

# Sir Wilfrid Laurier Secondary School

## Grade 9 Academic Mathematics – MPM 1D

1.0 credit

### Course Outline

#### Course Description

*This course enables students to develop an understanding of mathematical concepts related to algebra, analytic geometry, and measurement and geometry through investigation, the effective use of technology, and abstract reasoning. Students will investigate relationships, which they will then generalize as equations of lines, and will determine the connections between different representations of a linear relation. They will also explore relationships that emerge from the measurement of three-dimensional figures and two-dimensional shapes. Students will reason mathematically and communicate their thinking as they solve multi-step problems.*

#### Strands and Overall Expectations

<b>Number Sense &amp; Algebra</b> By the end of this course students will: <ul style="list-style-type: none"><li>demonstrate an understanding of the exponent rules of multiplication &amp; division, and apply them to simplify expressions;</li><li>manipulate numerical and polynomial expressions, and solve first-degree equations</li></ul>	<b>Linear Relations</b> By the end of this course students will: <ul style="list-style-type: none"><li>apply data-management techniques to investigate relationships between two variables;</li><li>demonstrate an understanding of the characteristics of a linear relation;</li><li>connect various representations of a linear relation</li></ul>
<b>Analytic Geometry</b> By the end of this course students will: <ul style="list-style-type: none"><li>determine the relationship between the form of an equation and the shape of its graph with respect to linearity and non-linearity;</li><li>determine, through investigation, the properties of the slope and y-intercept of a linear relation;</li><li>solve problems involving linear relations</li></ul>	<b>Measurement &amp; Geometry</b> By the end of this course students will: <ul style="list-style-type: none"><li>determine, through investigation, the optimal values of various measurements;</li><li>solve problems involving the measurements of two-dimensional shapes and the surface areas and volumes of three-dimensional figures;</li><li>verify, through investigation, geometric properties and relationships involving two-dimensional shapes, and apply the results to solving problems</li></ul>

#### Evaluation

The final report card mark will be determined according to the **student's overall achievement of all of the course expectations** as set out in The Ontario Curriculum Mathematics documents. Students will be given **multiple and varied opportunities to demonstrate their achievement of the expectations within each strand** throughout the term as well as in the summative activity and final exam.

**The term mark will contribute 70% to the overall grade; summative evaluations will contribute 30%. A final mark will be determined by achievement in *all* areas with knowledge and skills described by:**

a <b>high degree</b> of effectiveness	<b>Level 4</b> (80-100)	Achievement surpasses the provincial standard.
<b>considerable</b> effectiveness	<b>Level 3</b> (70-79)	Achievement represents the <b>provincial standard</b> .
<b>some</b> effectiveness	<b>Level 2</b> (60-69)	Achievement is approaching provincial standard.
<b>limited</b> effectiveness	<b>Level 1</b> (50-59)	Achievement falls much below the provincial standard.
	<b>Below Level 1</b> (49 and below)	*Student does not achieve at least <i>limited effectiveness</i> in <u>all</u> overall expectations.

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## Guidelines for Missed Evaluations and Academic Fraud

1. Upon missing a test or presentation, students will be required at the teacher's discretion, either to:
  - a) Complete the test or presentation immediately upon return to school; or
  - b) Make arrangements with the teacher for a make-up; or
  - c) Write the missed test Friday morning at 7:30 a.m. of that week.

*Failure to complete the missed test/presentation according to the negotiated schedule will result in a mark of zero.*

**Note:** Certain forms of formal summative evaluations (exams, summative project presentations or tasks, etc.) are time sensitive. This means they must be completed at and within a specific time. Students must be present and prepared for these summative evaluations. Any absence will result in a mark of **zero**, unless validated by an official certificate. (ex. Medical Certificate).

2. If an assignment is late or incomplete, a student will be provided with a second opportunity. Students who are provided with a second opportunity **shall complete the required assignment within five school days**. If no evidence is forthcoming after five days, a mark of zero will be assigned.
3. Copied, borrowed or stolen work provides no evidence of learning. The teacher will document and archive the work in question. Students may be allowed to resubmit the assignment. The teacher and administrator will define the parameters for the completion of this task.

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## General Course Information

*Students must bring the following materials to each class:*

- textbook
- separate Math binder (to hold notes, tests, quizzes, handouts)
- pencil case (to hold pencils, erasers, ruler, coloured pens)
- scientific or graphing calculator, with **fraction capability**
- lined and graph papers

*The text for the course is **Principles of Mathematics 9**, Nelson (\$79.45+ HST). The student will be issued a text, and will be responsible for the cost of replacement, or repair, if the text is lost or damaged.*

*The full curriculum document can be viewed at: [www.edu.gov.on.ca/eng/curriculum/secondary/math910curr.pdf](http://www.edu.gov.on.ca/eng/curriculum/secondary/math910curr.pdf)*

## **Graphing Calculators**

Calculators with graphing technology are permitted for all evaluations, and are of great assistance for homework. Students without a handheld model can access online versions at home:

1. For both 2D and 3D graphing: [www.graphcalc.com](http://www.graphcalc.com)
2. **iPod Touch:**
  - Apps updated frequently