INSTITUTE OF CANADIAN EDUCATION

Course Title: Foundations for College Mathematics, Grade 11, College Preparation
Course Name: Foundations for College Mathematics
Course Code: MBF3C
Grade: 11
Course Type: College Preparation
Credit Value: 1.0
Prerequisite: Foundations of Mathematics, Grade 10, Applied MFM2P
Curriculum Policy Document: *The Ontario Curriculum, Mathematics, Grades 11 and 12 (2007)*
Course Developer: Institute of Canadian Education
Department: Mathematics

Department Head: Meena Yohan

Development Date: 2025
Most Recent Revision Date: August 2026

Course Description

This course enables students to broaden their understanding of mathematics as a problem solving tool in the real world. Students will extend their understanding of quadratic relations; investigate situations involving exponential growth; solve problems involving compound interest; solve financial problems connected with vehicle ownership; develop their ability to reason by collecting, analysing, and evaluating data involving one variable; connect probability and statistics; and solve problems in geometry and trigonometry. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

Unit Overview

Unit	Ministry Strand	Unit Title	Description	Hours
1	**A. Mathematical Models**	Linear, Quadratic & Exponential Models	Students analyze and model real-world situations using linear, quadratic, and exponential relations. They interpret graphs, create equations, and solve problems using technology.	28
2	**B. Personal Finance**	Personal Finance Applications	Students solve financial problems involving simple and compound interest, loans, investments, cost of credit, and vehicle ownership.	28
3	**C. Geometry & Trigonometry**	Geometry & Trigonometric Applications	Students apply measurement, spatial reasoning, and trigonometric ratios to solve practical problems in construction, design, and navigation contexts.	28
4	**D. Data Management**	Statistics & Probability	Students collect, organize, analyze, and interpret one-variable data and apply probability to real-world decision making.	23
Final	All	Culminating Performance Task	Integrated financial/data investigation and presentation	3
			Total	**110 Hours**

Overall Curriculum

A. Mathematical Models

- Make connections between the numeric, graphical, and algebraic representations of quadratic relations, and use the connections to solve problems;
- Demonstrate an understanding of exponents, and make connections between the numeric, graphical, and algebraic representations of exponential relations
- Describe and represent exponential relations, and solve problems involving exponential relations arising from real-world applications.

B. PERSONAL FINANCE

- compare simple and compound interest, relate compound interest to exponential growth, and solve problems involving compound interest;
- compare services available from financial institutions, and solve problems involving the cost of making purchases on credit;
- interpret information about owning and operating a vehicle, and solve problems involving the associated costs.

C. GEOMETRY AND TRIGONOMETRY

- represent, in a variety of ways, two-dimensional shapes and three-dimensional figures arising from real-world applications, and solve design problems;
- solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications.

D. DATA MANAGEMENT

- solve problems involving one-variable data by collecting, organizing, analysing, and evaluating data;
- determine and represent probability, and identify and interpret its applications.

TEACHING AND LEARNING STRATEGIES

In this course, students will experience a variety of teaching and learning activities, including:

- **Presentations and Multimedia:** Instructional presentations, videos, examples, practice questions, online quizzes, and interactive resources are used to introduce and reinforce mathematical concepts and skills.
- **End-of-Unit Conversations :**Students explain their mathematical thinking, problem-solving strategies, and understanding to the teacher and receive timely feedback.
- **Teacher-Student Discussions:** Video conferencing provides opportunities for students to ask questions, discuss concepts, explain their reasoning, and receive individual support.
- **Instructor Demonstrations:** Teachers model mathematical procedures, problem-solving strategies, technology use, and other skills through live demonstrations, videos, or other digital communication.
- **Discussion Forums:** Students share mathematical ideas, solutions, and perspectives with peers and provide constructive feedback.
- **Reflection:** Students reflect on their learning, identify strengths and areas for improvement, and connect mathematical concepts to practical applications.
- **Practical Applications:** Mathematical concepts are applied to real-world situations to help students recognize the relevance of mathematics in everyday life, education, and future careers.
- **Individual Activities and Assignments:** Students complete activities independently and at an appropriate pace to practise and consolidate learning. Teachers provide ongoing written and oral feedback and implement appropriate IEP accommodations.

- **Research and Inquiry:** Students investigate mathematical questions, gather and analyze information, evaluate findings, and communicate conclusions while developing critical- and creative-thinking skills.
- **Writing and Mathematical Communication:** Written explanations, reflections, and solution processes help students organize their thinking, communicate mathematic

Assessment Strategies

Students will be provided with numerous and varied opportunities to demonstrate the full extent of their achievement of the curriculum expectations, across all four categories of the Achievement Chart. Progress will be monitored on an on-going basis using a variety of assessment tools, including written work, formal testing, quizzes, teacher-student communication, discussion boards and chat rooms.

ASSESSMENT ACTIVITIES

Assessment activities may include:

- Homework and practice assignments
- Individual teacher-student conferences
- Discussion forums and mathematical discussions
- Diagnostic tests and problem-solving tasks
- Editing and self-assessment checklists
- Reflections and learning journals
- Oral presentations and active listening
- Quizzes, tests, and examinations
- Unit and course evaluations
- Labs, interactive diagrams, and digital mathematical activities
- Graphing, modelling, and data-analysis activities

Final Grade
The final grade will be determined as follows (in accordance with Ministry of Education standards):

Term Work Based on evaluations conducted throughout the course.	65%
Final Evaluation A final evaluation in the form of a written exam.	25%
Attendance and Participation	10%

Final Examination Breakdown

- 25% written exam

ATTENDANCE POLICY

Regular attendance and active engagement are important for student success. Attendance and participation are monitored through the school's Learning Management System (LMS).
All online credit courses at ICE are designed to meet or exceed the **minimum 110 hours of instructional time** required for a credit course.

Online instructional time and engagement are monitored through:

- **LMS Engagement:** Students are expected to log in regularly and actively participate in online learning activities. LMS activity records are used to monitor engagement.
- **Biweekly Check-Ins:** Students complete a brief check-in every two weeks to review their progress and engagement. Additional support may be provided when concerns are identified.
- **Post-Unit Quizzes:** Short formative quizzes are completed at the end of each unit to monitor student progress and pacing.
- **Discussion Forums:** Students participate in required unit discussions and peer activities. Participation is monitored based on completion and engagement.

Students are responsible for maintaining regular participation and completing required learning activities within the course schedule.

EVALUATION MODEL – 10% TOTAL ATTENDANCE AND ENGAGEMENT WEIGHT

Component	Weight	Quantifiable Metric	Criteria
Biweekly Check-In	3%	Completed every two weeks	Students completes the required check-in within the scheduled time frame.
Post-Unit Formative Quiz	4%	Completed after each unit	Student completes the formative quiz by the assigned deadline.
Discussion Forum Participation	3%	Required posts and responses	Student submits the required original response and completes assigned peer responses.

CONSIDERATIONS FOR PROGRAM PLANNING

PLANNING PROGRAMS FOR STUDENTS WITH SPECIAL EDUCATION NEEDS

All students can succeed. Teachers use Universal Design for Learning, differentiated instruction, and evidence-based strategies to meet diverse learning needs. Where applicable, teachers work with students, families, and appropriate school staff to implement accommodations identified in an IEP.

PROGRAM CONSIDERATIONS FOR ENGLISH LANGUAGE LEARNERS

Teachers recognize the diverse linguistic and cultural backgrounds of English language learners and provide appropriate support without compromising curriculum expectations. Strategies may include clear instructions, visual representations, mathematical vocabulary support, opportunities to review lessons, additional time where appropriate, and multiple ways for students to demonstrate their learning.

THE ROLE OF TECHNOLOGY IN THE PROGRAM

Information and communications technology (ICT) is integrated throughout the course to support teaching, learning, communication, and assessment. Students may use graphing technology, mathematical software, multimedia resources, online tools, digital presentations, and other technologies to explore concepts, analyze data, solve problems, and communicate mathematical thinking.

ACCOMMODATIONS

Accommodations are provided based on student needs and, where applicable, the student's IEP and relevant educational assessment information. Accommodations may include:

- **Instructional accommodations:** changes to presentation, organization, pacing, teaching strategies, and use of technology.
- **Assessment accommodations:** additional time, breaks, alternative response formats, oral responses, or other appropriate supports.

Additional strategies may include:

- Providing clear, step-by-step instructions
- Breaking complex tasks into manageable steps

- Providing graphic organizers and planning templates
- Providing mathematical vocabulary and visual supports
- Allowing appropriate assistive technology
- Providing reading materials or instructions in advance when needed
- Offering varied opportunities to demonstrate learning
- Providing opportunities for enrichment and extension
- Providing regular teacher feedback and individual support

Required Software, Equipment, and Resources

Required Resources

- Scientific or graphing calculator
- Computers with internet access

Digital Tools and Software

- Spreadsheet software (Excel, Google Sheets)
- Graphing software (Desmos, GeoGebra)
- Word processing and presentation tools
- Online research tools and calculators

Teacher Considerations

- Use of assistive technology where appropriate
- Flexible formats for demonstrating learning
- Accommodations and modifications aligned with IEPs
- Emphasis on academic integrity and responsible technology use

Tips for Success – MBF3C
Welcome to MBF3C: Foundations for College Mathematics, Grade 11

Get ready to develop practical mathematical skills through financial mathematics, measurement, data management, geometry, algebra, and problem solving. Throughout the course, you will apply mathematics to real-life situations such as budgeting, personal finance, earning and spending, measurement, and interpreting data. You will also strengthen your problem-solving, communication, critical-thinking, and digital skills in an online learning environment.

By the end of this course, you will have developed mathematical skills that can support your postsecondary studies, workplace goals, and everyday decision-making.

Reminders to Help You Succeed in MBF3C

- **Check Announcements, "What's New," and your mailbox daily** for updates, feedback, and important information.
- **Review the course calendar regularly** and keep track of assignment, quiz, and test deadlines. Contact your teacher as soon as possible if you need assistance.
- **Read instructions and evaluation criteria carefully** before submitting assignments. Check your calculations, show your work, and review your answers.

- **Complete practice problems regularly.** Mathematics skills improve through consistent practice and application.
- **Participate actively in discussions, problem-solving activities, demonstrations, and interactive tasks** to strengthen your understanding of mathematical concepts.
- **Use mathematical tools appropriately**, including calculators, graphing tools, spreadsheets, and other digital resources provided in the course.

Ask for Help When Needed

- For **technical issues**, contact the Help Desk.
- For **course-related questions or concerns**, email your teacher. Expect a response within 24 hours. If the matter is urgent, include **"URGENT"** in the subject line.

Key Elements to Success in MBF3C

- **Time Commitment** – Plan for **1–2 hours of focused study each day**, with additional time for assignments, practice, and tests.
- **Practice** – Complete practice questions regularly and show all necessary steps in your solutions.
- **Organization** – Keep your notes, formulas, assignments, and feedback organized and review them regularly.
- **Communication** – Maintain regular contact with your teacher and ask questions when you need clarification.
- **Problem Solving** – Read each problem carefully, identify the information provided, choose an appropriate strategy, and check whether your answer makes sense.
- **Engagement** – Stay focused, participate actively, and apply mathematical concepts to real-life situations.

Remember: MBF3C is designed to help you see how mathematics is used in everyday life, personal finance, the workplace, and practical decision-making. Approach each problem carefully, show your mathematical thinking, learn from feedback, and practise consistently. With regular effort and active participation, you can build confidence and succeed in mathematics.