

Sir Wilfrid Laurier Secondary School

Grade 10 Academic Mathematics – MPM 2D

1.0 credit

Course Outline

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

Strands and Overall Expectations

Analytic Geometry

- Model and solve problems involving the intersection of two straight lines;
- Solve problems involving analytic geometry involving properties of lines and line segments;
- Verify geometric properties of triangles and quadrilaterals, using analytic geometry;

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

- Determine the basic properties of quadratic relations;
- Relate transformations of the graph of $y = x^2$ to the algebraic representation $y = a(x - h)^2 + k$;
- Solve quadratic equations and interpret the solutions with respect to the corresponding relations;
- Solve problems involving quadratic relations;

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 trigonometric ratios and the Pythagorean theorem;
- Solve problems involving acute triangles, using the sine law and cosine law;

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 (70% of final grade) as well as in the summative activity and final exam (total 30% of final grade).

*The student demonstrates, in **all** of the overall expectations, specified knowledge and skills with:*

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

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. 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.

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 calculator
- lined and graph papers

*The text for the course is **Principles of Mathematics 10**, 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.*
