COURSE INFORMATION SHEET

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

CURRICULUM POLICY DOCUMENT			
COURSE TITLE	Mathematics 10 - STEAM	COURSE CODE	MPM 2D2
PRE-REQUISITE	MTH 1W or MTH 1W2	GRADE & TYPE	10
FULL YEAR / SEMESTER	Semester	CREDIT VALUE	1

COURSE DESCRIPTION (AS SPECIFIED IN MINISTRY OF EDUCATION POLICY DOCUMENT)

This course enables students to broaden their understanding of relationships and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and abstract reasoning. Students will explore quadratic relations and their applications; solve and apply linear systems; verify properties of geometric figures using analytic geometry; and investigate the trigonometry of right and acute triangles. Students will reason mathematically and communicate their thinking as they solve multi-step problems. In addition, as this is an enriched course, selected topics from Grade 11 will be covered including work with rational expressions, radian measure, trigonometric graphs and equations.

UNITS OF INSTRUCTION

Strand / Unit Titles	CLASSES	OVERALL EXPECTATIONS / UNIT DESCRIPTION
Systems of Linear Equations	**12**	In this unit, linear systems will be analyzed both graphically and algebraically, with and without the use of technology. Activities in this unit provide a context for finding and interpreting points of intersection and lead students to solve linear systems by the methods of substitution and elimination.
Line Segments and Circles	**10**	In this unit, coordinates will be used to determine and solve problems involving midpoints, slopes, and lengths of line segments. Equations of circles with center (0,0) will be determined and properties of line segments will be used to identify geometric figures and verify their properties.
Graphing Quadratic Relations	**10**	In this unit, graphs and properties of quadratic relations of the forms $y = ax^2 + bx + c$ and $y = a(x-r)(x-s)$ will be described. Quadratic expressions will be expanded and simplified and quadratic models will be applied to solving problems.

Factoring Algebraic Expressions	**9**	In this unit, the greatest common factor in an algebraic expression will be used to write the expression as a product. Different types of quadratic expressions will be recognized and appropriate strategies will be utilized to factor them.
Applying Quadratic Models	**10**	In this unit, students will investigate the $y = a(x-h)^2 + k$ form of a quadratic relation. Students will apply transformations to sketch graphs of quadratic relations and apply quadratic models to solve problems. An investigation to determine the connections among different forms of the quadratic relation will be undertaken.
Quadratic Equations	**9**	In this unit, quadratic relations will be solved graphically, by factoring, and then by the quadratic formula. Quadratic relations will be written in the vertex form by completing the square and model problems involving quadratic relations in standard, factored, and vertex forms will be solved.
Similar Triangles and Trigonometry	**10**	In this unit, properties of congruent and similar triangles will be determined and compared and problems will be solved involving similar triangles. Side lengths and angle measures in right triangles will be determined using primary trigonometric ratios and problems involving right triangles and trigonometry will be solved.
Acute Triangle Trigonometry	**5**	In this unit, the Sine Law and the Cos Law will be developed and used to determine side lengths and angles in acute triangles. Problems that can be modeled using acute triangles will be solved using the Sin Law and the Cos Law.

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	X		
		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 (8:10 – 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	*Principles of Mathematics: 10 (Nelson)* by: Chris Kirkpatrick
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	Organization
• 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.	• 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	**Collaboration**
• Independently monitors, assesses, and revises plans to complete tasks and meet goals. • Uses class time appropriately to complete tasks. • Follows instructions with minimal supervision.	• 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	**Self-Regulation**
• 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.	• 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.	

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