Hamilton-Wentworth Catholic District School Board

Foundations for College Mathematics, Grade 12, College Preparation MAP 4C

St. Jean De Brebéuf Catholic Secondary School

DEPARTMENT TITLE

DEPARTMENT HEAD Mr. J. Hargot

COURSE TEACHER Mr. A. Cabilan

TEXTBOOK Foundations for College Mathematics 12 (McGraw-Hill Ryerson)

COURSE INFORMATION

CREDIT VALUE 1.0

PREREQUISITE Foundations for College Mathematics, Grade 11, College Preparation, (MBF 3C); or Functions and Applications, Grade 11, University/College Preparation (MCF 3M)

MINISTRY DOCUMENT The Ontario Curriculum, Grades 11 and 12, Mathematics, 2007 (Revised)

COURSE DESCRIPTION

This course enables students to broaden their understanding of real-world applications of mathematics. Students will analyse data using statistical methods; solve problems involving applications of geometry and trigonometry; solve financial problems connected with annuities, budgets, and renting or owning accommodation; simplify expressions; and solve equations. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for college programs in areas such as business, health sciences, and human services, and for certain skilled trades.

ONTARIO CATHOLIC GRADUATE EXPECTATIONS

This course enables students to develop effective communication skills, and become reflective and creative thinkers. Self-directed learning will be promoted with the intent of producing responsible, life-long learners. Students will learn to collaborate for the contribution of good of others, in service to the classroom, school and community.

COURSE CONTENT

UNIT 1 Measurement & Geometry

UNIT 2 Trigonometry

UNIT 3 Two-Variable Statistics

UNIT 4 Data Management Skills

UNIT 5 Graphical Models

UNIT 6 Algebraic Models

UNIT 7 Annuities and Mortgages

UNIT 8 Budgeting

TEACHING STRATEGIES

To promote student engagement and success, a variety of instructional approaches and management strategies will be used in the delivery of this course. These methods may include, but are not limited to:

- using assessment practices that inform instruction
- establishing learning goals and success criteria
- providing descriptive feedback
- implementing direct instruction of course material
- using effective questioning techniques
- incorporating literacy and numeracy strategies across all subject areas
- employing differentiated instruction to respond to students' needs
- providing opportunities for student practice and scaffolded instruction
- using a variety of learning materials and technology that meet the needs of the learner

BOARD AND MINISTRY INITIATIVES

There are many opportunities to integrate a variety of board and ministry initiatives in the classroom. In the spirit of Each Belongs, teachers create a safe and supportive environment where all students feel included and respected. Teachers plan rich tasks, select diverse texts, and engage students in experiences that allow them to explore a variety of topics such as Environmental Education, First Nations, Metis, and Inuit Studies, Healthy Relationships, Equity and Inclusive Practices, Financial Literacy, and Career and Life Planning.

OVERALL CURRICULUM EXPECTATIONS

MATHEMATICAL MODELS

By the end of this course students will:

- evaluate powers with rational exponents, simplify algebraic expressions involving exponents, and solve problems involving exponential equations graphically and using common bases;
- describe trends based on the interpretation of graphs, compare graphs using initial conditions and rates of change, and solve problems by modelling relationships graphically and algebraically;
- make connections between formulas and linear, quadratic, and exponential relations, solve problems using formulas arising from real-world applications, and describe applications of mathematical modelling in various occupations.

PERSONAL FINANCE

By the end of this course students will:

- demonstrate an understanding of annuities, including mortgages, and solve related problems using technology;
- gather, interpret, and compare information about owning or renting accommodation, and solve problems involving the associated costs;
- design, justify, and adjust budgets for individuals and families described in case studies, and describe applications of the mathematics of personal finance.

GEOMETRY AND TRIGONOMETRY

By the end of this course students will:

- solve problems involving measurement and geometry and arising from real-world applications;
- explain the significance of optimal dimensions in real-world applications, and determine optimal dimensions of two-dimensional shapes and three-dimensional figures;
- solve problems using primary trigonometric ratios of acute and obtuse angles, the sine law, and the cosine law, including problems arising from real-world applications, and describe applications of trigonometry in various occupations.

DATA MANAGEMENT

By the end of this course students will:

- collect, analyse, and summarize two-variable data using a variety of tools and strategies, and interpret and draw conclusions from the data;
- demonstrate an understanding of the applications of data management used by the media and the advertising industry and in various occupations.

ASSESSMENT AND EVALUATION

The development of learning skills and work habits are an integral part of student learning and influence student achievement. They will be included as a formal part of the assessment and evaluation process under the following categories: responsibility; organization; independent work; collaboration; initiative; self-regulation. Learning skills and work habits will be assessed through a variety of teacher strategies and will be formally reported on the Provincial Report Card according to the following scale: **E**-Excellent; **G**-Good; **S**-Satisfactory; **N**-Needs Improvement.

CATEGORY	WEIGHTING
Knowledge and Understanding	25 %
Application	25 %
Thinking	10 %
Communication	10 %
Final Exam	30 %

ACADEMIC DISHONESTY

CHEATING AND PLAGIARISM

Learning tasks that students complete (student work-tests, quizzes, assignments, etc.) and submit for assessment and evaluation must be their own work. Cheating and plagiarism is a serious offence that will not be condoned and will result in academic consequences as outlined in the HWCDSB *Cheating and Plagiarism Policy* in the School Agenda Book and on the School Website.

LATE AND MISSED ASSIGNMENTS

Students are expected to submit all work within the time frame specified by the teacher. There will be consequences for not completing assignments for evaluation, and/or for submitting assignments late, and/or for being absent on the day of tests and quizzes without proper documentation as outlined in HWCDSB *Late and Missed Assignment Policy Policy* in the School Agenda Book and on the School Website.