



**École Secondaire LAURIER MACDONALD High School**

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**COURSE STANDARDS AND PROCEDURES**

**COURSE**:

*Mathematics 506 Secondary 5 Math SN*

**CLASS RESOURCES:** Math 3000 Workbook, *Teacher notes, in-class handouts, Math Help Services, Google Classroom*

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**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** |
| --- | --- |
| * Knowing and understanding * Investigating patterns * Communicating * Applying mathematics in real-life contexts | **TERM 1**  **Chapter 1 – Functions Arithmetic and Algebra**  • Operations on functions and composition of functions  • The role of parameters  • Inverse function  • Piecewise functions  • Properties of radicals  • Square root functions  • Finding the rule and solving a square root function  • Properties of absolute values  • Absolute value functions  • Finding the rule and solving an absolute value function  • Rational functions  • Finding the rule and solving a rational function |
| **MYP Course Aims** | **MEES Course Objectives** |
| * Knowing and understanding * Investigating patterns * Communicating * Applying mathematics in real-life contexts | **TERM 2**  **Chapter 2 – Systems of Equations and Inequalities**  Arithmetic and Algebra  • Solving systems of equations  • Inequalities in the 1st degree with two variables  • System of inequalities  • Polygon of constraints  • Optimizing function  • Optimal solutions  • Linear programming and optimal solutions • Solving an optimization problem  **Chapter 3 – Exponential and Logarithmic Functions**  • Exponential notation  • Laws of exponents  • Exponential function  • Finding the rule of an exponential function  • Logarithm  • Logarithmic function  • Finding the rule of a logarithmic function  • Logarithmic equivalences  • Solving an exponential equation  • Solving a logarithmic equation  • Solving an exponential inequality  • Solving a logarithmic inequality |
| **MYP Course Aims** | **MEES Course Objectives** |
| * Knowing and understanding * Investigating patterns * Communicating * Applying mathematics in real-life contexts | **TERM 3**  **Chapter 4 – Vectors**  • Scalar quantity and vector quantity  • Operations on functions  and composition of functions  • Vector  • Vector projection  • Relations between vectors  • Addition and subtraction of vectors  • Multiplication of a vector by a scalar  • Properties of operations on vectors  • Linear combinations  • Scalar product of two vectors  • Properties of a scalar product  **Chapter 5 – Trigonometric functions**  • Radian  • Unit circle  • Periodic functions  • Sinusoidal functions  • Finding the rule of a sinusoidal function  • Tangent functions  • Finding the rule of a tangent function  • Arcsine and arccosine functions  • Arctangent functions  • Solving a trigonometric equation  • Solving a trigonometric inequality  • Trigonometric identities  • Formulas for the sum or difference of two angles  **Chapter 6 – Conics**  • Conic  • Circle and finding its equation  • Interior or exterior region of a circle  • Ellipse and finding its equation  • Interior or exterior region of an ellipse  • Hyperbola and finding its equation  • Interior or exterior region of a hyperbola  • Parabola and finding its equation  • Interior or exterior region of a parabola  • Intersection points of a line and a conic or a parabola and another conic |

**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 allows 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:**

| **Term 1 (20% of School Course Grade)** | | |
| --- | --- | --- |
| *Competencies targeted* | *Evaluation methods* | *Timeline* |
| 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/Pop-Quizzes - Situational Problem | Term 1 ends Nov. 3 |
| *Communication to students and parents* | *Materials required* | |
| • Mozaik Parent Portal  • Progress Report  • First Term Report Card • (communication on an as needed basis) | • Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations • Ruler, pencils, and eraser • Scientific calculator • Internet Access (Outside of the classroom: Home/Library) | |
| *IB MYP Criterion* | *Examples of assessment/feedback both formative and/or summative* | |
| A: Knowing and understanding B: Investigating patterns C: Communicating D: Applying mathematics in real-life contexts | - Tests  - Quizzes - Assignments - Situational Problem | |

| **Term 2 (20 % of School Course Grade)** | | |
| --- | --- | --- |
| *Competencies targeted* | *Evaluation methods* | *Timeline* |
| 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  -MIDTERM EXAM | Term 2 ends Feb 3 |
| *Communication to students and parents* | *Materials required* | |
| •Mozaik Parent Portal •Progress Report (April) •Second Term Report Card • (communication on an as needed basis) | • Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations • Ruler, pencils, and eraser • Scientific calculator • Internet Access (Outside of the classroom: Home/Library) | |
| *IB MYP Criterion* | *Examples of assessment/feedback both formative and/or summative* | |
| A: Knowing and understanding B: Investigating patterns C: Communicating D: Applying mathematics in real-life contexts | - Tests  - Quizzes - Assignments - Situational Problem | |

| **Term 3 (60 % of School Course Grade)** | | |
| --- | --- | --- |
| *Competencies targeted* | *Evaluation methods* | *Timeline* |
| 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 |
| *Communication to students and parents* | *Materials required* | |
| •Mozaik Parent Portal •Progress Report (April) •Second Term Report Card • (communication on an as needed basis) | • Notebook or lined paper, graph paper, binder for handouts and duo-tang for evaluations • Ruler, pencils, and eraser • Scientific calculator • Internet Access (Outside of the classroom: Home/Library) | |
| *IB MYP Criterion* | *Examples of assessment/feedback both formative and/or summative* | |
| A: Knowing and understanding B: Investigating patterns C: Communicating D: Applying mathematics in real-life contexts | - Tests  - Quizzes - Assignments - Situational Problem | |

| **Additional Information/Specifications** |
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| Click here to enter text.  **☐** 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. |