St. Mary's College

Course Outline

Form 2

Academic year

2023/ 2024

Term 1

	Topic	Modules
	Review	- Working with integers - Order of operations
1.	Indices	- Indices laws 1. $a^m \times a^n = a^{m+n}$ 2. $a^m \div a^n = a^{m-n}$ 3. $a^{-n} = \frac{1}{a^n}$
2.	Standard/Scientific notation	- Expressing and working with numbers in scientific notation
3.	Significant figures	- Whole numbers - Decimals - Up to four significant figures
4.	Algebraic Expressions	- Substitution into a formulae - Simplifying algebraic expressions, addition subtraction, multiply brackets by a single term - Solving linear equations with, 1unkown on one side, 1 unknown on both sides - Worded problems - Subject of the formulae
5.	Inequalities	- Symbols $>, \geq, <, \leq$ - Graphical representation on a number line - Interpretation using set notation

TERM 2

1.	Functions and Relations	- Definition of functions and relations - Function notation
2.	Cartesian Plane	- Points on all quadrants - Linear scales

3.	Equation of a line	- Find gradient of line , m : Using two points,$\frac{y-step}{x-step}$ - Identify y- intercept - Use format $y = mx + c$
3.	Vectors	- Define vector - Express vector in column notation $\binom{x}{y}$ - Represent vector graphically - Perform operations on vector: addition and subtraction
4.	Geometric transformations 1	- Shapes : properties of congruent and similar shapes - Translation - Refection

Term 3

1.	Geometric Transformations 2	Rotation - Standard shapes about the Origin - Angles of 90, 180, 270, 360 degrees Enlargement - About the Origin - Scale Factors of ½, 2, 3
2.	Number Bases	- Conversion from Denary to Binary - Conversion from Binary to Denary
3.	Area and Volume	- Area of 2D Shapes, Regular and Irregular - Area of a Circle - Volumes of Solids including Prisms whose ends have the same shape (i.e. Using cross-sectional area)
4.	Ratio and Proportion	- Define Ratio and Proportion - Problem solving applying Ratio and Proportion
5.	Angles and Polygons	- Properties of Angles - Parallel lines and Transversal Lines - Finding Angles