

PURE MATH 30 COURSE OUTLINE

(September 2011)

INSTRUCTORS: Ms BA Wilkins, Mr T Moratto

REQUIRED TEXT: Pure Math 30 Workbook (Copy of extended solutions available in library.)
Pure Math 30 Practice Tests (Avaliable in the Library)

AUXILIARY TEXTS: MATHPOWER 12 (McGraw Hill), MATHEMATICS 12 (Addison-Wesley)

OBJECTIVES: The Mathematics program is designed to prepare students to use mathematics to solve problems. **Pure** mathematics emphasizes mathematical **theory** and the use of algebra and graphing to solve problems.

PREREQUISITE: Students should have achieved at least **60% in PureMath 20** in order to be successful in PureMath 30. **APPLIED MATH 30** is **NOT** accepted as a prerequisite. Students considering Nait and non technical post secondary routes may wish to take CPM133 instead of Pure Math 30.

****As per the Alberta Education Program of Studies for Pure Math 30 (2002) (http://www.education.gov.ab.ca/k_12/curriculum/bySubject/) , we will cover :**

TOPICS:	EMPHASIS(approximate)
1. Transformations	15%
2. Conics	12%
-----Exam	
3. Exponents & Log Functions	20%
Geometric Series	
-----Exam	
Term Exam I	
4. Trigonometric Functions	24%
Trigonometric Equations	
-----Exam	
5. Combinatronics	10%
6. Probability / Statistics	19%
-----Exam	
Term Exam II	

EVALUATION:

Quizzes	10%
Assignments	10%
Cumulative Chapter Exams	60%
Term Exams (there are 2 of these!)	20%

****This only comprises half your grade, the Diploma is worth 50%!****

Students must have an approved TI 83 type calculator along with **pencils, pens, highlighter** and a **separate binder/folder**. Each student is expected to do anywhere from 30 to 60 minutes of homework each class day.

REMEMBER, WE CAN ONLY HELP WITH PROBLEMS THAT WE KNOW ABOUT!!

*****Yes, there is homework in this class that must be done on a consistent basis, inorder to have the best chance of being successful in this course!*****

SUMMARY OF PureMath 20 SKILLS "Presumed Knowledge"

*indicates procedure/concept that requires mastery as it is used in PureMath 30

Solve system (point(s) of intersection) by *graphing (CALC intersect on calculator), *substitution, elimination,

linear system with no solution, one solution, infinite many sol.

word problems, value and $d = vt$ and area

3 variable system, solve algebraically and by use of MATRIX on calculator

$ax + by < c$ or linear inequality, use of True/False test required (and for Math 31)

Quad functions; $y = a(x-p)^2 + q$, Vertex (p,q) domain, range, axis of symmetry, max/min value of q when $x = p$, what a does to shape and how to find it using point on parabola and vertex, completing the square*, word problems with area, $d = vt$ or height, and max revenue. use of CALC max/min*

Quad and poly fns; solve by $eq = 0$ and then by factoring*, graphing (CALC zero*), and/or quad formula*, discriminant (types of zero's), poly fns, remainder theorem, potential zero's, factor theorem to solve

Solve*; $eq = 0$ then find the root = ZERO = x intercept. graphing(& rounding from radical to decimal) is approximate solution, algebra is exact (and use of quad formula)

Functions; composition of fns, $(f + g)(x)$ and all other operations and $(f \circ g)(x)$, inverse*(switch x and y and D and R and reflection about x axis),

Fns (Domain/Range/solve and unique characteristics with respect to the following;

poly fns; solve, leading coefficient, types of roots, inequalities.

absolute value fns, shape, eq and how to solve. rational fns, shape, eq and how to solve (extraneous roots).

rational fns shape, eq and how to solve, *vertical asymptotes (NPV) and horizontal asymptotes by looking at extreme values on graph

Reasoning; deductive vs inductive, conjectures, statements, contrapositive, counterexamples, if then statement, simple direct proofs involving SAS, SSS, ASA, Hyp Side.

Circle; chord properites, perp bisector, inscribed angles along with central angle, cyclic quads, tangent thm's, sum of angles in polygons

Trig/coordinate geom and the Circle theorem's. Verify by use of coordinate geometry formula's or SOH CAH TOA or sine/cosing laws either circle theroem's and or properties of triangles/ polygons. Shortest distance from point to line (and vertical/horizontal dist), equation of circle*, intersection of line and circle by substitution and use of quad formula or factoring.

Finance; credit card interest and TVM solver with respect to personal loans and mortgages

MATH DEPARTMENT MISSED EXAM POLICY

School policy, as listed in the handbook, states the following:

- d) If a student misses any test (other than the final) or an assignment, the following procedure will apply:
 - when the student returns, he shall produce a written communication by the parent explaining the reason for the absence.
 - if written validation is not supplied the student shall be assigned a zero on that exam, quiz or assignment.
 - if validation is supplied, the teacher shall use discretion as to whether the student should be allowed to write the exam (quiz) or do the assignment or, reassign the value of the exam (quiz) or assignment.

Clarifications:

Written communication is expected the first day upon return of the student. It should include the date of absence, be signed and include a phone number to contact the parent.

If the value of exam is being reassigned, it may be added to the midterm or final exam.

Exam (quiz) rewrites are **TBAannounced** after school. The student is expected to adhere to these days immediately upon their return. This usually happens on Thursday.

Students who miss Exam or Term Exam are expected to attend tutorial session(s) before writing exam.

Rational:

It is not fair to the other students that there is a delay in going over the exams. The exams cannot be taken up and discussed in class until everyone has written the exam.

Students can expect the after school exams to be different from those given during class.

Thank you for your cooperation.