DATE: *Tuesday September 6, 2022*
SECONDARY SCHOOL: *Brebeuf College School*
DEPARTMENT HEAD: *Brad Ryan*
TEACHER: *Brad Ryan*
DEPARTMENT: *Mathematics*

Curriculum Policy Document			
COURSE TITLE	Functions 11	**COURSE CODE**	MCR 3UP
PRE-REQUISITE	MPM 2D or MPM 2D2	**GRADE & TYPE**	11
FULL YEAR / SEMESTER	Semester	**CREDIT VALUE**	1

COURSE DESCRIPTION (As specified in Ministry of Education Policy Document)
This course introduces some financial applications of mathematics, extends students' experiences with functions and trigonometry, and introduces second-degree relations. Many of the expectations of this course are based on direct extensions of concepts introduced in Grades 9 and 10. Having previously explored linear and quadratic relationships, students study polynomial and rational functions, and investigate the relationship between functions and their inverses. Students continue their study of trigonometry and discover new properties and contexts to which it can be applied. Graphing and algebraic skills are also consolidated and extended in this course. Identifying connections between the algebraic and graphic representations of functions continues to be an important skill.

Units of Instruction		
Strand / Unit Titles	**CLASSES**	**OVERALL EXPECTATIONS / UNIT DESCRIPTION**
Introduction to Functions	**12**	In this unit, the function as a special type of relation will be studied emphasizing its various methods of representations. The properties of some basic functions will be explored and transformations will be applied to these functions. The inverse of a linear function and its properties will also be studied.
Algebraic Expressions	**10**	In this unit, students will review and expand polynomial operations. Rational expressions will be introduced and studied. Simplifying rational expressions as well as their addition, subtraction, multiplication and division will be emphasized.
Quadratic Functions	**10**	In this unit, the properties of quadratic functions and their graphs will be reviewed. Students are expected to determine the zeroes and calculating the optimal value of quadratic functions. Quadratic models will be applied to solving problems.

Exponential Functions	**9**	In this unit, the characteristics of exponential functions and their graphs will be explored. The comparison of exponential functions with linear and quadratic functions will be stressed. Students will evaluate powers with integer and rational exponents and simplify expressions involving them. Problems involving exponential growth and decay will be studied.
Trigonometry	**10**	In this unit, the six trigonometric ratios will be related to the unit circle. Students will solve real-life problems by using trigonometric ratios, properties of triangles, and the Sine and Cosine Law. Simple trigonometric identities will be proven.
Sinusoidal Functions	**9**	In this unit, the properties and the graphs of sinusoidal and other periodic phenomena will be explored. Transformations of the $y = \sin x$ and $y = \cos x$ functions will be studied. Students will determine the equations of sinusoidal functions in real-world situations and use them to solve problems.
Sequences and Series	**10**	In this unit, students will identify and classify sequences. Functions for describing sequences will be explored and used to make predictions. Real –life problems and applications will be investigated.
Financial Applications	**5**	In this unit, students will learn how interest is calculated. Problems involving the Future Value and the Present Value of an lump sum investment will be solved. Annuities will be used to calculate payments that must be made when a purchase is financed over a period of time.

STUDENT EVALUATION CRITERIA					
TERM – 70%		FINAL – 30%		FINAL REPORT CARD - 100%	
10 ≤ RELATIVE EMPHASIS / WEIGHTING ≤ 40		RELATIVE EMPHASIS / WEIGHTING		TERM TOTAL + FINAL TOTAL = REPORT CARD MARK	
KNOWLEDGE/UNDERSTANDING	22.5	**Final Exam**	30		
INQUIRY/THINKING	15				
COMMUNICATION	10				
APPLICATION	22.5				
TERM TOTAL	**70**	FINAL TOTAL	**30**		

ASSESSMENT FORMAT USED					
WRITTEN		PERFORMANCE		OTHER	
e.g. Multiple Choice	X	e.g. Manipulative Skills	X	e.g. Teacher Observation	X
Short Answer	X	Investigations	X	Interviews	
Open/Free Response	X	Projects	X	Skills Checklist	
Papers/Reports	X	Presentations	X		
		Programming			
		Problem Solving	X		

Policies & Procedures (Examples provided)	
Plagiarism / Cheating	See School Agenda Page 15 "School Code of Behaviour"
Internet Policies	Acceptable Use Policy A.29 of the T.C.D.S.B. at http://www.tcdsb.org
Classroom Policies	- Arrive on time prepared to learn. - Stay on task during class activities. - No food or drink allowed in the classroom. - Students are expected to be in proper uniform at all times. - No portable music devices or cell phones to be used in class.
Absences	Students are responsible to contact a fellow classmate or the teacher to receive any missed work due to absence.
Teacher Contacts	Parents are encouraged to contact the teacher if any concerns arise at **brad.ryan@tcdsb.org**. or call the school for an appointment.
Extra Help	Extra help is provided in the morning before school (8:00 – 8:35) and after school (After 2:50 pm)
Late Assignments	Assignments shall be accepted up until the day that they are returned by the teacher, and may be subject to administrative consequences for lateness.

Resources (Examples provided)	
Textbook	*Functions: 11 (Nelson)*
Student Materials	Notebooks, Pens, Pencils, Ruler, Calculator
Computer Use	**Lab**: Available for booking. **Software**: Microsoft Office, Geometer's Sketchpad , Desmos
Course Related Websites	http://www.MrRyan.com

Student:	OEN:	Grade:	Homeroom:

Learning Skills and Work Habits

E – Excellent   G – Good   S – Satisfactory   N – Needs Improvement

Responsibility
- Fulfils responsibilities and commitments within the learning environment.
- Completes and submits class work, homework, and assignments according to agreed-upon timelines.
- Takes responsibility for and manages own behaviour.

Organization
- Devises and follows a plan and process for completing work and tasks.
- Establishes priorities and manages time to complete tasks and achieve goals.
- Identifies, gathers, evaluates, and uses information, technology, and resources to complete tasks.

Independent Work
- Independently monitors, assesses, and revises plans to complete tasks and meet goals.
- Uses class time appropriately to complete tasks.
- Follows instructions with minimal supervision.

Collaboration
- Accepts various roles and an equitable share of work in a group.
- Responds positively to the ideas, opinions, values, and traditions of others.
- Builds healthy peer-to-peer relationships through personal and media-assisted interactions.
- Works with others to resolve conflicts and build consensus to achieve group goals.
- Shares information, resources, and expertise, and promotes critical thinking to solve problems and make decisions.

Initiative
- Looks for and acts on new ideas and opportunities for learning.
- Demonstrates the capacity for innovation and a willingness to take risks.
- Demonstrates curiosity and interest in learning.
- Approaches new tasks with a positive attitude.
- Recognizes and advocates appropriately for the rights of self and others.

Self-Regulation
- Sets own individual goals and monitors progress towards achieving them.
- Seeks clarification or assistance when needed.
- Assesses and reflects critically on own strengths, needs, and interests.
- Identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals.
- Perseveres and makes an effort when responding to challenges.

Percentage Mark	Achievement of the Provincial Curriculum Expectations
80–100	The student has demonstrated the required knowledge and skills with a high degree of effectiveness. Achievement surpasses the provincial standard. (Level 4)
70–79	The student has demonstrated the required knowledge and skills with considerable effectiveness. Achievement meets the provincial standard. (Level 3)
60–69	The student has demonstrated the required knowledge and skills with some effectiveness. Achievement approaches the provincial standard. (Level 2)
50–59	The student has demonstrated the required knowledge and skills with limited effectiveness. Achievement falls much below the provincial standard. (Level 1)
Below 50	The student has not demonstrated the required knowledge and skills. Extensive remediation is required.
I	Insufficient evidence to assign a percentage mark (for Grade 9 and 10 courses only)
W	The student has withdrawn from the course.

ESL/ELD – Achievement is based on expectations modified from the curriculum expectations for the course to support English language learning needs.

IEP – Individual Education Plan

FRENCH – The student receives instruction in French for the course.

SHSM – Specialist High Skills Major (for Grade 11 and 12 courses only)

Course Median – The median is the percentage mark at which 50 per cent of the students in the course have a higher percentage mark and 50 per cent of the students have a lower percentage mark.

NOTE: The above chart is a reformatting of the skills identified in the Ministry of Education's ***Growing Success Document 2010***.