MISSISSAUGA SECONDARY SCHOOL

MATHEMATICS DEPARTMENT – Mathematics for College Technology – Grade 12

Course Code: MCT4C0 **Pre-requisite:** MCF3M0/MCR3U0
Workbook: Mathematics for College Technology 12 ($12.00 replacement)

Course Description:

This course enables students to extend their knowledge of functions. Students will investigate and apply properties of polynomial, exponential, and trigonometric functions; continue to represent functions numerically, graphically, and algebraically; develop facility in simplifying expressions and solving equations; and solve problems that address applications of algebra, trigonometry, vectors, and geometry. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for a variety of college technology programs.

Ministry Course Overall Expectations:

Exponential Functions

• solve problems involving exponential equations graphically, including problems arising from real-world applications;
• solve problems involving exponential equations algebraically using common bases and logarithms.

Polynomial Functions

• recognize and evaluate polynomial functions, describe key features of their graphs, and solve problems using graphs;
• make connections between the numeric, graphical, and algebraic representations of polynomial functions;
• solve polynomial equations by factoring and related problems.

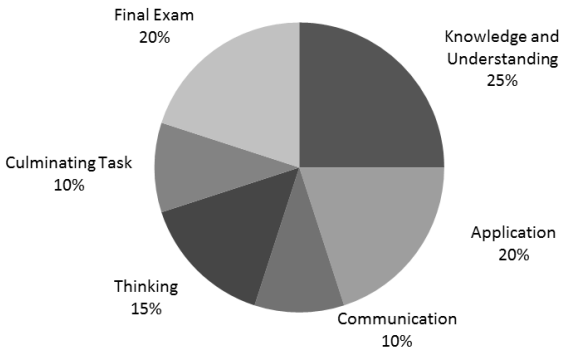
Trigonometric Functions

• determine the values of the trigonometric ratios for angles less than 360˚, and solve problems using the primary trigonometric ratios, the sine law, and the cosine law;
• make connections between the numeric, graphical and algebraic sinusoidal function representations;
• demonstrate an understanding of the modelling applications of sinusoidal functions.

Applications of Geometry

• represent vectors, add and subtract vectors, and solve problems using vector models;
• solve problems involving two and three dimensional figures;
• determine circle properties and solve related problems.

Course Weighting



Course Breakdown:

Unit 1: Exponential Functions

Unit 2: Polynomial Functions

Unit 3: Trigonometric Functions

Unit 4: Applications of Geometry

Assessment and Evaluation - Key Terms and Definitions:

Assessment for Learning: The ongoing process of gathering and interpreting evidence about student learning for the purpose of determining where students are in their learning, where they need to go and how best to get there (e.g. diagnostic pieces, observations, conversations, assignments, concept maps, interviews and progress monitoring). The information gathered is used by teachers to provide feedback and adjust instruction to help students focus their learning. Assessment for learning is a high-yield instructional strategy that takes place while the student is still learning and serves to promote learning.

Assessment as Learning: The process of developing and supporting student understanding of their own learning. Students are actively engaged in this assessment process: that is, they monitor their own learning (e.g. metacognitive questions, journals and self-assessment, problem solving templates, interviews, conferences); use assessment feedback from teacher, self, and peers to determine next steps; and set individual learning goals. Assessment as learning requires students to have a clear understanding of the learning goals and overall expectations as specified in the curriculum document.

Assessment of Learning: The process of collecting and interpreting evidence for the purpose of summarizing learning at a given point in time, to make judgements about the quality of student learning on the basis of established criteria, and to assign a value to represent that quality (e.g. quizzes, tests, presentations, projects, problem solving tasks). The information gathered may be used to communicate the student's achievement to parents, other teachers, students themselves and others. It occurs at or near the end of a cycle of learning. These measures will contribute to pivotal decisions that will affect a student's future pathways.

For more information, please refer to the Ontario Ministry of Education Grade 11 Curriculum Outline at:
http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112currb.pdf

MISSISSAUGA SECONDARY SCHOOL – Mathematics for College Technology, Grade 12

Achievement Chart Category	**Evidence of Learning**		
	Observations	**Conversations**	**Products**
Knowledge Knowledge of content (e.g., facts, terms, use of tools) Understanding of mathematical concepts	Participation Problem solving group work Informal Presentations Interpretation Skills Written expressions Listening and speaking skills Self-assessment Appropriate use of manipulatives	Peer conferencing Student-teacher conferencing Group work Classroom contributions Response Journals Presenting solutions Responding to questions Asking relevant questions	Quizzes Unit Tests Assignments Projects Summative Tasks Final Exam
Thinking **Use of planning skills** - understanding the problem - making a plan for solving the problem **Use of processing skills** -carrying out a plan - looking back at the solution **Use of critical/creative thinking processes** -reason mathematically to solve multi step problems			
Communication -Expression and organization of mathematical ideas and thinking, using pictorial, graphic, dynamic, numeric, algebraic forms and concrete models -Communication for different audiences and purposes in oral, visual, and written forms -Proper use of conventions, terminology and symbols			
Application -Application of knowledge and skills in familiar contexts -Transfer of knowledge and skills to new contexts -Making connections within and between various contexts (e.g., between concepts, representations, and forms within mathematics; involving use of prior knowledge and experience; connections between mathematics, other disciplines, and the real world)			

STUDENT ASSESSMENT, EVALUATION, AND REPORTING IN PEEL SECONDARY SCHOOLS

Success Criteria for completing this course:

Learning Skills: Each student is assessed not only on their academic achievement but also on their Learning Skills. These skills include: ***Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self Regulation***. Learning skills will not be factored into the grade for this course but will appear on the report card. It is important to remember that the development and consistent practice of these skills will influence academic achievement.

Attendance & Punctuality: Regular attendance to scheduled classes, and active participation in learning activities, will provide students with the experiences necessary to successfully complete this credit. Attending classes on time will ensure that there are no gaps in the student's learning, demonstrate commitment to learning, and respect for self & others. Please refer to the student agenda for more information regarding the Attendance and Punctuality Policy.

Homework Completion: Consistent homework completion is essential for student success. Although students will be given some class time to initiate their homework, they should expect an average of 30 minutes of homework each night. Students should use unit outlines to plan effectively, manage time efficiently, and work ahead, if possible. Homework will be monitored according to your teacher's instruction. Students should seek support as soon as possible when having difficulty with daily homework.

Missed Evaluation: Students will be given ample notice regarding the date for an evaluation. Students who are aware that they will be absent must discuss the situation with their teacher prior to the absence. An unexpected absence for a legitimate reason may need to be supported on the Math Department, **"REASON FOR ABSENCE"** form, which is available online at the course web site, as well as the MSS website (http://schools.peelschools.org/sec/mississauga/Pages/default.aspx). Upon approval, the student may be given an opportunity to write an alternate evaluation at the teacher's convenience, in the specified classroom.

Late and Missed Assignments: Please see the Policy on Absence of Evidence of Student Achievement outlined in the student agenda

Plagiarism and Cheating: Please see the Policy on Plagiarism and Cheating outlined in the student agenda

Homework, Assignments and Effective Communication: To earn a credit students have a responsibility to submit sufficient evidence of understanding within established deadlines. It is in the student's best interest to submit evidence of learning at every opportunity that is provided, so that his/her grade accurately reflects what was learned. In the event that a student produces insufficient evidence in the key understandings for the course, the entire credit is at stake.

Student Signature: _____ Parent Signature: _____

Revised: August 2014