triangles, shapes made up of rectangles and triangles	1.3.5 – 1.3.8	MAWA: Ch 11 E&S: p61 – 68 WATP: p20 – 23	Practical Application 2

Term & Weeks	Key Teaching Points (Content)	Objectives	Text References	Assessments
8	Volume: conversions, rectangular prism, triangular prism, combined shapes Capacity: conversion, conversion between units of volume and capacity	1.3.11 – 1.3.13	MAWA: Ch 12, 13 E&S: p73 q7 – p74 q13 E&S: p76 q16 – p78 q22 E&S: p80 q27 - 28 WATP: p25 - 28	
9	Earning an Income: rates of pay, annual income, quotes, career research/ incomes **Term 1 : Ends 2 April 2015**	1.1.3 – 1.1.4, 1.1.6, 1.1.9, 1.1.12 – 1.1.13, 1.1.15 – 1.1.16, 1.1.18	MAWA: Ch 14	Test 2 (Ch 7 – 14 content)
Term 2 Week 1	Measurement Contracts: estimating and measuring length and area, rates, perimeter, formulae from algebraic table Commission	1.1.6, 1.1.9, 1.1.16, 1.2.2, 1.3.3 – 1.3.5, 1.3.7 – 1.3.8, 1.3.11, 1.3.14	MAWA: Ch 15, 16 E&S: p51 – 58, p34 WATP: p18 – 19, p10	
2	Superannuation Income Tax	1.1.3 – 1.1.6, 1.1.11 – 1.1.13, 1.2.2, 1.4.3	MAWA: Ch 17. 18	
3	Practical applications of Finance including conversion between percent, decimal and fractions, pay rates, superannuation, tax, commission, bank accounts	1.1.2 – 1.1.8, 1.1.10 – 1.1.13, 1.2.1 – 1.2.2, 1.3.4, 1.4.2, 1.4.5	MAWA: Ch 19. 20	Practical Application 3
4	Spending and discounts Best buy Online Shopping	1.1.6 – 1.1.7, 1.1.9 - 1.1.15, 1.4.1 – 1.4.2, 1.4.4, 1.4.6	MAWA: Ch 21, 22, 23 E&S: p32 – 33, 37 WATP: p10 – 11, 14 - 15	
5	Mobile Phones: data and conversions, practical applications, interpreting tables and graphs Budgets: spreadsheeting, income and expenses	1.1.3 – 1.1.7, 1.1.12, 1.4.1 – 1.4.4, 1.4.6	MAWA: Ch 24, 25 E&S: p101 – 124 WATP: p38	
6	Revision of Unit 1		E&S: p41-44, p125 - 134	Test 3 Unit Test

Semester 2 Commences Week 8

Mathematics Essential Course Outline Unit 2 : Semester 2 2016

***Text References**: MAWA (Essential Mathematics Units 1 and 2); E&S (Ellery and Strickland Mathematics Essential Units 1 and 2); WATP (WATP Classwork for Essential Mathematics Units 1 and 2)*

Term & Weeks	Key Teaching Points (Content)	Objectives	Text References	Assessments
Term 2 Week 8	Data Collection and Representation (revision) Types of Data: Categorical, Numerical, continuous, discrete Different types of data representation in real-world contexts Measures of Location: mean, median, mode Outliers Use of technology to work out measures of location	2.1.1, 2.1.2, 2.1.6 2.1.7, 2.1.8, 2.1.9	MAWA Ch 26, 27 WATP p47 MAWA Ch 28 E&S: p144 q1, 2, 3a, 3b, 4 (not range) WATP p54 q 1-5	
9	Representing Data: features of graphs, horizontal bar graph, column graph, dot plots, clusters, outliers Measures of location from a graph Describe spread using informal ways	2.1.3, 2.1.4, 2.1.5, 2.1.7, 2.1.8, 2.1.11, 2.2.1	MAWA Ch 29, 30 E&S: p147 mean, median & mode from graph, p145 WATP p49 - 50	
10	Measures of spread: informal ways of describing spread, range, interquartile range, standard deviation Outliers Interpret standard deviation Use of technology for measures of spread	2.1.11, 2.1.12	MAWA Ch 31, 31.5 (TG) E&S: p154 – 156 q1, 3, 5; p155-156 q2, 4, 6, 7 WATP p62-66 set 35 q1 (not s.d.), 2, 3 (not s.d.); set 37 q1-3; p62-66 set 35 q1 (s.d.), 3(s.d.), set 36 (all of p64), set 37 q4	
11	Histograms: graphs, mean, mode, median, range etc Outliers in histograms Characteristics of the shape of histograms **Term 2 ends 3 July 2015**	2.1.4, 2.1.5, 2.1.9, 2.1.11, 2.1.17	MAWA Ch 32 E&S: p140 q6, p142 q12, p173 q6c – e WATP p59, p72 q2	Test 4 – content from chapters 26 to 31.5
Term 3 Week 1	Stem and Leaf Displays: graph, mean, mode, median etc Outliers Back to back stem and leaf plots	2.1.4, 2.1.5, 2.1.7, 2.1.14	MAWA Ch 33 E&S: p139 , p141 q8, p151 q18, 19, p158, p172 WATP p53, p55 q7, p58,	

			p70	
2	Data groupings: calculate and interpret quartiles Mode, mean, median, 5 number summary Box and Whisker graphs Overall change in a quantity following repeated percentage changes	2.1.7, 2.1.10, 2.1.15, 2.1.16, 2.2.3	MAWA Ch 34, 35 E&S: p161 – 167 WATP p60 – 61, 67 - 69	
3 & 4	Blood Types Display categorical data in tables and column graphs Calculating the percentage of a given amount Statistics in the media: measures of central tendency and spread, graphs, real-world examples from the media, percentage calculations, time	2.1.3, 2.1.4, 2.1.6 – 2.1.8, 2.1.13, 2.2.1 – 2.2.3, 2.4.1	MAWA Ch 36, 37, Statistical Investigation Process (TG) E&S: p185 – 190(% review), p176 – 179 WATP p73 (obj 2.2.3)	Statistical Investigation (out)
5 & 6	Ratio Skills: common use of ratios, use of diagrams to show simple ratios, fractions and ratios, simplifying ratios, determine the ratio of two quantities in context, divide a quantity in a given ratio, use ratio to describe simple scales	2.3.1 – 2.3.7	MAWA Ch 38 E&S: p197 – 201 WATP p76	Statistical Investigation (in)
7 & 8	Applications of Ratios Rates: common usage, units, calculations, comparisons Simple Interest	2.3.1 – 2.3.12 2.2.1, 2.2.2, 2.2.4	MAWA Ch 39, 40, 41 E&S: p202 – 203, 204 – 211, 192 - 196 WATP p79, 80 – 82, 83 – 84 (2.3.10), p74 - 75	
9				Practical Application 4 (out)
10				Practical Application 4 (in) Test 5 – content from chapters 32 to 40
Term 4 Week 1	Time Calculations: use of units of time, conversions between units, fractional, digital and decimal representations, 12 hour and 24 hour time, time intervals	2.4.1 – 2.4.3	MAWA Ch 42 E&S: p213 – 217 WATP p85 - 87	

2	Timetables Speed: as a rate, formula, calculations, complex timetables, appropriate units, manipulation of the formula, speed from maps Reaction Times: practical activities, rates, time, time intervals, units, speed	2.3.8 – 2.3.12, 2.4.4 – 2.4.6, 2.4.10 – 2.4.12 2.4.1 – 2.4.3, 2.4.7	MAWA Ch 43, 44 E&S: p218 – 221 WATP p89 - 90 MAWA Ch 45	Practical Application 5
3	Distance – Time Graphs: With and without a scale, overall change in a quantity following repeated percentage changes, interpreting graphs, calculate and interpret the average speed Maps: use scales to calculate distances and lengths on maps, plan routes for practical purposes, calculate the time for a journey from the distance Scale diagrams: fractional, written and graphical scale Planning a journey	2.2.3, 2.4.13, 2.4.14 2.4.8, 2.4.9, 2.4.12	MAWA Ch 46, 47 E&S: p234 – 239 WATP p103 – 108 MAWA Ch 48, 49 E&S: p223 – 227 WATP p77, 78	
4	Networks: features, shortest path, traversability, minimal spanning tree (extension)	2.4.8, 2.4.9, 2.4 12	MAWA Ch 50 E&S: p228 – 233 WATP p92 – 94, 95 – 97 (minimal spanning tree), 98 – 102 (traversability)	Test 6 – unit test

Semester 2 Exams Commence Week 5