


Course of Study

1. Course Details

<p>Lawrence Park C.I</p>  <p>TDSB</p>	<p>Teacher(s) : Limin Zheng</p> <p>Faculty : Mathematics</p> <p>Faculty Office Phone : 416-393-9500 Ext 20080</p> <p>Name of ACL : Chi Ho</p> <p>ACL Contact : ChiKin.ho@tdsb.on.ca</p> <p>Textbooks : none</p>	<p>Date revised : September 2019</p> <p>Course Name : Functions and Applications</p> <p>Course Code : MCF 3M1</p> <p>Prerequisite Course Code : MPM 2D1 or MFM 2P1</p> <p>Credit Value : 1</p> <p>Essential Resource Materials : Sharp EL-510 RN scientific calculator</p>
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2. Overall Goals

Overall Expectations:

Quadratic Functions

By the end of this course, students will:

- expand and simplify quadratic expressions, solve quadratic equations, and relate the roots of a quadratic equation to the corresponding graph;
- demonstrate an understanding of functions, and make connections between the numeric, graphical, and algebraic representations of quadratic functions;
- solve problems involving quadratic functions, including problems arising from real-world applications.

Exponential Functions

By the end of this course, students will:

- simplify and evaluate numerical expressions involving exponents, and make connections between the numeric, graphical, and algebraic representations of exponential functions;
- identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications;
- demonstrate an understanding of compound interest and annuities, and solve related problems.

Trigonometric Functions

By the end of this course, students will:

- solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications;
- demonstrate an understanding of periodic relationships and the sine function, and make connections between the numeric, graphical, and algebraic representations of sine functions;
- identify and represent sine functions, and solve problems involving sine functions, including problems arising from real-world applications.

3. Learning Skills and Work Habits

**Evaluated on Report Card as:
E (excellent); G (good); S (satisfactory); N (needs improvement)**

The Learning Skills demonstrated by a student in every course are evaluated in the following six categories: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-regulation. The Learning Skills are evaluated using a four-point scale. The goal for each student is to improve Learning Skills which will translate into improved student's overall success.

In addition, completion of the assigned homework/assignments on time will contribute to student's success. We also know that regular attendance in all classes is essential for success; please avoid scheduling appointments during school time.

Students are expected to demonstrate academic honesty on all assignments, presentations, tests, and examinations. Student who cheat or plagiarize will receive a mark of zero for the assignment, presentation, test, or examination.

Responsibility	<p>The student:</p> <ul style="list-style-type: none"> • fulfils responsibilities and commitments within the learning environment; • completes and submits class work, homework, and assignments according to agreed-upon timelines; • takes responsibility for and manages own behaviour.
Organization	<p>The student:</p> <ul style="list-style-type: none"> • devises and follows a plan and process for completing work and tasks; • establishes priorities and manages time to complete tasks and achieve goals; • identifies, gathers, evaluates, and uses information, technology, and resources to complete tasks.
Independent Work	<p>The student:</p> <ul style="list-style-type: none"> • independently monitors, assesses, and revises plans to complete tasks and meet goals; • uses class time appropriately to complete tasks; • follows instructions with minimal supervision.
Collaboration	<p>The student:</p> <ul style="list-style-type: none"> • accepts various roles and an equitable share of work in a group; • responds positively to the ideas, opinions, values, and traditions of others; • builds healthy peer-to-peer relationships through personal and media-assisted interactions; • works with others to resolve conflicts and build consensus to achieve group goals; • shares information, resources, expertise and promotes critical thinking to solve problems and make decisions.
Initiative	<p>The student:</p> <ul style="list-style-type: none"> • looks for and acts on new ideas and opportunities for learning; • demonstrates the capacity for innovation and a willingness to take risks; • demonstrates curiosity and interest in learning; • approaches new tasks with a positive attitude; • recognizes and advocates appropriately for the rights of self and others.
Self-regulation	<p>The student:</p> <ul style="list-style-type: none"> • sets own individual goals and monitors progress towards achieving them • seeks clarification or assistance when needed • assesses and reflects critically on own strengths, needs, and interests; • identifies learning opportunities, choices, and strategies to meet personal goals.

4. Teaching/Assessment and Evaluation Strategies - Course Work (70%)

Students will demonstrate achievement of all the overall expectations of the course. Missed and/or incomplete assignments will have an impact on the final grade where there are a significant number of curriculum expectations that have not been evaluated because of missed assignments. Timelines and units may be adjusted to accommodate student needs.

Unit #	Culminating Tasks	Achievement Chart Focus (All culminating tasks include knowledge/understanding, thinking & inquiry, communication, and application categories.)	Time Line No. of Periods
1.	Test	Review of Polynomials (expanding and factoring)	8
2.	Test	Review of Functions	6
3.	Test	Quadratic Functions	11
4.	Test	Quadratic Equations	19
5.	Test	Trigonometric Modelling	8
6.	Test	Periodic Behaviour / Trigonometric Functions	8
7.	Test	Exponents and Exponential Functions	14
8.	Test	Financial Mathematics	8

4. Teaching/Assessment and Evaluation Strategies - Final Evaluation (30%)

All Students must take part in the culminating activities for each course at every grade level of study

Summative Tasks	Achievement Chart Focus	Weighting
Final Exam	All eight units listed above.	30%

5. Achievement Chart

Achievement Categories For Course Work	Description	Weighting
Knowledge/Understanding	<ul style="list-style-type: none"> - knowledge of facts and terms - understanding concepts, principles, and theories - understanding of relationships between concepts 	35 %
Thinking	<ul style="list-style-type: none"> - critical thinking skills (analyzing, detecting bias) - creative thinking (problem solving) - inquiry skills (formulating questions; conducting research; analyzing, interpreting and evaluating information; drawing conclusions) 	15 %
Communication	<ul style="list-style-type: none"> - communication of information and ideas - use of visuals and technology - multimedia - oral communication (debates, discussions, listening skills, role-playing) - written communication (short essays, writing in role) 	15 %
Application	<ul style="list-style-type: none"> - application of concepts, skills, and procedures - transfer of concepts, skills, and procedures to new ideas - making logical conclusions or generalizations - making predictions and planning courses of action - making connections 	35 %

6. Term Grades for Provincial Reports

Term Grades for Provincial Reports throughout the Year

The grade for each term/reporting period is based on the evaluations that have been conducted to that point in the course and will be preliminary and tentative. They will be based on the most consistent level of achievement to that point in time, but some of the overall expectations, strands, and units will not have been addressed. The students' grades will most likely change when the students' entire work is evaluated by the end of the course.

Reporting cycle 1: September 3rd—November 5th (Report Card: November 14th)

Reporting cycle 2: November 6th—January 24th (Report Card: February 7th)

Reporting cycle 3: January 25th—March 31st (Report Card: April 9th)

Reporting cycle 4: April 1st—June 22nd (Final Report Card pick up: June 25th)

Exam Review Day: June 22nd (9-11 am only)

7. Communication

In addition to class time, students can receive additional assistance from:

- Subject teachers before/after school, during lunch hour or by appointment;