# FOUNDATIONS OF MATH 120

**COURSE OUTLINE – JANUARY 2024**

**TEACHER:** D. HARDING

**TEXTS:** Foundations of Mathematics 120 (Nelson)

**WEBSITE:** http://mvhs.nbed.nb.ca/teacher/ms-harding

**COURSE DESCRIPTION:**

This elective course follows *Foundations of Mathematics 11*. This pathway is designed to provide students with the mathematical understandings and critical-thinking skills identified for post-secondary studies in programs that do not require the study of theoretical calculus.

**MATERIALS NEEDED:**

- Pencils and an eraser
- Notebook/Binder to maintain daily notes and homework exercises
- Scientific Calculator

**EXPECTATIONS:**

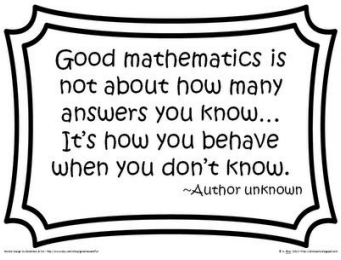
The pace of this course will be rapid. Students will be expected to maintain excellent attendance. In the event of an absence, students are responsible for all missed work. (Please check the Math website noted above for weekly updates & follow our class TEAM/OneNote for daily work/lessons.) If a student is absent for a test without a valid excuse, they will be given a **mark of zero**. It will be the responsibility of the student to present a satisfactory written excuse and arrange to write the test on his or her own time.
*To be eligible for academic incentives, students must miss 7 or fewer classes & have a passing grade going into the exam. 3 lates = 1 absence

**TOPICS:**

Statistics
Probability
Logical Reasoning
Relations and Functions

**EVALUATION:**

| | | * *Academic Incentive Options…* | | |
|---|---|---|---|---|
| Tests / Quizzes / Assignments | 70 % | ***85 %*** | ***OR*** | ***50%*** |
| Exam | 30 % | ***15 %*** | | ***50%*** |




# To Learn Math Is To Do Math !!!

***Foundations of Mathematics 120***

**[C]** Communication, **[PS]** Problem Solving, **[CN]** Connections, **[R]** Reasoning, **[ME]** Mental Mathematics and Estimation, **[T]** Technology **[V]** Visualization

**Statistics**

**General Outcome:** Develop statistical reasoning.

Specific Outcomes

**S1.** Demonstrate an understanding of normal distribution, including standard deviation, *z*-scores. [CN, PS, T, V]

**S2.** Interpret statistical data, using confidence intervals, confidence levels, margin of error. [C, CN, R]

**Logical Reasoning**

**General Outcome:** Develop logical reasoning.

Specific Outcomes

**LR1.** Analyze puzzles and games that involve numerical and logical reasoning, using problem-solving strategies. [CN, ME, PS, R]

**LR2.** Solve problems that involve the application of set theory. [CN, PS, R, V]

**LR3.** Solve problems that involve conditional statements. [C, CN, PS, R]

**Probability**

**General Outcome:** Develop critical thinking skills related to uncertainty.

Specific Outcomes

**P1.** Interpret and assess the validity of odds and probability statements. [C, CN, ME]

**P2.** Solve problems that involve the probability of mutually exclusive and non–mutually exclusive events. [CN, PS, R, V]

**P3.** Solve problems that involve the probability of two events. [CN, PS, R]

**P4.** Solve problems that involve the fundamental counting principle. [PS, R, V]

**P5.** Solve problems that involve permutations. [ME, PS, R, T, V]

**P6.** Solve problems that involve combinations. [ME, PS, R, T, V]

**P7.** Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers). [CN, R, V]

**Relations and Functions**

**General Outcome:** Develop algebraic and graphical reasoning through the study of relations.

Specific Outcomes

**RF1.** Represent data, using polynomial functions (of degree ≤ 3), to solve problems. [C, CN, PS, T, V]

**RF2.** Represent data, using exponential and logarithmic functions, to solve problems. [C, CN, PS, T, V]

**RF3.** Represent data, using sinusoidal functions, to solve problems. [C, CN, PS, T, V]