IMMACULATE CONCEPTION HIGH SCHOOL DEPARTMENT OF MATHEMATICS
TERM 1 PLAN – Sept to Dec 2023

NAME OF TEACHERS: Miss Mossop, Ms. Pryce, Ms. Dudley, Mr. McCalla, Mrs. York, Ms. Parker & Ms Thompson

GRADE: 11	**Weighting: Test – 60%**	**Description: 2 tests (minimum)**
TERM 1	**Course work 40%**	**4 Course work (2 class work & 1 quizzes & 1 project)**

WEEK	**DATE**	**TOPICS**	**OBJECTIVE :** Students should be able to :	**ASS'T/ ACTIVITY SHEETS**
1	SEPT 4-8	**ORIENTATION WEEK**	This week will be used to: 1. Sensitized students to what school term will look like Discussion is expected on ● Review of the previous year ● Assignment ● Grading ● Channel of communication ● Teaching and learning expectations and challenges ● Review solution to EOY Exam (Grade 10) 2. SBA discussion	**4 QUIZ** **Six weekly test (2)** Other Materials: Handouts, Powerpoint Videos Test
2	Sept 11-15	VECTORS	Students should be able to: 1. Define a vector. 2. Give the different ways in which a vector may be represented. 3. Add and subtract vectors using component form i. e. vectors written as 2×1 column matrices.	

	3	Sept 18-22		4. Add vectors by the triangle or parallelogram laws. 5. Multiply a vector by a scalar number. 6. Recognize that a scalar may be distributed over addition of vectors. 7. Recognize zero vectors and the negative of a vector. 8. Determine the magnitude of a vector. 9. Identify parallel vectors. 10. Associate a position vector $\overrightarrow{OP} = \begin{pmatrix} a \\ b \end{pmatrix}$ with a given point P(a, b) where O is the origin (0, 0) and represent this vector on graph 11. Associate a position vector as a vector of unit length. 12. Use vectors to solve problems in geometry (e.g. proving that points are **collinear**, proving line segments parallel, prove shapes to be a parallelogram, etc).	
	4	Sept 25-Sept 29	**<u>TRAVEL GRAPHS</u>**	Students should be able to: 1. Draw and use distance-time graphs i) recognize that the gradient gives the speed	

				ii) interpret positive, negative and zero gradient iii) determine the speed 2. Draw and use speed-time/velocity-time graphs. i) recognize that the gradient gives the acceleration ii) interpret positive, negative and zero gradient iii). Calculate the acceleration iv). calculate the distance [area under the graph] of the velocity time graph	
	5	Oct 2-6		3. Draw and use the graphs of the function $y = ax^{-1}$ and $y = ax^{-2}$ for specific domains.	
	6	Oct 9-Oct 13	**<u>FUNCTIONS & GRAPHS</u>**	1. Review of functions done in grade 9 (evaluating functions) 2. Recognize and use the inverse function notation ie Given the function $f(x)$, *then inverse function* $\boldsymbol{f-1(x)}$**.** 3. Find the inverse of a function	
	7	Oct 23-27		**SIXTH WEEK TEST** **(Test Topics: VECTORS & TRAVEL GRAPHS)**	

	8	**Oct 30- Nov 3**		1. Evaluate inverse function at a given value of x 2. Example $^{-1}(a)$, where $a \in \mathbb{R}$. 3. Evaluate composite function at a given value of x 4. example $fg(a)$, where $a \in \mathbb{R}$.	
	9	**Nov 6-10**		1. Read and interpret graphs of functions. 2. Use graphs to determine the elements of the domain, which have a given image or vice versa. 3. Use graphs to determine the interval of a domain for which the elements of the range may be positive or negative. 4. Use graphs to determine the roots of the given function. 5. Use graphs to determine the maximum or minimum values of the function over a given interval. 6. Use graphs to find the solution set of quadratic and linear equations.	
10-11		**Nov 13 - Nov 24**	**<u>CIRCLE THEOREMS</u>**	1. Solve problems using the following theorems related to the properties of a circle: (a) the angle which an arc of a circle subtends at the centre of a circle is twice the angle it subtends at any point on the remaining part of the circumference. (b) The angle in a semicircle is a right angle. (c) Angles in the same segment of a circle and subtended by the same arc are equal. (d) The opposite angles of a cyclic quadrilateral are supplementary. (e) The exterior angle of a cyclic quadrilateral is equal to the interior opposite angle. (f) A tangent of a circle is perpendicular to the radius of that circle at the point of contact. (g) The lengths of two tangents from an external point to the point of contact on the circle are equal. (h) The angle between a tangent to a circle and a chord through the point of contact is equal to the angle in the alternate segment. The line joining the centre of a circle to the midpoint of a chord is perpendicular to the chord.	
12		**Nov 27-**	**<u>Linear</u>**	Students should be able to:	

	Dec 1	**<u>Programming</u>**	1. Review inequalities 2. Use linear programming techniques to solve problems involving two variables.	
13	**Dec 4-8**		**SIXTH WEEK TEST** **(Topics: FUNCTIONS & GRAPH, CIRCLE THEOREMS)**	
14	**Dec 11-15**	**<u>Variation</u>**	1. Represent direct and inverse variations symbolically. 2. Perform calculations involving direct variation and inverse variation	