# CAPE MATHEMATICS

Scheme of work 2020-2021

SEPTEMBER 1, 2020
PRESENTATION COLLEGE
Chaguanas

| | | Term I – 01/9/2020 – 11/12/2020 |
|---|---|---|
| **Programme/Qualification Title:**<br>**Cape Mathematics Unit One** | | |
| **Teachers:**<br>Mr. Anthony Hosein<br>Mr. Ganesh Pulchan | **No of weeks**<br>15 | **No of sessions per cycle:**<br><br>Five Sessions (each 2 hours) |

| Topic # | Name | Content |
|---|---|---|
| 1 | Reason and Logic<br>1 week | Truth tables, Compound statements, Connectives, Conditional statements, Equivalent Propositions, Tautology, Algebra of Propositions |
| 2 | Real Number System<br>1 week | Operations, Closure, Commutativity, Associativity, Identity, Inverse, Simple proofs – exhaustion, direct, contradiction, counter example |
| 3 | Principal of Induction<br>2 weeks | Sequence and series, Sigma notation, Divisibility test and Mathematical Induction |
| 4 | Polynomials<br>1 week | Degree, Remainder Theorem, Factor Theorem, Factorising and Solving Equations |
| | **INTERNAL ASSESSMENT # 1** | |
| 5 | Indices, Surds and Logarithms 1 week | Laws, Simplification, Rationalising, Exponential, Logarithmic, Solving equations, Change of base, Application |
| 6 | Functions<br>1 week | Describing a function, one to one, onto, bi-jective, inverse, odd and even, periodic, composite, increasing and decreasing, transformations of graphs |
| 7 | Cubic Polynomials<br>2 weeks | Finding the roots |
| 8 | Inequalities & Modulus Function<br>2 weeks | Theorem of inequalities, quadratic inequalities, sign table, triangle inequality |
| 9 | Trigonometry & Co-ordinate Geometry<br>2 weeks | Inverse trig functions and graphs, solving trig functions, trig identities, equations involving double- angle and half-angle, review of co-ordinate geometry, circles, parametric equations |
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| Programme/Qualification Title: **Cape Mathematics Unit One** | | Term II – 6/01/2020 – 3/04/2020 |
|---|---|---|
| **Teachers:** <br> Mr. Anthony Hosein <br> Mr. Ganesh Pulchan | **No of weeks** <br> 13 | **No of session per cycle:** <br><br> 5 Sessions (each 2 hours) |

| Topic # | Name | Content |
|---|---|---|
| 1 | Vectors in 3D <br> 2 weeks | Algebra of vectors, equality, magnitude, displacement, unit, angle between, perpendicular and parallel vectors, equation of line, equation of plane, Cartesian equation of plane |
| | **INTERNAL ASSESSMENT # 2** | |
| 2 | Limits & Continuity <br> 1 weeks | Evaluation – direct substitution, factorising , conjugate; Tending to infinity, Continuity, Types of discontinuity – infinite, point, jump |
| 3 | Differentiation I <br> 2 weeks | First principle, Chain rule, product rule, quotient rule, derivative of trig functions |
| 4 | Application of Differentiation 2 weeks | Tangents, normal, stationary points, rates of change, graphs of rational functions |
| 5 | Integration 2 weeks | Anti-derivative, integration theorem, integral of trig functions, definite integral. |
| 6 | Application of Integration <br> 1 week | Area under curve, between curves and axes, volume of solids of revolution |
| 7 | Differential Equations <br> 1 week | Classifying differential equations, First order, modelling problems, Second order differential equations |
| | **Term III – Correction of Mock Exams / Past Papers/IA #3** | |