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|  | **Glendale Secondary School*****Mathematics* Course Outline 2015/2016***MCR3U Grade 11 Functions, University Preparation* |  |

**PREREQUISITE:** MPM 2D1 **HOURS:** 110 **CREDIT VALUE:** 1

**DEPARTMENT HEAD:** Mrs. R. Southern **TEXTBOOK:** Functions 11

**REQUIRED MATERIALS**: Scientific calculator, pencil, ruler, textbook

**GUIDELINE:** The Ontario Curriculum, Grades 11 and 12, Mathematics

The text will be provided without charge. The student is responsible for returning the book in reasonable condition. The student will be charged for lost or damaged books. **Textbook replacement cost:** $90.00

**COURSE DESCRIPTION:**

This course introduces the mathematical concept of the function by extending students’ experiences with linear and quadratic relations. Students will investigate properties of discrete and continuous functions, including trigonometric and exponential functions; represent functions numerically, algebraically, and graphically; solve problems involving applications of functions; and develop facility in simplifying polynomial and rational expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**STRANDS and OVERALL EXPECTATIONS:**

**Characteristics Of Functions**

* demonstrate an understanding of functions, their representations, and their inverses, and make

connections between the algebraic and graphical representations of functions using transformations;

* determine the zeros and the maximum or minimum of a quadratic function, and solve problems

involving quadratic functions, including problems arising from real-world applications;

* demonstrate an understanding of equivalence as it relates to simplifying polynomial, radical, and

rational expressions.

**Exponential Functions**

* evaluate powers with rational exponents, simplify expressions containing exponents, and describe

properties of exponential functions represented in a variety of ways;

* 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.

**Discrete Functions**

* demonstrate an understanding of recursive sequences, represent recursive sequences in a variety of

ways, and make connections to Pascal’s triangle;

* demonstrate an understanding of the relationships involved in arithmetic and geometric sequences

and series, and solve related problems;

* make connections between sequences, series, and financial applications, and solve problems involving

compound interest and ordinary annuities.

**Trigonometric Functions**

* determine the values of the trigonometric ratios for angles less than 360º; prove simple trigonometric

identities; and solve problems using the primary trigonometric ratios, the sine law, and the cosine law;

* demonstrate an understanding of periodic relationships and sinusoidal functions, and make

connections between the numeric, graphical, and algebraic representations of sinusoidal functions;

* identify and represent sinusoidal functions, and solve problems involving sinusoidal functions,

including problems arising from real-world applications.

***The primary purpose of assessment and evaluation is to improve student learning***

**ASSESSMENT**

The process of assessing student learning is continuous and on-going. Teachers use information gathered through assessments to provide feedback for students, to guide instruction and develop individual learning goals for students. This is assessment ***for*** learning. Students use this feedback to continuously improve their achievement and set individual learning goals. This is assessment ***as*** learning. Information from assessments informs the teacher’s professional judgment, but is not used in determining the student’s level of achievement.

**EVALUATION**

Evaluation is the process of determining a level of student achievement of the Overall Expectations for a course, which is recorded as a mid-term or final grade on a report card.

Students will be given numerous and varied opportunities to demonstrate their achievement of the Overall Expectations across the four categories of achievement (Knowledge & Understanding, Thinking, Communication and Application). Evidence of student achievement of the Overall Expectations is collected over time from three different sources – observations, conversations and student products.

To be successful students **must demonstrate achievement of EACH of the Overall Expectations** for the course. If a student is missing evidence of achievement of one or more of the Overall Expectations then a lower limit will be determined by the teacher.

In determining a report card grade teachers use their professional judgment to interpret the evidence of student achievement which reflects the student’s most consistent level of achievement with special considerations given to the more recent evidence.

The final grade is determined by the following breakdown:

**70 %** - evaluations made at the end of units throughout the semester.

**30%** - final demonstrations of learning (culminating activities and/or final examinations)

**REPORT CARDS**

Student progress is reported at 3 times during the semester.

**Interim Report** – October and March. Reports on student Learning Skills and Work Habits with next steps for improvement.

**Mid-term Report Card** – November and April. Reports on student achievement of the Overall Expectations to date. **Incomplete achievement** is reflected on Mid-term Report Cards, but replaced when learning has been demonstrated.

**Final Report Card** – February and July. Reports on student achievement of all of the Overall Expectations.

**ACADEMIC HONESTY**

Students are responsible for being academically honest in all aspects of their schoolwork. Academic dishonesty includes a variety of behaviours including cheating, plagiarism, facilitating or aiding academic dishonesty, and the unauthorized access or manipulating of student records, work and computer programs. Such behaviours impede the learning process and threaten the educational environment for all students.

Intentional academic dishonesty will result in disciplinary consequences. Teachers and parents should support students in striving for excellence and producing work with integrity.

**ATTENDANCE AND LEARNING SKILLS**

There is a direct link between good attendance and success at school. Students are expected to attend classes regularly and on time. Evidence of student achievement is gathered during classes through observations and learning conversations.

Learning Skills play an important role in a student’s level of achievement. Students will be assessed on the following learning skills: responsibility, independent work, collaboration, organization, initiative, and self-regulation.

**CELL PHONES/PERSONAL ELECTRONIC DEVICES**

Teachers will determine when personal electronic devices, including cell phones, will be used as instructional tools/supports. At other times these devices (with the exception of electronic translators) are not to be used and must be turned off and be stored away. Consequences for inappropriate use of these devices may include removal of the device from the learning environment.

**SCHOOL WIDE SUPPORTS**

* Student Support Team (formerly know as Learning Resource)
	+ In-class help
	+ Test and exam support
	+ Alternate learning environment
* English Language Learner Support Team
	+ Lunch-time help
	+ Test and exam support
* Math lunch-time help
* Math Homework Help – on-line support
* Information via school website @ <http://schools.hwdsb.on.ca/glendale/>
* School wide access to password protected wireless network
	+ Access to on-line resources
* Literacy Coaching
* Literacy @ Lunch
* Learning Commons @ Lunch
* Paper and electronic calendars
* Teacher/department Lunch-time/before/after school help

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I am aware of the course expectations and the policies and supports put in place for the student to be successful.

**Student’s Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Department Head Name**: Mrs. R. Southern **Contact Number**: 905-560-7343 ext.

**Email:** rsouther@hwdsb.on.ca

Parent/ Guardian Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_