

St. Clair Catholic District School Board

STUDENT INFORMATION SHEET / OUTLINE OF COURSE OF STUDY

School	St. Christopher Secondary School
Department	Mathematics
Course Title	Principles of Mathematics (MPM 1D1)
Grade	9
Course Type	Academic
Teacher(s)	
Department Head	Mrs. Kirchmair
Credit	one full
Ministry Document	Mathematics Grade 9 and 10 (revised)
Prerequisite	none

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

How This Course Supports the Ontario Catholic Graduate Expectations:

Through the use of the Catholic course profile as well as additional resources (I.C.E. documents) the Ontario Catholic Graduate expectations will be addressed.

How This Course Supports the Competencies of Choices Into Action:

Career Exploration Activities through classroom experience (page 19, Choices into Action).

1. Overall Expectations for Student Learning

Through this course, the student will be expected to demonstrate knowledge, skills and values related to the following strands.

Strand 1 Number Sense & Algebra

- Demonstrate an understanding of the exponent rules of multiplication and division, and apply them to simplify expressions
- Manipulate numerical and polynomial expressions, and solve first-degree equations

Strand 2 Linear Relations

- Apply data-management techniques to investigate relationships between two variables
- Demonstrate an understanding of the characteristics of a linear relation
- Connect various representations of a linear relation

Strand 3 Analytic Geometry

- Determine the relationship between the form of an equation and the shape of its graph with respect to linearity and non-linearity

- Determine, through investigation, the properties of the slope and y-intercept of a linear relation
- Solve problems involving linear relations

Strand 4 Measurement & Geometry

- Determine, through investigation, the optimal values of various measurements
- Solve problems involving the measurements of two-dimensional shapes and the surface areas and volumes of three-dimensional figures
- Verify, through investigation facilitated by dynamic geometry software, geometric properties and relationships involving two-dimensional shapes, and apply the results to solving problems

2. Expectations re: Learning Skills

It is expected that students will demonstrate the following learning skills (this is not intended to be an exhaustive list). Learning skills will be assessed according to criteria which have been clearly communicated to students and will be reported separately from student achievement of the curriculum expectations. The student's demonstrated learning skills in each course will be evaluated using the four-point scale

(E - Excellent, G - Good, S - satisfactory, N - Needs Improvement)

- Strong work habits during class time
- Completed homework and assignments
- Organizational skills on a daily basis
- Initiative in all areas of the course
- Independent learning ability
- Team work ability
- Frequent review of concepts and skills

3. Supports For Higher Learning :

Whenever accommodations are made to address student learning needs, or alternative or modified expectations are identified for a student, these accommodations, modifications, or alternative expectations will be outlined in an IEP and will be communicated to parents.

4. Course Breakdown & Assessment and Evaluation Strategies:

Unit	Unit Title / Description	Assessment & Evaluation Strategies
Unit 1	Rational Numbers	checklists, assignments, tests
Unit 2	Powers and Polynomials	checklists, assignments, tests
Unit 3	Linear Relations	checklists, assignments, tests
Unit 4	Linear Equations	checklists, assignments, tests
Unit 5	Analytic Geometry	checklists, assignments, tests

Unit 6	Investigating Relationships	checklists, assignments, tests
Unit 7	Properties of 2D Figures	checklists, assignments, tests
Unit 8	Measurement	checklists, assignments, tests

5. Key Dates, Special Events, and Additional Considerations:

- to be announced by the teacher
- EQAO testing during the last two weeks of the semester

6. Teaching / Learning Strategies:

Instruction in this course will include but not be limited to the following:

- use of technology tools: graphing calculators, computers
- presentation of homework solutions to class
- whole class activities
- pairs activities
- group work/ data collection
- EQAO resource booklet

7. Assessment and Evaluation:

Student achievement of the learning expectations will be evaluated according to the following breakdown.

Categories of the Achievement Chart	Weighting (%)	
	Term Evaluation	Final Evaluation Activity / Exam
Knowledge / Understanding	40	
Thinking	15	
Application	35	
Communication	10	
Final Mark	70%	30%

8. Learning Resources:

Textbook: Principles of Mathematics 9, Nelson Publishing

9. School, Department and Classroom policies:

- use of student handbook: for reference and for time management
- be prepared for class: paper, pencil, graph paper, calculator
- keep work complete and up to date
- correct all tests and assignments