St. Peter Catholic High School
Mathematics Department

MCT4C – Mathematics for Technology
2013-2014

Teacher Mr. M. Couturier & Prof. Babak Moazzez

Prerequisite Course MCR3U or MCF3M

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, 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.

Ontario Catholic School Graduate Expectations

For the Catholic graduate, education is a life-long quest not only for knowledge and skills, but also for the Christian attitudes, values and beliefs that guide us on our human journey. Through the study of science, students will think reflectively and creatively to evaluate situations and solve problems, apply effective communication, decision-making, problem-solving, time and resource management skills, and achieve excellence, originality, and integrity in one's own work and support these qualities in the work of others.

Overall Course Expectations or Topics

Unit 4 & 8 – The Trigonometric Functions & Trigonometric Functions of Any Angle

- determine the values of the trigonometric ratios for angles less than 360º, and solve problems using
- the primary trigonometric ratios, the sine law, and the cosine law
- make connections between the numeric, graphical, and algebraic representations of sinusoidal functions
- demonstrate an understanding that sinusoidal functions can be used to model some periodic phenomena, and solve related problems, including those arising from real-world applications.

Units 11 & 13 Exponents, Radicals, Exponential and Logarithmic 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, including problems arising from real-world applications.

Unit 5 - 7 - Systems of Linear Equation; Determinants, Factoring and Quadratic Equations

- recognize and evaluate polynomial functions, describe key features of their graphs, and solve problems using graphs of polynomial functions
- make connections between the numeric, graphical, and algebraic representations of polynomial functions
- solve polynomial equations by factoring, make connections between functions and formulas, and solve problems involving polynomial expressions arising from a variety of applications.

Unit 2 Geometry

- represent vectors, add and subtract vectors, and solve problems using vector models, including those arising from real-world applications
- solve problems involving two-dimensional shapes and three-dimensional figures and arising from real-world applications
- determine circle properties and solve related problems, including those arising from real-world applications.

Course Resources

- Basic Technical Mathematics with Calculus SI Version 9th Edition, Allyn J. Washington

- www.habfanforever.com

Required Materials to meet with success in this course

- Binder, Pencils, Pens, Ruler, Loose leaf paper, Graph paper and Scientific Calculator

Report Card Grade

The Report Card grade is based on evidence collected through observations, conversations, and student products (tests/exams, assignments for evaluation). Some evidence will carry greater weight than other evidence. Determining a report card grade will involve professional judgement and interpretation of evidence that reflects the student's most consistent level of achievement, with special consideration given to more recent evidence.

Mark Breakdown

Term Work - 70 %

Term work is based on a variety of performance tasks over the course of the term that demonstrates: knowledge, thinking, communication, and application.

Summative - 30%
The summative evaluation must take place completely in class and may take the form of a final exam, or a variety of summative performance tasks and/or student portfolios that demonstrate the comprehensive achievement of the overall course expectations and the four areas of the achievement chart (knowledge, thinking, communication, and application). For this course, the final 30% is assessed as follows:

Exam ……. 10%

Rich Summative Task(s) …… 20%

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Student and Parent/Guardian Acknowledgement

We have read the above course outline and are aware of the student responsibilities to attend class on a regular basis and to provide evidence of learning within the established timelines.

Student's Name (print): _____

Student's Signature _____

Parent/Guardian Name (print): _____

Parent/Guardian Signature: _____

Parent or Student Comments or Expectations for this course (optional):