

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: Advanced Functions: Grade 12

Academic Year: 2019-2020		Teacher Name:	
Department: Mathematics		Department Head: S. Burtch	
Date developed: June 2009		Revised: June 2016	
Course Title	Advanced Functions	Course Code	MHF4U1
Prerequisite	Functions, Grade 11, University Preparation, or Mathematics for College Technology, Grade 12, College Preparation	Grade	12
Level	University	Credit Value	1.0

Course Description		
Ontario Ministry of Education Document:		
<p>This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; develop techniques for combining functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended both for students taking the Calculus and Vectors course as a prerequisite for a university program and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs.</p>		
Textbook: Nelson – Advanced Functions		
Instructional Strands/Units		
Strand/Unit Titles	Approx. Time Spent	Overall Expectations/Unit Description
Characteristics of Functions	1 Month	<ul style="list-style-type: none"> demonstrate an understanding of average and instantaneous rate of change, and determine, numerically and graphically, and interpret the average rate of change of a function over a given interval and the instantaneous rate of change of a function at a given point; determine functions that result from the addition, subtraction, multiplication, and division of two functions and from the composition of two functions, describe some properties of the resulting functions, and solve related problems; compare the characteristics of functions, and solve problems by modelling and reasoning with functions, including problems with solutions that are not accessible by standard algebraic techniques.

Instructional Strands/Units (Cont'd)		
Strand/Unit Titles	Approx. Time Spent	Overall Expectations/Unit Description
Trigonometric Functions	1 Month	<ul style="list-style-type: none"> demonstrate an understanding of the meaning and application of radian measure; make connections between trigonometric ratios and the graphical and algebraic representations of the corresponding trigonometric functions and between trigonometric functions and their reciprocals, and use these connections to solve problems; solve problems involving trigonometric equations and prove trigonometric identities.
Polynomial and Rational Functions	1 Month	<ul style="list-style-type: none"> identify and describe some key features of polynomial functions, and make connections between the numeric, graphical, and algebraic representations of polynomial functions; identify and describe some key features of the graphs of rational functions, and represent rational functions graphically; solve problems involving polynomial and simple rational equations graphically and algebraically; demonstrate an understanding of solving polynomial and simple rational inequalities.
Exponential and Logarithmic Functions	1 Month	<ul style="list-style-type: none"> demonstrate an understanding of the relationship between exponential expressions and logarithmic expressions, evaluate logarithms, and apply the laws of logarithms to simplify numeric expressions; identify and describe some key features of the graphs of logarithmic functions, make connections among the numeric, graphical, and algebraic representations of logarithmic functions, and solve related problems graphically; solve exponential and simple logarithmic equations in one variable algebraically, including those in problems arising from real-world applications.

Student Evaluation Criteria			
Term Work		Culminating Activities	
Categories			
Knowledge/Understanding (K/U)	%15 – 20	Final Exam	30 %
Inquiry/Thinking (T/I)	% 15 – 20		
Communication (C)	% 15 – 20		
Application (A)	% 15 – 20		
Term Total 70%		Culminating Activity Total 30%	

Report Card Schedule				
	1st Report Card	2nd Report Card	Interim Report Card	Final Report Card
Report Cards	Nov 10 th 2016	Feb 14 th 2017	April 20 th 2017	June 26 th 2017
Parent-Teacher Interviews	Nov 17 th 2016	Feb 16 th 2017		

Assessment of Learning Skills

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

Assessment and Evaluation Tools

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

Communication

<i>Parents</i>	<i>Contact the Math department at 393-1790 ext. 20038</i>
<i>Students</i>	<i>Contact your teacher in person</i>
<i>Extra help</i>	<i>By arrangement with your teacher</i>
<i>School Website</i>	<i>http://schools.tdsb.on.ca/OakwoodCI</i>

Department Policies

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 when you need it.
5. Help your classmates.
6. Complete all evaluations to the best of your ability.

Textbooks

Students will be issued a textbook for use during the school year and are expected to bring it to class each period. Replacement cost \$80

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:

<i>Course Work, including: Tests, Quizzes, Assignments, etc. (K/U, C, A)</i>	<i>70%</i>
<i>Culminating Activities (incl. Final Exam) (K/U, T/I, C, A)</i>	<i>30 %</i>

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 and Culminating Activities

Exams and culminating evaluations must be done on the due date. 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.

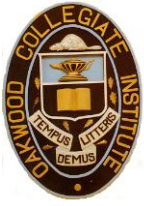
Course:

MHF 4U1

Teacher:

S. Burtch

Oakwood Collegiate Institute



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COURSE: MHF 4U1

TEACHER: S. Burtch

Please acknowledge that you have read this outline:

<i>Date:</i>	<i>Parent Signature</i>
<i>Date:</i>	<i>Student Signature</i>

Please return this to Mr. Burtch by Friday, Sept 16th 2016.