



CROCUS PLAINS REGIONAL SECONDARY SCHOOL COURSE OUTLINE AND ASSESSMENT GUIDE

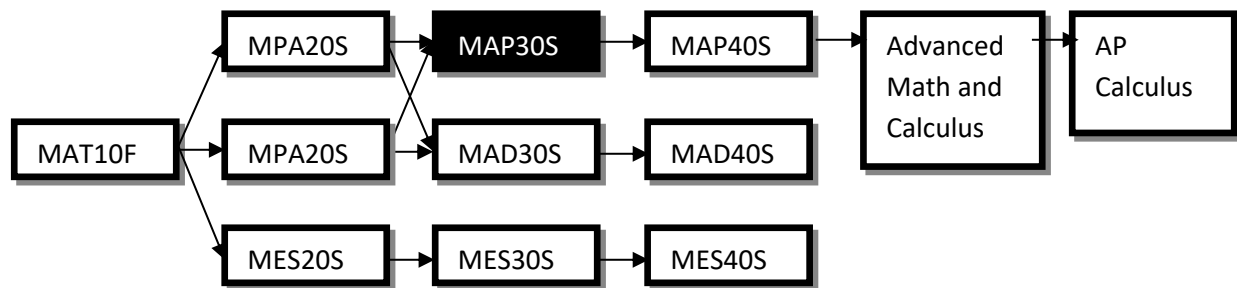
Course Name: Grade 11 Pre-Calculus (MAP30S)

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Course Description:

- Grade 11 Pre-calculus Mathematics (30S) is designed for students who intend to study math or science as part of post-secondary education. It builds on the topics studied in Grade 10 Introduction to Applied and Pre-calculus Mathematics and provides background knowledge and skills for Grade 12 Pre-calculus mathematics.



****All students require at least one mathematics credit at each grade level for graduation.
The pathways shown are recommended, but there are different options.***

Text/Other Resources: Pre-Calculus 11 (McGraw-Hill Ryerson)
and Grade 11 Pre-Calculus Cumulative Exercises

Scientific or Graphing Calculator

Graph Paper

Units of Study

Unit Title	Learning Outcomes <i>It is expected that students will:</i>	Assessment Plan	Proposed Time
Series' and Sequences	11P.R.9. Analyze arithmetic sequences and series to solve problems. [C, CN, PS, R, T] 11P.R.10. Analyze geometric - sequences and series to solve problems. [C, CN, PS, R, T]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	10 days
Trigonometry	11P.T.1. Demonstrate an understanding of angles in standard position $[0^\circ \text{ to } 360^\circ]$. [C, R, V] 11P.T.2. Solve problems, using the three primary trigonometric ratios (sine, cosine and tangent) for angles from 0° to 360° in standard position. [C, ME, PS, R, T, V] 11P.T.3. Solve problems, using the cosine law and sine law, including the ambiguous case. [C, CN, PS, R, T]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	12 days
Quadratic Functions	11P.R.1. Factor polynomial expressions of the form: $ax^2+bx+c, a \neq 0$ $a^2x^2-b^2y^2, a \neq 0, b \neq 0$ $a(f(x))^2+b(f(x))+c, a \neq 0$ $a^2(f(x))^2-b^2(g(y))^2, a \neq 0, b \neq 0$ where a, b and c are rational numbers. [ME, R]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	10 days

	11P.R.3. Analyze quadratic functions of the form $y = a(x - p)^2 + q$ and determine the: • vertex • domain and range • direction of opening • axis of symmetry • x- and y-intercepts. [C, CN, R, T, V] 11P.R.4. Analyze quadratic functions of the form $y = ax^2 + bx + c$ to identify characteristics of the corresponding graph, including: • vertex • domain and range • direction of opening • axis of symmetry • x- and y-intercepts [C, CN, PS, R, T, V] 11P.R.5. Solve problems that involve quadratic equations. [C, CN, PS, R, T, V]		
More Quadratics	11P.R.1. Factor polynomial expressions of the form: • $ax^2 + bx + c, a \neq 0$ • $a^2x^2 - b^2y^2, a \neq 0, b \neq 0$ • $a(f(x))^2 + b(f(x)) + c, a \neq 0$ • $a^2(f(x))^2 - b^2(g(y))^2, a \neq 0, b \neq 0$ where a, b and c are rational numbers. [ME, R] 11P.R.3. Analyze quadratic functions of the form $y = a(x - p)^2 + q$ and determine the: • vertex • domain and range • direction of opening • axis of symmetry • x- and y-intercepts. [C, CN, R, T, V]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	10 days

	11P.R.4. Analyze quadratic functions of the form $y = ax^2 + bx + c$ to identify characteristics of the corresponding graph, including: • vertex • domain and range • direction of opening • axis of symmetry • x- and y-intercepts [C, CN, PS, R, T, V] 11P.R.5. Solve problems that involve quadratic equations. [C, CN, PS, R, T, V]		
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Rational Expressions and Equations	11P.A.4. Determine equivalent forms of rational expressions (limited to numerators and denominators that are monomials, binomials or trinomials). [C, ME, R] 11P.A.5. Perform operations on rational expressions (limited to numerators and denominators that are monomials, binomials or trinomials). [C, CN, ME, R] 11P.A.6. Solve problems that involve rational equations (limited to numerators and denominators that are monomials, binomials or trinomials). [C, CN, PS, R] 11P.R.11. Graph and analyze reciprocal functions (limited to the reciprocal of linear and quadratic functions). [CN, R, T, V]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	12 days
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Absolute Value and Radicals	11P.A.1. Demonstrate an understanding of the absolute value of real numbers. [ME, R, V] 11P.R.2. Graph and analyze absolute value functions (limited to linear and quadratic functions) to solve problems. [C, PS, R, T, V] 11P.A.2. Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands. [CN, ME, PS, R, T] 11P.A.3. Solve problems that involve radical equations (limited to square roots). [C, CN, PS, R, T]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	12 days
Inequalities and Systems of Equations	11P.R.6. Solve, algebraically and graphically, problems that involve systems of linear-quadratic and quadratic-quadratic equations in two variables. [C, CN, PS, R, T, V] 11P.R.7. Solve problems that involve linear and quadratic inequalities in two variables. [C, PS, T, V] 11P.R.8. Solve problems that involve quadratic inequalities in one variable. [CN, PS, V]	<u>Formative Assessment</u> May include: Mental Math, Text Exercises, Observation, and Participation <u>Summative Assessment</u> Tests, Assessment Activities	10 days
<i>Processes:</i> C – Communication PS – Problem Solving V – Visualization CN – Connections R – Reasoning T – Technology ME – Mental Mathematics and Estimation			

Assessment Guidelines

There are various purposes for assessment:

- Assessment *for* learning (**formative assessment**): where assessment helps teachers gain insight into what students understand in order to plan and guide instruction, and provide helpful feedback to students.
- Assessment *of* learning (**summative assessment**): where assessment informs students, teachers and parents, as well as the broader educational community, of

achievement at a certain point in time in order to celebrate success, plan interventions and support continued progress.

Academic Achievement

Grades will be calculated on summative assessment information only. The final calculation will be a fair reflection of a student's achievement of the learning outcomes.

Term Work80%

- **Tests.....70%**
- **Assessment Activities10%**

Final Assessment 20%

- **School-based Exam**

Learning Behaviours

Assessment and reporting of learning behaviors will be according to the Brandon School Division Learning Behaviors Rubric.

Unit/Term Summative Assessment – Due Dates

All assessments and/or evaluations will be assigned a reasonable completion date. If absent, students are responsible for getting notes, completing assignments, or making arrangements for tests to be written during their own time. **Students will be provided the opportunity to write a test they missed if the absence for the missed test was excused.**