



École Secondaire LAURIER MACDONALD High School  
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### COURSE STANDARDS AND PROCEDURES

**COURSE:**

*Mathematics 506 Secondary 5 Math SN*

**CLASS RESOURCES:** MHS Workbook, *Teacher notes, in-class handouts, Math Help Services, Google Classroom*

**COURSE DESCRIPTION:** Scientific math course that is a prerequisite for most commerce and science Cegep programs.

**MYP AIMS ADDRESSED BY THE COURSE:** What are the aims/objectives of the course? How do these relate to the MEES competencies?

MYP Course Aims	MEES Course Objectives
<ul style="list-style-type: none"><li>• Knowing and understanding</li><li>• Investigating patterns</li><li>• Communicating</li><li>• Applying mathematics in real-life contexts</li></ul>	<p><b>TERM 1</b> <b>Chapter 1 – Functions Arithmetic and Algebra</b></p> <ul style="list-style-type: none"><li>• Operations on functions and composition of functions</li><li>• The role of parameters</li><li>• Inverse function</li><li>• Piecewise functions</li><li>• Properties of radicals</li><li>• Square root functions</li><li>• Finding the rule and solving a square root function</li><li>• Properties of absolute values</li><li>• Absolute value functions<ul style="list-style-type: none"><li>• Finding the rule and solving an absolute value function</li></ul></li><li>• Rational functions</li><li>• Finding the rule and solving a rational function</li></ul>

MYP Course Aims	MEES Course Objectives
<ul style="list-style-type: none"> <li>● Knowing and understanding</li> <li>● Investigating patterns</li> <li>● Communicating</li> <li>● Applying mathematics in real-life contexts</li> </ul>	<p><b>TERM 2</b></p> <p><b>Chapter 2 – Systems of Equations and Inequalities</b>  Arithmetic and Algebra</p> <ul style="list-style-type: none"> <li>● Solving systems of equations</li> <li>● Inequalities in the 1st degree with two variables</li> <li>● System of inequalities</li> <li>● Polygon of constraints</li> <li>● Optimizing function</li> <li>● Optimal solutions</li> <li>● Linear programming and optimal solutions</li> <li>● Solving an optimization problem</li> </ul> <p><b>Chapter 3 – Exponential and Logarithmic Functions</b></p> <ul style="list-style-type: none"> <li>● Exponential notation</li> <li>● Laws of exponents</li> <li>● Exponential function</li> <li>● Finding the rule of an exponential function</li> <li>● Logarithm</li> <li>● Logarithmic function</li> <li>● Finding the rule of a logarithmic function</li> <li>● Logarithmic equivalences</li> <li>● Solving an exponential equation</li> <li>● Solving a logarithmic equation</li> <li>● Solving an exponential inequality</li> <li>● Solving a logarithmic inequality</li> </ul>
MYP Course Aims	MEES Course Objectives
<ul style="list-style-type: none"> <li>● Knowing and understanding</li> <li>● Investigating patterns</li> <li>● Communicating</li> <li>● Applying mathematics in real-life contexts</li> </ul>	<p><b>TERM 3</b></p> <p><b>Chapter 4 – Vectors</b></p> <ul style="list-style-type: none"> <li>● Scalar quantity and vector quantity</li> <li>● Operations on functions and composition of functions</li> <li>● Vector</li> <li>● Vector projection</li> <li>● Relations between vectors</li> <li>● Addition and subtraction of vectors</li> <li>● Multiplication of a vector by a scalar</li> <li>● Properties of operations on vectors</li> <li>● Linear combinations</li> <li>● Scalar product of two vectors</li> <li>● Properties of a scalar product</li> </ul>

	<p><b>Chapter 5 – Trigonometric functions</b></p> <ul style="list-style-type: none"> <li>• Radian</li> <li>• Unit circle</li> <li>• Periodic functions</li> <li>• Sinusoidal functions</li> <li>• Finding the rule of a sinusoidal function</li> <li>• Tangent functions</li> <li>• Finding the rule of a tangent function</li> <li>• Arcsine and arccosine functions</li> <li>• Arctangent functions</li> <li>• Solving a trigonometric equation</li> <li>• Solving a trigonometric inequality</li> <li>• Trigonometric identities</li> <li>• Formulas for the sum or difference of two angles</li> </ul> <p><b>Chapter 6 – Conics</b></p> <ul style="list-style-type: none"> <li>• Conic</li> <li>• Circle and finding its equation</li> <li>• Interior or exterior region of a circle</li> <li>• Ellipse and finding its equation</li> <li>• Interior or exterior region of an ellipse</li> <li>• Hyperbola and finding its equation</li> <li>• Interior or exterior region of a hyperbola</li> <li>• Parabola and finding its equation</li> <li>• Interior or exterior region of a parabola</li> <li>• Intersection points of a line and a conic or a parabola and another conic</li> </ul>
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**KEY INSTRUCTIONAL STRATEGIES/APPROACHES TO LEARNING:**

Which ATLs will be addressed in the course and how?

Critical thinking skills

- Analyzing and evaluating issues and ideas
- Practice observing carefully in order to recognize problems
- Gather and organize relevant information to formulate an argument
- Practice visible thinking strategies and techniques
- Utilizing skills and knowledge in multiple contexts
- Apply skills and knowledge in unfamiliar situations
- Transfer current knowledge to learning of new technologies

How will the content be delivered to the students?

- Warm up questions allow students to reflect on previous classes concepts and learning experiences.
- Demonstrate proper mathematical notation within explanation of concepts.
- Formative assessments (pop quizzes, quizzes, homework assignments)
- Group discussions when faced with unfamiliar situations; students discuss appropriate strategies and situations.
- Students combine and apply their mathematical knowledge when solving summative Situational Problems.

**IB MYP LEARNER PROFILE:** Identify which profile attributes will be addressed in the course and how.

Communicators, Inquirers/Thinkers, Caring

**FORMATIVE & SUMMATIVE ASSESSMENT INCLUDING MYP ASSESSMENT:**

<b>Term 1 (20% of School Course Grade)</b>		
<i>Competencies targeted</i>	<i>Evaluation methods</i>	<i>Timeline</i>
Competency 1: Solves a situational problem (30% of term grade)  Competency 2: Uses mathematical reasoning (70% of term grade)	May include but not limited to: - Tests - Quizzes - Assignments/HW and Pop-Quizzes - Situational Problem	Term 1 ends Nov. 3
<i>Communication to students and parents</i>	<i>Materials required</i>	
<ul style="list-style-type: none"> <li>• Mozaik Parent Portal</li> <li>• Progress Report</li> <li>• First Term Report Card</li> <li>• (communication on an as needed basis)</li> </ul>	<ul style="list-style-type: none"> <li>• Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations</li> <li>• Ruler, pencils, and eraser</li> <li>• Scientific calculator</li> <li>• Internet Access (Outside of the classroom: Home/Library)</li> </ul>	
<i>IB MYP Criterion</i>	<i>Examples of assessment/feedback both formative and/or summative</i>	
A: Knowing and understanding B: Investigating patterns C: Communicating D: Applying mathematics in real-life contexts	<ul style="list-style-type: none"> <li>- Tests</li> <li>- Quizzes</li> <li>- Assignments</li> <li>- Situational Problem</li> </ul>	

<b>Term 2 (20 % of School Course Grade)</b>		
<i>Competencies targeted</i>	<i>Evaluation methods</i>	<i>Timeline</i>
<p>Competency 1: Solves a situational problem (30% of term grade)</p> <p>Competency 2: Uses mathematical reasoning (70% of term grade)</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>- Tests</li> <li>- Quizzes</li> <li>- Assignments</li> <li>- Situational Problem</li> <li>-MIDTERM EXAM</li> </ul>	<p>Term 2 ends Jan 26</p>
<i>Communication to students and parents</i>	<i>Materials required</i>	
<ul style="list-style-type: none"> <li>•Mozaik Parent Portal</li> <li>•Progress Report (April)</li> <li>•Second Term Report Card</li> <li>• (communication on an as needed basis)</li> </ul>	<ul style="list-style-type: none"> <li>• Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations</li> <li>• Ruler, pencils, and eraser</li> <li>• Scientific calculator</li> <li>• Internet Access (Outside of the classroom: Home/Library)</li> </ul>	
<i>IB MYP Criterion</i>	<i>Examples of assessment/feedback both formative and/or summative</i>	
<p>A: Knowing and understanding</p> <p>B: Investigating patterns</p> <p>C: Communicating</p> <p>D: Applying mathematics in real-life contexts</p>	<ul style="list-style-type: none"> <li>- Tests</li> <li>- Quizzes</li> <li>- Assignments</li> <li>- Situational Problem</li> </ul>	

Term 3 (60 % of School Course Grade)		
<i>Competencies targeted</i>	<i>Evaluation methods</i>	<i>Timeline</i>
Competency 1: Solves a situational problem (30% of term grade)  Competency 2: Uses mathematical reasoning (70% of term grade)	May include but not limited to: - Tests - Quizzes - Assignments - Situational Problem -FINAL EXAM	Term 3 ends June 23
<i>Communication to students and parents</i>	<i>Materials required</i>	
<ul style="list-style-type: none"> <li>•Mozaik Parent Portal</li> <li>•Progress Report (April)</li> <li>•Second Term Report Card</li> <li>• (communication on an as needed basis)</li> </ul>	<ul style="list-style-type: none"> <li>• Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations</li> <li>• Ruler, pencils, and eraser</li> <li>• Scientific calculator</li> <li>• Internet Access (Outside of the classroom: Home/Library)</li> </ul>	
<i>IB MYP Criterion</i>	<i>Examples of assessment/feedback both formative and/or summative</i>	
A: Knowing and understanding B: Investigating patterns C: Communicating D: Applying mathematics in real-life contexts	- Tests - Quizzes - Assignments - Situational Problem	

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- This course does not have a final exam. The final course grade comes entirely from the school course grade.
- This course has a final exam administered by the English Montreal School Board. The final course grade is determined by taking 70% of the school course grade and 20% of the school board exam.
- This course has a final exam administered by the *Ministère de l'Éducation et de l'Enseignement Supérieur* (MEES). The final course grade is determined by taking 50% of the school course grade and 50% of the MEES exam. Please note that the final course grade is subject to MEEs moderation.