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2018 – 2019

Grade 10, Academic

### Principles of Mathematics

## MPM2D1

**Evaluation Profile & Outline**

## Earl Haig

SecondarySchool

**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.

**Class Requirements:** Materials/textbooks/equipment

Text: (supplied)

Principles of Mathematics 10

Nelson

Replacement textbook cost: $90.00

Calculator

Notebook

Materials for note-taking

**Course Requirements/Department Policies**

Late Assignments

Late assignments must be accompanied with a note signed by a parent or guardian stating the reason for late submission. The note must list the due date of the assignment and the actual date of submission.

**Marks will be deducted for late assignments, up to and including the full value of the assignment.** [Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools, Ministry of Ontario, 2010, pg. 43.]

Missed Tests

It is the student’s responsibility to make arrangements, ahead of time, for any tests/quizzes that are missed. If a student misses a test/quiz for an unforeseen reason such as illness, the student must notify the teacher by telephone at

395-3210 Ext. 20080, bring a note signed by a parent or guardian and be prepared to write the test/quiz immediately upon return to school.

#### Extra Help Availability

Monday to Thursday after school through Peer Tutoring program.

All extra help sessions are held in room 248.

Students should make appointments with their teachers to get extra help.

#### Assessment Strategies

Diagnostic Quizzes Homework Check

Diagnostic Tests Group Work

In-class Assignments Technology Based Tasks

Peer Assessments Observations

Class Participation/Interaction

Conferences/Interviews

**Learning Skills:**

Responsibility; Initiative; Organization;

Independent Work;

Collaboration;

Self-regulation

**Curriculum strands:**

Quadratic Relations of the

Form 

Analytic Geometry

Trigonometry

Achievement Categories and Weighting

Knowledge & Understanding 25%

Application 20%

Thinking 10%

Communication 15%

**FINAL MARK**

Year’s Work: 70%

Final Exam 30%

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1. **Linear Systems**

Solving systems graphically

Solving systems algebraically by substitution/elimination

Applications of linear systems

**2 Analytic Geometry**

Simplifying radicals – omit operations

Pythagorean theorem

Length and midpoint of a line segment

Equation of a circle with centre at (0,0)

Equation of a line

Distance from a point to a line

Properties of geometric figures

Applications and investigations with Geometers Sketchpad (optional)

**3 Polynomials and exponents**

Exponent laws

Common factors in polynomials

Factorization of Trinomials

Factoring quadratics:  and 

Factoring special quadratics

**4 Graphs of Quadratic Relations**

Graphs of quadratic relations and its properties

Factored form of quadratic relations

Expanding quadratic expressions

**5 Quadratic Functions**

Concept of a function, domain, range

Stretching, reflecting, and translations of quadratic relations

Graphing quadratics in vertex form

Solving problems using quadratic models

Writing the equations of quadratic functions

**6 Quadratic Equations**

Solving quadratic equations by factoring/graphing

Completing the square

Quadratic formula

Quadratic equations and roots

Solving problems using quadratic models

**7 Similar Triangles and Trigonometry**

##### Congruence and similar triangles

##### Solving similar triangle problems

##### Trigonometric ratios (Sine, Cosine, Tangent)

##### Solving right triangle problems

**8 Acute Triangle Trigonometry**

The sine Law and its applications

The cosine Law and its applications

Solving acute triangle problems

**Outline**