CONTENT DISTRIBUTION

SUBJECT: MATHEMATICS

Class: Senior 2   **Number of periods per week:** 6 periods

Note: Teachers will refer to this list of lessons depending on the number of weeks for a school year.

Term 1   **(60 periods)**

UNIT 1: INDICES AND SURDS (18 periods)		
Key unit Competence: To be able to use rules of indices and surds to simplify mathematical situation involving indices and surds.		
Week	**Content**	**Number of Periods**
1	Definition of Indices/powers or exponents	1
	Operation on indices and their properties	2
	Fractional indices	1
	Applications of indices: Simple equations involving indices	2
2	standard form of index (indices with base 10)	2
	Surds/radicals: Definition, examples;	1
	Properties of surds, simplification of surds	2
	Operations on surds, rationalization of the denominator	2
3	Square roots calculation methods: estimation, Factorization, general method	3
	End unit assessment	1
	Remediation	1
UNIT 2: Polynomials (30 periods)		
Key unit Competence: To be able to perform operations, factorize polynomials, and solve related problems.		
Week	**Content**	**Number of Periods**
4	Definition and classification of polynomials including homogeneous polynomials, monomials, binomials, trinomials and polynomial of four term	6
5	Operations on polynomials and their properties: Addition and subtraction, , multiplication of polynomials, Division f polynomials, substitution and evaluation of a polynomial	5
	Numerical value of polynomials	1
6	Algebraic identities and equations	2
	Quadratic expressions and quadratic identities	4
7-8	Factorization of polynomials: by common factor, by grouping,	4
	Factorization of quadratic expressions: use of zeros (roots) of polynomials, use of algebraic identities; (sum and product), difference of two squares, etc.	4

	Application of quadratic identities	2
	End unit assessment	1
	Remediation	1

UNIT 3: Simultaneous liner equations and inequalities **(12/30 periods)**		
Key Unit Competence: To be able solve problems related to simultaneous linear equations and inequalities and represent the solutions graphically		
Week	**Content**	**Number of Periods**
9-10	Equation in two variables	1
	Definition and types of simultaneous linear equations in two variables: (independent simultaneous linear equations, dependent simultaneous linear equations, and inconsistent/incompatible simultaneous linear equations)	4
	Solving simultaneous linear equations in two unknowns using algebraic methods: Substitution, comparison, elimination, or cramer's rule.	5
	Forming and solving simultaneous equations from real life situations	1
	Assessment and remediation	1
11	Exams	

TERM 2: 72 periods

UNIT 3: Simultaneous liner equations and inequalities (18/30 periods)		
Key Unit Competence: To be able solve problems related to simultaneous linear equations and inequalities and represent the solutions graphically		

Week	Content	Number of Periods
1	Basic operations on inequalities	4
	Solving inequalities	2
2	Compound statements and inequalities	2
	Solving compound inequalities	4
3	Solving problems from real life situations involving simultaneous inequalities	4
	End unit assessment	1
	Remediation	1

UNIT 4: Multiplier for proportional change **(12 periods)**		
Key unit Competence: To be able to use a multiplier for proportional change		

Week	Content	Number of Periods
4	Proportional change	2
	Definition of multiplier	2
	Multiplier for increasing by a percentage	2
5	Multiplier for decreasing by a percentage	2
	Calculation of proportional change using multiplier	2
	End unit assessment	1
	Remediation	1

UNIT 5: Thales theorem (12 periods)		
Key Unit Competence: To be able to use Thales' theorem to solve problems related to similar shapes and determine the lengths of their sides and their areas.		

Week	Content	Number of Periods
6	Midpoint theorem	2
	Thales theorem in triangles	2
	Thales theorem in trapeziums	2
7	The converse of Thales theorem	2
	Application of Thales' theorem in calculating lengths and areas in proportional triangles and trapeziums	2
	End unit assessment	1
	Remediation	1

UNIT 6: Pythagoras's theorem (12 periods)		
Key Unit Competence: To be able to find the length of each side of a right angled triangle using Pythagoras' theorem.		
Week	**Content**	**Number of Periods**
8	Pythagoras' theorem	3
	Proof of Pythagoras theorem	3
9	Pythagorean triples (numbers)	2
	Application of Pythagoras theorem in solving real life problems involving right angled triangles.	4
	End unit assessment	1
	Remediation	1
UNIT 7: Vectors (18 periods)		
Key Unit Competence: To be able to solve problems involving operation on vectors		
Week	**Content**	**Number of Periods**
10	Concept of a vector: definition, notation, characteristics, representation	1
	Vectors on a Cartesian plane: Components of a vector, a column vector, the null vector, Midpoint of a column vector	3
	Midpoint of a column vector	1
	Equality of vectors	1
11	Operation of vectors: Addition of vectors, subtraction of vectors	4
	Position vector	2
12	Multiplication of a vector by a scalar	1
	Magnitude of a vector as its length	3
	End unit assessment	1
	Remediation	1
13	Exams	

TERM 3   (72 periods)

UNIT 8: Parallel and orthogonal projections (12 periods)		
Key Unit Competence: To be able to transform shapes under parallel or orthogonal projections		
Week	**Content**	**Number of Periods**
1	Introduction to parallel projection	1
	Parallel projection of a point on a line	1
	Parallel projection of a line segment on a line	1
	Image of geometric shape under parallel projection on a line	2
	Properties of parallel projection	1
2	Introduction to orthogonal projection	1
	Orthogonal projection of a point on a line	
	Orthogonal projection of a line segment on a line	1
	Image of geometric shape under orthogonal projection on a line	2
	Properties of an orthogonal projection	1
	Application of parallel and orthogonal projection in real life problems	
	End unit assessment	1
	Remediation	
UNIT 9: Isometries (24 Periods)		
Key Unit Competence: To be able to transform shapes using congruence, central symmetry, reflection, translation and rotation.		
Week	**Content**	**Number of Periods**
3	Introduction to isometries	1
	Definition of central symmetry of a point	1
	Image of a geometric figure under the central symmetry	2
	Properties of central symmetry	1
	Definition of reflection of a point	1
4	Image of a geometric figure under the reflection	2
	Properties of reflection	1
	Definition of rotation of a point	1
	Image of a geometric figure under the rotation	2
5	Properties of a rotation	1
	Definition of the translation of a point	1
	Image of a geometric figure under the translation	2
	Properties of a translation	1
	Common properties of Isometries	1
6	Composite transformations	1
	Image of a geometric figure under a composite transformation	2
	Application of congruent transformations in real life problems	1

	End unit assessment	1
	Remediation	1

UNIT 10: Statistics with grouped data **(24 Periods instead of 30 periods)**		

Key Unit Competence: To be able to collect, represent, and interpret grouped data		
Week	**Content**	**Number of Periods**
7	Definition and examples of grouped data	2
	Grouping data into classes	4
8	Frequency distribution table for grouped data.	4
	Data representation: class boundaries, Histogram	2
9-10	Data representation: Frequency polygon, pie-chart, cumulative frequency table and graph, superposed polygons.	4
	Measures of central tendencies: Arithmetic mean, Mode, Range, Median	4
	Reading and interpreting statistical graphs or diagrams	2
	End unit assessment	1
	Remediation	1

UNIT 11: Tree and Venn diagrams in probability **(12 Periods)**		

Key Unit Competence: To be able to determine probabilities and assess likelihood by using tree and venn diagrams.

Week	**Content**	**Number of Periods**
11	Introduction to the probability of an event	1
	Tree diagrams and total number of outcomes for an event	1
	Use of tree diagrams to determine the probability	2
	Set concepts and outcomes of events: union, intersection, complement	2
	Determining probability using Venn diagrams	
12	Mutually exclusive events	2
	Independent Events	2
	End unit assessment	1
	Remediation	1
13	Exams	