



**Oakwood Collegiate Institute**  
**991 St. Clair Ave. West**  
**Toronto, Ontario M6E 1A3**  
**Telephone: (416) 393-1780**  
**Fax: (416) 393-8169**

**Website: <http://schools.tdsb.on.ca/oakwoodci/>**

***Course of Study: Functions, University Preparation***

<b>Academic Year:</b> 2019-2020		<b>Teacher Name:</b>	
<b>Department:</b> Mathematics		<b>Department Head:</b> S Burtch	
<b>Date developed:</b> June 2009		<b>Revised:</b>	
<b>Course Title</b>	Functions	<b>Course Code</b>	MCR 3U1
<b>Prerequisite</b>	Principles of Mathematics, Grade 10, Academic	<b>Grade</b>	11
<b>Level</b>	University	<b>Credit Value</b>	1.0

**Course Description**

**Ontario Ministry of Education Document:**

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; investigate inverse functions; and develop facility in determining equivalent algebraic expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**Textbook:**

### Instructional Strands/Units

<i><b>Strand/Unit Titles</b></i>	<i><b>Approx. Time Spent</b></i>	<i><b>Overall Expectations/Unit Description</b></i>
Discrete Functions	2 Months	<ul style="list-style-type: none"> <li>· demonstrate an understanding of recursive sequences, represent recursive sequences in a variety of ways, and make connections to Pascal's triangle;</li> <li>· demonstrate an understanding of the relationships involved in arithmetic and geometric sequences and series, and solve related problems;</li> <li>· make connections between sequences, series, and financial applications, and solve problems involving compound interest and ordinary annuities.</li> </ul>
Characteristics of Functions	2 Months	<ul style="list-style-type: none"> <li>· demonstrate an understanding of functions, their representations, and their inverses, and make connections between the algebraic and graphical representations of functions using transformations;</li> <li>· 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;</li> <li>· demonstrate an understanding of equivalence</li> </ul>
Exponential Functions	2 Months	<ul style="list-style-type: none"> <li>· evaluate powers with rational exponents, simplify expressions containing exponents, and describe properties of exponential functions represented in a variety of ways;</li> <li>· make connections between the numeric, graphical, and algebraic representations of exponential functions;</li> <li>· identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications.</li> </ul>
Trigonometric Functions	2 Months	<ul style="list-style-type: none"> <li>· determine the values of the trigonometric ratios for angles less than <math>360^\circ</math>; prove simple trigonometric identities; and solve problems using the primary trigonometric ratios, the sine law, and the cosine law;</li> <li>· demonstrate an understanding of periodic relationships and sinusoidal functions, and make connections between the numeric, graphical, and algebraic representations of sinusoidal functions;</li> <li>· identify and represent sinusoidal functions, and solve problems involving sinusoidal functions, including problems arising from real-world applications.</li> </ul>

<b>Student Evaluation Criteria</b>			
<b>Term Mark</b>		<b>Final Mark</b>	
<b>Categories</b>			
Knowledge/Understanding (K/U)	<b>30%</b>	Term Mark	<b>70%</b>
Inquiry/Thinking (T/I)	<b>25%</b>	Final Exam	<b>25%</b>
Communication (C)	<b>20%</b>	Study Aid Sheet	<b>5%</b>
Application (A)	<b>25%</b>		

	First Report	Second Report	Interim Report	Final Report
<b>Progress Reports</b>	Regular progress reports will be provided after each unit			
<b>Report Cards</b>				
<b>Parent/Teacher Interviews</b>				

<b>Assessment of Learning Skills</b>
<i>The 5 learning skills, independent work, teamwork, organization, homework and initiative, will be assessed using a variety of techniques including, but not limited to, homework checks, lab participation, group work/research, class involvement, cooperative activities and independent work</i>

<b>Assessment and Evaluation Tools</b>		
<b><i>Knowledge/Understanding</i></b>	<b><i>Thinking/Inquiry and Application</i></b>	<b><i>Communication</i></b>
Quizzes Tests In-Class Assignments Homework	Investigations Projects Problem Solving Real-World Applications Explorations Word Problems	Discussions Participation Written and oral communication of mathematical ideas

<b>Communication</b>	
<b><i>Parents</i></b>	<b><i>Contact the Math department at 393-1780 ext. 20105</i></b>
<b><i>Students</i></b>	<b><i>Contact your teacher in person</i></b>
<b><i>Extra help Math Office</i></b>	<b><i>By arrangement with your teacher Room 314A</i></b>
<b><i>School Website</i></b>	<b><i><u><a href="http://schools.tdsb.on.ca/OakwoodCI">http://schools.tdsb.on.ca/OakwoodCI</a></u></i></b>
<b><i>Classroom Website</i></b>	<b><i>Google classroom: CODE:</i></b>

## **Success Plan**

1. Come to class every day, on time, with a pencil, eraser, ruler, scientific calculator and binder.
2. Listen to and participate in the lesson.
3. Complete the work assigned in class.
4. Ask for help, ask questions when you need it.
5. Help your classmates.
6. Complete all evaluations to the best of your ability.
7. Communicate regularly with your teacher.

## **Textbooks**

**Students will be issued a workbook for use during the school year and are expected to bring it to class each period. Replacement cost \$20**

## **Evaluation**

**Evaluation takes a balanced approach (see above) to the 4 categories of achievement (K/U, T/I, C, A) and blends these so that most evaluation tasks include 2 or more of the categories. For purposes of simplification, the final mark will be calculated as follows:**

<b>Course Work, including: Tests, Quizzes, Assignments, etc. (K/U, C, A)</b>	<b>70%</b>
<b>Final Written Exam (K/U, T/I, C, A)</b>	<b>25 %</b>
<b>Study Aid Sheet</b>	<b>5%</b>

**Teachers will communicate to students the approximate value of assignments and their placement in the evaluation chart.**

## **Attendance, Punctuality and Work Habits**

**It is expected that students arrive punctually to all classes and that attendance is regular. When students are absent, it is the responsibility of the student to find out what was missed. This should be done at an appropriate time such as before school on the date of return. Students are not to disrupt the learning of others by catching up on missed work during class. This includes requests for missed/lost handouts. All such matters should be dealt with before class commences.**

**Homework will be assigned on a regular basis. Students are expected to demonstrate initiative and self-direction in their approach to homework. Failure to do homework will adversely affect a student's ability to achieve high marks.**

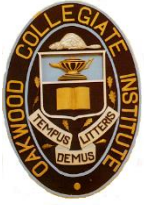
## **Coursework – Tests, Assignments, etc.**

**Students are expected to write tests/quizzes on the set date. Students must make arrangements with the teacher in advance of the test date if they know that they will be away. In such cases, the student is expected to make arrangements with their teacher to make up the missed evaluation. If students are absent for an officially recognized excuse, they must present documentation and the teacher will set a date for an alternative test to be written.**

**Assignments – each assignment has a due date. Assignments are due at the start of the period on the due date, unless otherwise specified. Late assignments will be accepted until the ultimate due date. This is usually the date on which marked assignments are returned. After this date, assignments may not be submitted and the student will receive a zero. Teachers may use a variety of techniques to encourage students to submit late work. This may include, if necessary, a mark reduction of 10%.**

## **Exams**

**It is usually not possible to reschedule these evaluations or to provide alternative assignments. Therefore a mark of zero will be assigned unless suitable documentation (medical certificate, etc.) is received. In such cases, the teacher, in consultation with colleagues and the administration, will determine an appropriate mark.**



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**COURSE:** \_\_\_\_\_

**TEACHER:** \_\_\_\_\_

***Please ensure that your child comes to school with the following items every class:  
Binder, Pen, Pencil, Eraser, Ruler, Scientific Calculator, Pencil case, Paper***

***Please acknowledge that you have read this outline:***

<b>Date:</b>	<b>Parent Phone number:</b> <b>Parent email:</b> <b>Parent/Guardian Full Name:</b> _____
<b>Date:</b>	<b>Student Signature</b>

Please return this to \_\_\_\_\_ by \_\_\_\_\_