



CENTENNIAL REGIONAL HIGH SCHOOL

COURSE OUTLINE 2019-2020

Subject: Mathematics; Science Option

Level: Secondary 4

Course Content:

- **Arithmetic and Algebra**
 - Algebraic expressions
 - Real functions
 - Systems
 - Manipulating algebraic expressions
 - Analyzing algebraic situations

- **Statistics**
 - Two-variable distribution
 - Organizing and analyzing a two-variable distribution

- **Geometry and Graphs**
 - Equivalent figures
 - Analytic geometry
 - Measurement (metric relations and triangles)
 - Analyzing geometric situations
 - Trigonometry (Right-angled Trigonometry, Sine Law & Cosine Law)

Evaluation Methods

Under the Quebec Education Program (QEP), students will be evaluated according to two Mathematical competencies. (*see chart*)

Term Weighting:

In accordance with the revised QEP, each term will be weighted.

TERM 1: 20%

TERM 2: 20%

TERM 3: 60%

Student Materials:

Math 3000 Science Option workbook and Ministry Exam preparation

EVALUATING WITH COMPETENCIES

| C1: Solves a Situational Problem 30% | C2: Uses Mathematical Reasoning 70% |
|--|---|
| <p><i>A situational problem . . .</i></p> <ul style="list-style-type: none"> ▪ Has not previously been presented in the learning process ▪ Involves using a new combination of rules or principles, that the student may or may not have previously learned, in order to create a solution ▪ Has a solution that has not been encountered before <p><i>The student will . . .</i></p> <ul style="list-style-type: none"> ▪ Decode the elements of the problem that can be processed mathematically ▪ Represent the problem by using a mathematical model ▪ Work out a mathematical solution ▪ Validate the solution ▪ Share information related to the solution <p><i>Evaluation Criteria</i></p> <p>CR1 Oral or written indication that the student has an appropriate understanding of the situational problem</p> <p>CR2 Mobilization of mathematical knowledge appropriate to the situational problem</p> <p>CR3 Development of a solution appropriate to the situational problem</p> <p>CR4 Appropriate validation of the steps in the solution</p> | <p><i>A reasoning problem . . .</i></p> <ul style="list-style-type: none"> ▪ Requires organization & application of mathematical concepts & processes in a clearly defined context ▪ Could be one of three different subtypes: <ul style="list-style-type: none"> - <i>Application</i>: Choose & apply the appropriate mathematical concepts - <i>Validation</i>: Justify a statement, check a result/procedure, take a position, provide a critical assessment or convince using mathematical arguments - <i>Conjecture</i>: Uses inductive, analogical, and deductive reasoning to make a proposition or a conjecture <p><i>The student will . . .</i></p> <ul style="list-style-type: none"> ▪ Make conjectures ▪ Construct & use networks of mathematical concepts & processes ▪ Construct proofs <p><i>Evaluation Criteria</i></p> <p>CR3 Proper implementation of mathematical reasoning suited to the situation</p> <p>CR2 Correct application of concepts and processes suited to the situation</p> <p>CR4 Proper organization of the steps in a proof suited to the situation</p> <p>CR5 Correct justification of the steps in a proof suite to the situation</p> <p>CR1 Formulation of a conjecture appropriate to the situation</p> |