RICHVIEW COLLEGIATE INSTITUTE

PROGRAM AREA: Mathematics	**COURSE NAME: Principles of Mathematics**
COURSE CODE: MPM2D1/3	**GRADE/LEVEL: 10**
PREREQUISITE: Grade 9 Mathematics, Academic	**CREDIT VALUE: 1**

Cost of Textbook/equipment replacement: $90.00
              (if lost or damaged)

Additional Course Costs: None

Textbooks(s)/Resources: MATHPOWER 10, McGraw-Hill Ryerson

COURSE DESCRIPTION:

This course enables students to broaden their understanding of relationships and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and abstract reasoning. Students will explore quadratic relations and their applications; solve and apply linear systems; verify properties of geometric figures using analytic geometry; and investigate the trigonometry of right and acute triangles

CURRICULUM STRANDS (UNITS) and OVERALL EXPECTATIONS:

1. Quadratic Relations of the form $y = ax^2 + bx + c$
     * **determine the basic properties**
     * **relate transformations of the graph of $y = x^2$ to $y = a(x - h)^2 + k$**
     * **solve quadratic equations and interpret the solutions with respect to the corresponding relations**
     * **solve problems involving quadratic relations.**

2. Analytic Geometry
     * **model and solve problems involving the intersection of two lines**
     * **solve problems using analytic geometry involving properties lines of line segments**
     * **verify geometric properties of triangles and quadrilaterals, using analytic geometry**

3. Trigonometry
     * **use knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity**
     * **solve problems involving right triangles, using the primary trig ratios and the Pythagorean Theorem**
     * **solve problems involving acute triangles, using the sine law and cosine law**

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 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.

Formative Evaluation: *(70% of the final mark will be based on evaluations conducted throughout the course)*
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 journals following instructions math conventions presentations / reports	*quizzes / tests / assignments math conventions presentations / reports*	*tests / assignments math conventions presentations / reports*	*quizzes / tests/ assignments math conventions presentations / reports*

Summative Evaluation: *(30% of the final mark will be based on a final evaluation in the form of culminating activities).*

Components of Summative Evaluation: *Exam (30%)*
All 4 categories (communication, knowledge, TIPS, and applications) will be represented on the exam.
*** A detailed explanation of the culminating activity/activities will be distributed to students in the class.*

No student is exempt from the final exam.
Summer school may be available to students who achieve between 35% and 49%.

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-Regulation. 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.