MPM2D – Grade 10 Mathematics
Course Profile & Evaluation

Senior High

Course Description/Rationale/Overview

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. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

Prerequisite: Mathematics, Grade 9, Academic

Class Requirements
Student Responsibility
Students must seek assistance from the teacher for all work missed due to absence and must make arrangements to complete missed work.

Course Requirements/Department Policies

Attendance requirement
Students are required to log in at least once per week on course activity. Students are expected to spend approximately 7 hours per week for both online and offline learning activities. Students are required to keep a Student Learning Log for each course documenting online and offline activities.

What is considered an Absence
1. Students failed to login in 2 consecutive weeks will be counted as one absence;
2. By mid-term, if students failed to complete 40% of course work;
When a student has 3 or more absences, the school will issue a warning letter.

Evaluation
Assignments, projects, quizzes, tests and final examination

Curriculum Strands
1. Quadratic Relations of the Form of $y = ax^2 + bx + c$
2. Analytic Geometry
3. Trigonometry

Achievement Categories
- Knowledge & Understanding 30%
- Thinking & Inquiry   30%
- Communication   20%
- Application   20%

Learning Skills
- Initiative
- Work Habits/Homework
- Organization
- Works Independently
- Teamwork

Evaluation

Assignments	35 % (approximately)
Quizzes and Tests	35 % (approximately)
Final Evaluation	30 %

FINAL MARK

Term Work:	70%
Summative Assignment:	10%
Final Exam:	20%

Resources

Textbook
Principles of Mathematics 10. McGraw-Hill Ryerson (2007)

Supplementary Teaching Materials
Worksheets organized by teacher and other online resources.

Course Outline

1. Quadratic Relations of the Form of $y=ax^2 + bx + c$

By the end of this course, students will:

1. determine the basic properties of quadratic relations;
2. relate transformations of the graph of $y = x^2$ to the algebraic representation $y = a(x – h)^2 + k$;
3. solve quadratic equations and interpret the solutions with respect to the corresponding relations;
4. solve problems involving quadratic relations.

2. Analytic Geometry

By the end of this course, students will:

1. model and solve problems involving the intersection of two straight lines;
2. solve problems using analytic geometry involving properties of lines and line segments;
3. verify geometric properties of triangles and quadrilaterals, using analytic geometry.

3. Trigonometry

By the end of this course, students will:

1. use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity;
2. solve problems involving right triangles, using the primary trigonometric ratios and the Pythagorean theorem;
3. solve problems involving acute triangles, using the sine law and the cosine law.