

COURSE INFORMATION SHEET

DATE: SEPTEMBER ,2007
SECONDARY SCHOOL: Brebeuf College
DEPARTMENT HEAD: Michael Daoust
TEACHER: M.Daoust
DEPARTMENT: Mathematics



CURRICULUM POLICY DOCUMENT			
COURSE TITLE	Grade 11 Enriched Mathematics	COURSE CODE	MCR3UE
PRE-REQUISITE	MPM2DE	GRADE & TYPE	10Academic
FULL YEAR / SEMESTER	Semester+	CREDIT VALUE	1

COURSE DESCRIPTION
<p>This course begins with a study of arithmetic and geometric sequences and series and their financial applications. Students study polynomial and rational functions, investigate the relationship between functions and their inverses and further consolidate their graphing skills. In addition, the study of sinusoidal functions and exponential functions and their transformations is undertaken. Enrichment topics include radian measure, complex numbers, and conics as well as math contest materials.</p>

LISTED IN ORDER OF INSTRUCTIONAL DELIVERY		
STRAND / UNIT TITLES	HOURS	OVERALL EXPECTATIONS / UNIT DESCRIPTION
RADICALS AND PASCAL'S TRIANGLE	7	Students investigate Pascal's Triangle and its application to Binomial expansions. Radicals and the solving of radical equations is also undertaken.
SERIES AND SEQUENCES AND THEIR APPLICATIONS	20	Students investigate arithmetic and geometric sequences and series. This knowledge serves as the basis for applications of personal finance. Students develop the formula for compound interest and solve problems related to compound interest and annuities. As skills are developed, students use graphic calculators to investigate the cost of borrowing when interest rates, compound periods, lending terms, etc., are varied. Students review and extend exponent laws and apply skills with linear and exponential functions.
FUNCTION NOTATION, INVERSES AND GRAPHING BY TRANSFORMATION	20	Students, through authentic models, are introduced to the definition of a function and the associated notation. Students use graphing technology and paper-and-pencil tasks to investigate the properties of functions, their inverses and transformations of functions. The investigations are used to introduce and extend the use of function notation to inverses and transformations.

		Students explore the domain and range of functions, inverses and transformations.
TRIGONOMETRY	20	Students consolidate and extend trigonometric concepts first introduced in Grade 10. Students investigate the relationship between degree and radian measure, and explore the use of the unit circle and special triangles to determine selected values of the primary trigonometric ratios. Methods of proof are introduced and applied to verify trigonometric identities. Students develop the skills to manipulate and solve trigonometric equations
GRAPHING TRIGONOMETRIC FUNCTIONS	15	Students investigate the periodic nature and graphical properties of sinusoidal functions. Using technology, students explore the effects of simple transformations on their graphs and equations. Students apply these concepts to model authentic problems.
EXPONENTIAL FUNCTIONS	8	Students explore the properties of exponential functions as well as their transformations. Mathematical modelling of some real life growth and decay problems is investigated
CONICS	20	Students study various conic sections including the parabola, ellipse and hyperbola. The focus –directrix approach and the transformational approach are both investigated. Real life applications of conic sections are considered.

STUDENT EVALUATION CRITERIA

TERM – 70%		FINAL – 30%		FINAL REPORT CARD GRADE CALCULATION – 100%
10 ≤ RELATIVE EMPHASIS / WEIGHTING ≤ 40		RELATIVE EMPHASIS / WEIGHTING		TERM TOTAL + FINAL TOTAL = REPORT CARD MARK
KNOWLEDGE/UNDERSTANDING	22.5			
INQUIRY/THINKING	15			
COMMUNICATION	10			
APPLICATION	22.5			
TERM TOTAL	70	FINAL TOTAL	30	

ASSESSMENT FORMAT USED

WRITTEN		PERFORMANCE		OTHER	
e.g. Slogan		e.g. Manipulative Skills		e.g. Teacher Observation	x
Short Answer	x	Extended	x	Interviews	

		Investigations			
Open/Free Response		Projects	x	Portfolios	
Essay/Journal		Concept Mapping		Skills Checklist	
Papers/Reports	x	Venn Diagrams			
Multiple Choice	x	Presentations			

RESOURCES	
TEXTBOOK	Mathematics 10 by Nelson, Math 11 by Addison-Wesley
STUDENT MATERIALS	TI 83 + graphic calculator
EXCURSIONS	
COMPUTER USE	
COURSE RELATED WEBSITES	

POLICIES & PROCEDURES	
PLAGIARISM	n/a
LATE ASSIGNMENTS	Assignments shall be accepted up until the day that they are returned by the teacher.
MISSED WORK	Teacher will be available before school at 8:30 AM every morning and after school upon request to help students catch up on missed work.
ABSENCES	A signed note from a parent is required by the Office when returning from an absence. Students are expected to catch up on missed work upon return to school.
HOMEWORK	Homework is assigned every night to consolidate and extend student learning. On average 40 minutes of homework is assigned per day.
TEACHER CONTACTS	See missed work section above. Mid-term reports are issued in November and April. Early warning letters for failing students are issued in early October and early March. Letters of concern at any time
EXTRA HELP	See missed work
REPORTING DATES	Final exams are held in January or June

LEARNING SKILLS CRITERIA	
IN EACH REPORTING PERIOD, REPORT ON THE QUALITY OF THE LEARNING SKILLS DEMONSTRATED BY THE STUDENT IN EACH OF THE CATEGORIES IDENTIFIED ON THE REPORT CARD USING THE FOLLOWING LETTER SYMBOLS.	
E–EXCELLENT	G–GOOD
S–SATISFACTORY	N–NEEDS IMPROVEMENT
SKILL: WORKS INDEPENDENTLY	
INDICATORS:	
<ul style="list-style-type: none"> • accomplishes tasks independently • accepts responsibility for completing tasks • follows instructions • regularly completes assignments on time and with care • demonstrates self-direction in learning • independently selects, evaluates, and uses appropriate learning materials, resources, and activities 	<ul style="list-style-type: none"> • demonstrates persistence in bringing tasks to completion • uses time effectively • uses prior knowledge and experience to solve problems and make decisions • reflects on learning experiences
SKILL: ORGANIZATION	
INDICATORS:	
<ul style="list-style-type: none"> • organizes work when faced with a number of tasks • devises and follows a coherent plan to complete a task • follows specific steps to reach goals or to make improvements • revises steps and strategies when necessary to achieve a goal 	<ul style="list-style-type: none"> • manages and uses time effectively and creatively • demonstrates ability to organize and manage information • follows an effective process for inquiry and research • uses appropriate information technologies to organize information and tasks
SKILL: INITIATIVE	
INDICATORS:	
<ul style="list-style-type: none"> • seeks out new opportunities for learning • responds to challenges and takes risks • demonstrates interest and curiosity about concepts, objects, events, and resources • seeks necessary and additional information in print, electronic, and media resources • identifies problems to solve, conducts investigations, and generates questions for further inquiry • requires little prompting to complete a task, displaying self-motivation and self-direction 	<ul style="list-style-type: none"> • approaches new learning situations with confidence and a positive attitude • develops original ideas and devises innovative procedures • attempts a variety of learning activities • seeks assistance when needed • uses information technologies in creative ways to improve learning for self or others
SKILL: TEAMWORK	
INDICATORS:	
<ul style="list-style-type: none"> • works willingly and cooperatively with others • shares resources, materials, and equipment with others • responds and is sensitive to the needs and welfare of others • solves problems collaboratively • accepts various roles, including leadership roles • takes responsibility for his or her own share of the work to be done • works to help achieve the goals of the group or the class • helps to motivate others, encouraging them to participate • contributes information and ideas to solve problems and make decisions 	<ul style="list-style-type: none"> • questions the ideas of the group to seek clarification, test thinking, or reach agreement • shows respect for the ideas and opinions of others in the group or class • listens attentively, without interrupting • in discussions, paraphrases points of view and asks questions to clarify meaning and promote understanding • recognizes the contribution of group members by means of encouragement, support, or praise • seeks consensus and negotiates agreement before making decisions
SKILL: WORK HABITS/HOMEWORK	
INDICATORS:	
<ul style="list-style-type: none"> • completes homework on time and with care • puts forth consistent effort • follows directions • shows attention to detail • uses materials and equipment effectively 	<ul style="list-style-type: none"> • begins work promptly and uses time effectively • perseveres with complex projects that require sustained effort • applies effective study practices

NOTE: The above chart is a reformatting of the skills identified in the Ministry of Education's *Guide to the Provincial Report Card, Grades 9 – 12 : Appendix C: pages 27 to 29*.