

ACADEMIC DATE: September 1, 1998 Division: AC

SCIENCE & MATHEMATICS New Course: B: Department: SCIE

Revision of Course Information form: X

DATED: February 1993

PRECALCULUS

MATH 110

Semester Credit Subject & Course No. Descriptive Title

Summary of Revisions: Sept. 1998

F: Calendar Description

Revisions to items F, H and N

This is a one semester course for students who wish to prepare for MATH 120. Emphasis is placed on the graphing and solution of equations involving polynomial, rational, circular, trigonometric, logarithmic and exponential functions. This course is taught using a graphing calculator.

g. calculator. logarithmic and exponential functions. This course is taught using a graphing calculator.

Week/semester H: Course Pre-requisites: MATH 101 with a B- or equivalent G: Type of Instruction: Hours Per Week Per Semester

Lecture	6	Hrs.
Laboratory		Hrs.
Seminar		Hrs.
Clinical Experience		Hrs.
Field Experience		Hrs.
Practicum		Hrs.
Shop		Hrs.
Studio		Hrs.
Student Directed Learning		Hrs.

J: Course for which this is a pre-requisite: MATH 120

Class Size: 35 K: Maximum Credits

M: Transfer Credit: TOTAL 6 HOURS

Requested \_\_\_\_\_ Granted \_\_\_\_\_

Specify Course Equivalents or Unassigned Credits as Appropriate:

College Credit Transfer College Credit Non-Transfer

U.B.C. MATH 110/120=Math 111 S.F.U. Math 100(2)

U. Vic. Math 012(0) OTHER:

Handwritten signatures and names: STRAR, DEAN, REGI

Textbooks and materials to be purchased by students

(Use Bibliographic Form):

calculus = functions and graphs, 2nd edition, Longman Maths

arsn, postner, gwards, fre

so required

A graphing calculator is a

Course Objectives

Upon completion of MATH 110 the student should be able to:

FUNCTIONS

understand the concept of function and be able to determine which relations are functions by an examination of the equation and/or the graph of the relation.

on functions for which the inverse can be determined. The domain of any function and the range of any function are to be determined or for which the graph can be easily sketched.

blem'.

- extract the functional rule from a 'word problem'.

and understand the graphical implication of the

- determine if a function is odd or even and state the property.

graphs of the following functions:

- sketch the graphs of the following functions:

$y = x^3, y = |x|, y = \sqrt{x}, y = \frac{1}{x}, y = \frac{1}{x^2}, y = \sqrt{a^2 - x}$

$y = x^2,$

s of the following variations of the above functions

and the graphs of the following functions:

$y = f(x + c), y = -f(x), y = cf(x).$

$y = f(x)$

apply the above transformations to any given graph of a function.

graph of a function and be able to determine the domain and range of the function.

sketch the graph of a function and be able to determine the domain and range of the function.

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graph of a function and be able to determine the domain and range of the function.

sketch the graph of a function and be able to determine the domain and range of the function.

determine the equation of a quadratic from its graphical properties.

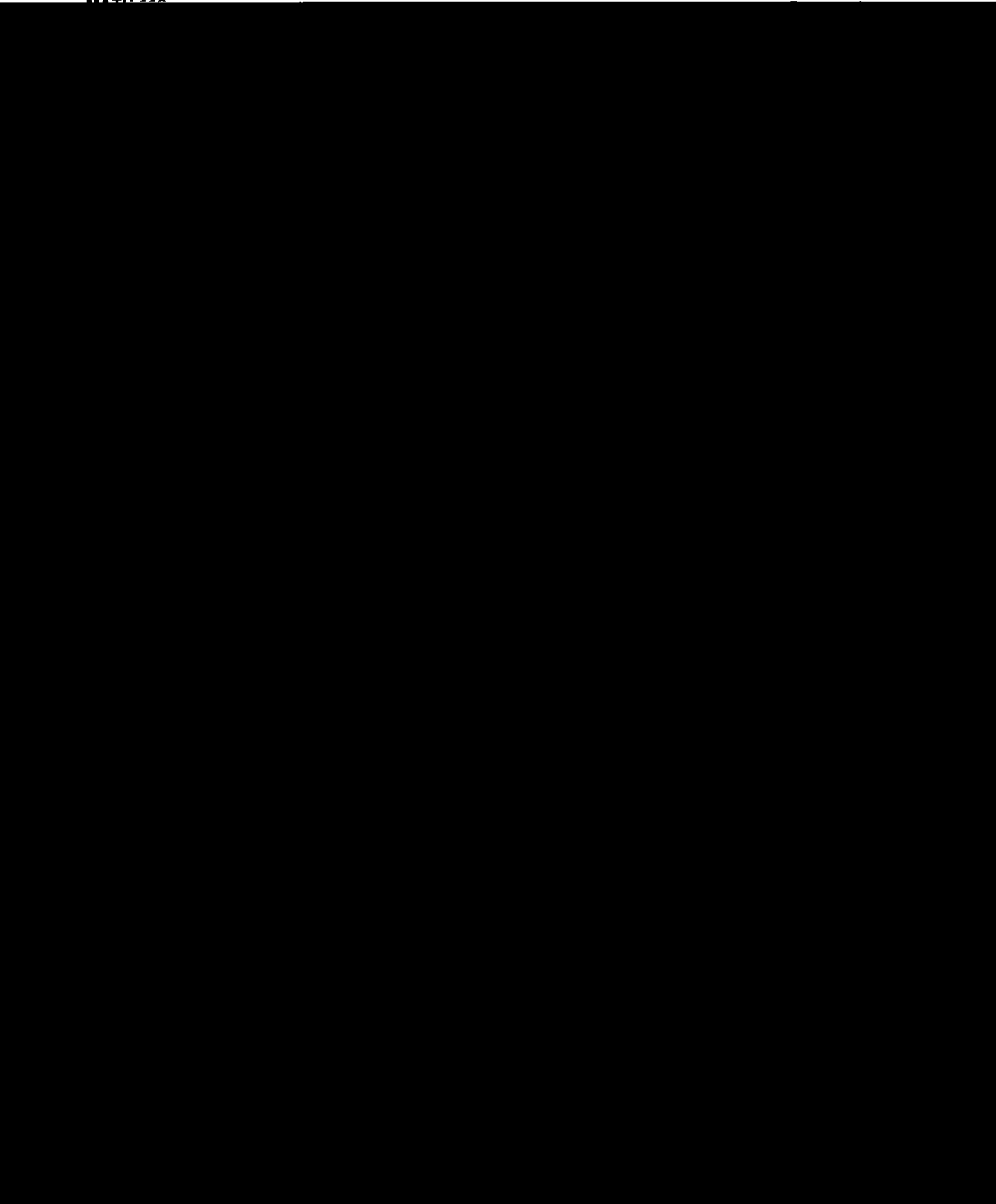
function.

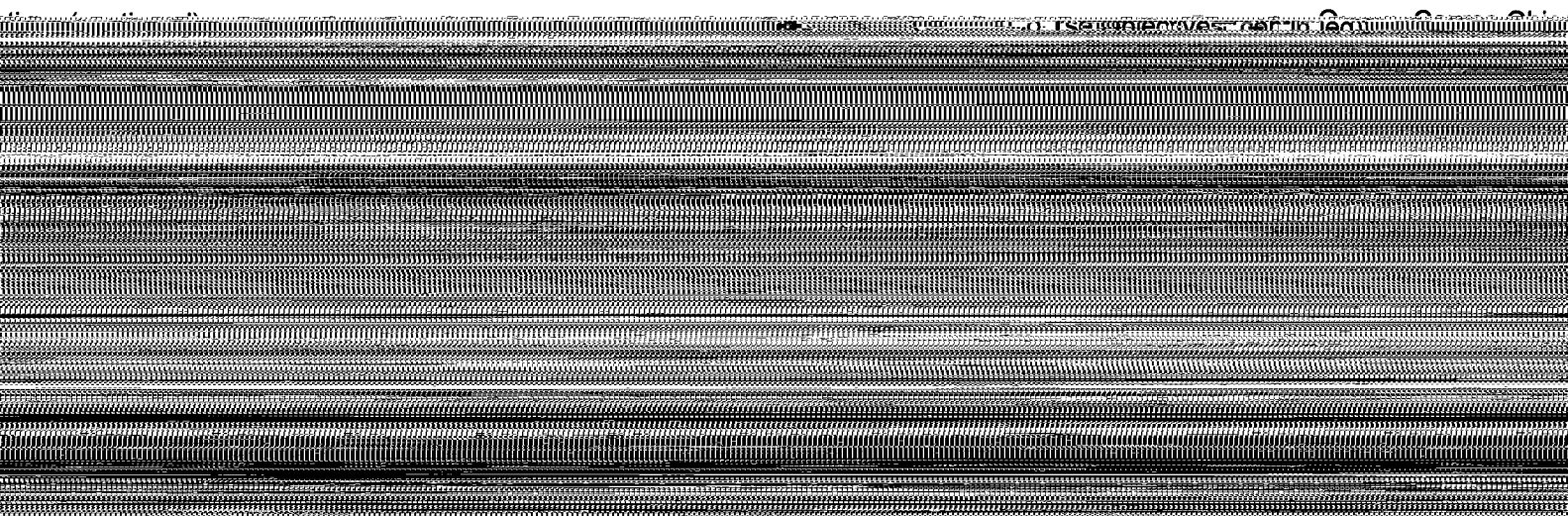
- solve maximum-minimum 'word problems' involving a quadratic function.

add, subtract, multiply and divide functions and be able to determine the domain and range of the resulting function.

functions.

resulting function.





Course Objectives (continued)

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1. FUNCTIONS

- definition
- graphing
- the quadratic function
- combining functions
- inverse functions

2. POLYNOMIAL AND RATIONAL FUNCTIONS

- division of polynomials
- the remainder theorem and factor theorem
- zeros of polynomials
- graphing polynomial functions
- graphing rational functions

3. EXPONENTIAL AND LOGARITHMIC FUNCTIONS

- the exponential functions and their graphs
- the logarithmic functions and their graphs
- properties of the logarithmic functions
- exponential and logarithmic equations
- applications

4. THE TRIGONOMETRIC FUNCTIONS

trigonometric functions of angles and real numbers  
graphs  
problems

- the trigonometric functions
- trigonometric graphs
- right triangle problems

5. TRIGONOMETRY AND APPLICATIONS

identities  
equations  
and addition formulas  
double formulas  
the product-to-sum and sum-to-product formulas  
the inverse trigonometric functions  
the Law of Sines and the Law of Cosines

5. ANALYTIC TRIGONOMETRY

- trigonometric identities
- trigonometric equations
- the addition formulas
- the multiple angle formulas

6. PARABOLAS, ELLIPSES AND HYPERBOLAS

7. SYSTEMS OF EQUATIONS

- non-linear systems of equations in two variables
- linear systems of equations in more than two variables
- partial fractions

Q. Method of Instruction:

Lectures, problem sessions and assignments

R. Course Evaluation:

In accordance with Douglas College policy, the instructor will  
provide a specific final examination date at least 4 weeks  
before the final examination. Based on some of the following:

Evaluation will be carried out  
and present a written course  
semester evaluation will be

(10 = 40%)	1	Weekly quizzes
(20 = 70%)	2	Tests
(10 = 15%)	3	Assignments
(10 = 5%)	4	Attendance
Final Examination (30%)	5	Class participation
	6	F