RICHVIEW COLLEGIATE INSTITUTE

PROGRAM AREA: Mathematics	**COURSE NAME: Functions and Applications**
COURSE CODE: MCF3M	**GRADE/LEVEL: 11**
PREREQUISITE: Principles of Mathematics, 10, Academic, or Foundations of Math, 10, Applied	**CREDIT VALUE: 1**

Cost of Textbook/equipment replacement: $ 85 *(if lost or damaged)*

Additional Course Costs: None

Textbooks(s)/Resources: Functions and Applications 11 Nelson

COURSE DESCRIPTION:
This course introduces basic features of the function by extending students' experiences with quadratic relations. It focuses on quadratic, trigonometric, and exponential functions and their use in modelling real-world situations. Students will represent functions numerically, graphically, and algebraically; simplify expressions; solve equations; and solve problems relating to applications. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

CURRICULUM STRANDS (UNITS) and OVERALL EXPECTATIONS:

1. Quadratic Functions

* expand and simplify quadratic expressions, solve quadratic equations, and relate the roots of a quadratic equation to the corresponding graph;
* demonstrate an understanding of functions, and make connections between the numeric, graphical, and algebraic representations of quadratic functions;
* solve problems involving quadratic functions, including problems arising from real-world applications.

2. Exponential Functions

* simplify and evaluate numerical expressions involving exponents, and make connections between the numeric, graphical, and algebraic representations of exponential functions;
* identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications;
* demonstrate an understanding of compound interest and annuities, and solve related problems.

3. Trigonometric Functions

* solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications;
* demonstrate an understanding of periodic relationships and the sine function, and make connections between the numeric, graphical, and algebraic representations of sine functions;
* identify and represent sine functions, and solve problems involving sine functions, including problems arising from real-world applications.

CURRICULUM STRANDS (UNITS) and OVERALL EXPECTATIONS: ***(continued)***

Throughout this course, students will

- **Problem Solve**
- **Reason and Demonstrate**
- **Reflect, and apply**
- **Select Tools and Computational Strategies**
- **Connect (between mathematical concepts and procedures)**
- **Represent and determine through investigation**
- **Communicate**

Assessment and Evaluation

Assessment and Evaluation are based on the expectations and levels of achievement outlined in the provincial curriculum document for each subject. A wide range of assessment and evaluation opportunities allows students to demonstrate their learning in a variety of ways. This information provides the basis for reporting student grades on the Provincial Report Card.
A final mark will be calculated using the following categories or strands.

70% Course Evaluation: (based on the following % breakdown of categories/strands):
All four achievement categories/strands do not need to be evaluated in each evaluation task.

Communication (15%)	Knowledge/Understanding (35%)	Thinking and Inquiry (15%)	Application/Making Connections (35%)
quizzes, tests, assignments following instructions math conventions presentations	*quizzes, tests, assignments math conventions presentations*	*tests, assignments math conventions presentations*	*quizzes, tests, assignments math conventions presentations*

30% Final Examination (based on the above % breakdown of categories/strands):

Components of Summative Evaluation: FINAL EXAMINATION

***** A detailed explanation of the culminating activity/activities will be distributed to students in the class.***

Learning Skills: ***The report card provides a record of the learning skills, demonstrated by the student in every course in the following six categories: Responsibility, Independent Work, Initiative, Organization, Collaboration, Self-Regulations. The learning skills are evaluated using a four-point scale (E-Excellent, G-Good, S-Satisfactory, N -Needs Improvement).***

Please refer to the Student Agenda Planner for details regarding the Achievement Chart and Learning Skills.

We believe that homework completion is essential for student success.