

2023/24 ANNUAL TEACHING PLANS: TECHNICAL MATHEMATICS: GRADE 10 (TERM 1)

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
DATE COMPLETED											
CAPS TOPICS	NUMBER SYSTEMS (INCLUDING BINARY NUMBERS AND INTRODUCTION OF COMPLEX NUMBERS)			EXPONENTS		ALGEBRAIC EXPRESSIONS					REVISION/ASSESSMENT
TOPICS/CONCEPTS, SKILLS AND VALUES	1. Identify rational numbers and convert terminating or recurring decimals into the form $\frac{a}{b}$ where $a, b \in \mathbf{Z}$ and $b \neq 0$. 2. Introduce binary and complex numbers 3. Determine between which two integers a given simple surd lies 4. Round real numbers to an appropriate degree of accuracy (to a given number of decimal digits)			1. Simplify expressions using the laws of exponents for integral exponents 2. Solve exponential equations (accepting that the laws of exponents hold for real exponents and solutions are not necessarily integral or even rational) 3. Revise scientific notation		1. Revise notation (interval, set builder, number line, sets) 2. Adding and subtracting of algebraic terms 3. Multiplication of a binomial by a binomial 4. Multiplication of a binomial by a trinomial 5. Determine the HCF and LCM of not more than three numerical or monomial algebraic expressions by making use of factorisation 6. Factorise: <ul style="list-style-type: none"> • Common factor (revision) • Grouping in pairs • Difference of two squares (revision) • Trinomials • Difference and sums of two cubes; and 7. Algebraic fractions <ul style="list-style-type: none"> • Simplifying, adding, subtracting, multiplying and division with numerators and denominators limited to the polynomials covered in factorisation 					All Term 1 topics
PAT & SBA	ASSIGNMENT & TEST										

2023/24 ANNUAL TEACHING PLANS: TECHNICAL MATHEMATICS: GRADE 10 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
DATE COMPLETED											
CAPS TOPICS	EQUATIONS AND INEQUALITIES			TRIGONOMETRY				REVISION/ASSESSMENT			
TOPICS/CONCEPTS, SKILLS AND VALUES	1. Revise notation (interval, set builder, number line, sets) 2. Solve linear equations 3. Solve equation with fractions 4. Manipulation of formulae (change subject of the formula) 5. Solve quadratic equations by factorisation of the form: • $x^2 + bx + c = 0$ • $-x^2 + bx + c = 0$ $ax^2 + bx + c = 0$ where a is a common factor 6. Solve simultaneous linear equations with two variables 7. Solve word problems involving linear, quadratic, or simultaneous linear equations 8. Solve simple linear inequalities			1. Know definitions of the trigonometric ratios $\sin \theta$, $\cos \theta$ and $\tan \theta$, using right-angled triangles for $0^\circ \leq \theta \leq 360^\circ$ 2. Introduce the reciprocals of the 3 basic trigonometric ratios, $\sin \theta$, $\cos \theta$ and $\tan \theta$ 3. Trigonometric ratios in each of the quadrants are calculated where one ratio in the quadrant is given by making use of diagrams (No variables) 4. Practise the use of a calculator for questions applicable to trigonometry 5. Solve simple trigonometric equations for angles between 0° and 90° 6. Solve two-dimensional problems involving right angled triangles (no variables) 7. Trigonometry graphs: • $y = a \sin \theta$, $y = a \cos \theta$ and $y = a \tan \theta$ for $0^\circ \leq \theta \leq 360^\circ$ • $y = a \sin \theta + q$ and $y = a \cos \theta + q$ for $0^\circ \leq \theta \leq 360^\circ$				Term 1 & 2 content			
PAT & SBA	PAT 1 & TEST /JUNE EXAMINATION										

2023/24 ANNUAL TEACHING PLANS: TECHNICAL MATHEMATICS: GRADE 10 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
DATE COMPLETED											
CAPS TOPICS	EUCLIDEAN GEOMETRY					ANALYTICAL GEOMETRY		FUNCTIONS AND GRAPHS			REVISION/ASSESSMENT
TOPICS/CONCEPTS, SKILLS AND VALUES	1. Revise basic geometry done in Grades 8 and 9 <ul style="list-style-type: none"> • Lines and parallel lines, angles, triangles congruency and similarity • Pythagoras' theorem • Calculate the unknown side of a right-angled triangle. 2. Apply the properties of line segments joining the mid-points of two sides of a triangle. Do practical problems. 3. Know the features of the following special quadrilaterals: the kite, parallelogram, rectangle, rhombus, square and 4. Trapezium (apply to practical problems)					1. Represent geometric figures on a Cartesian co-ordinate system 2. Apply for any two points $(x_1; y_1)$ $(x_2; y_2)$ formulae for determining the: <ul style="list-style-type: none"> • Distance between the two points • Gradient of the line segment connecting the two points (and from that identify parallel and perpendicular lines) • Coordinates of the mid-point of the line segment joining the two points; and • The equation of a straight line passing through two points. $y = mx + c$ 		1. Functional notation 2. Generate graphs by means of point-by-point plotting supported by available technology. 3. Drawing of the following functions: <ul style="list-style-type: none"> • Linear function • Quadratic function • Hyperbola • Exponential 			Term 3 content
PAT & SBA	PAT 2 & TEST										

2023/24 ANNUAL TEACHING PLANS: TECHNICAL MATHEMATICS: GRADE 10 (TERM 4)

TERM 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10		
DATE COMPLETED												
CAPS TOPICS	MENSURATION	CIRCLES, ANGLES, AND ANGULAR MOVEMENT	FINANCE AND GROWTH		REVISION & EXAMS							
TOPICS/CONCEPTS, SKILLS AND VALUES	Conversion of units, square units, and cubic units.	1. Define a radian 2. Indicate the relationship between degrees and radians, convert radians to degrees or degrees to radians and minutes to radians and radians to degrees and minutes	1. Use the simple and compound growth formulae and to solve problems, including interest hire purchase, inflation, population growth and other real-life problems 2. Understanding the implication of fluctuation foreign exchange rates (e.g., on the petrol price, imports, exports, overseas travel)		All topics/concepts, skills and values							
SBA	FINAL EXAMINATION (PAPER 1 & PAPER 2)											
EXAMINATION	PAPER 1				PAPER 2							
	TOPIC				MARKS		TOPIC				MARKS	
	Algebra (Number system, exponents, expressions, equations and inequalities)				60 ± 3		Analytical geometry				15 ± 3	
	Functions & graphs				25 ± 3		Trigonometry				40 ± 3	
	Finance, growth, and decay				15 ± 3		Euclidean geometry				30 ± 3	
							Mensuration and circles, angles, and angular movement				15 ± 3	
TOTAL				100		TOTAL				100		