

A. Division: Education and Student Services Division Date: May 2, 1989

B. Department: Students Services & Developmental Education New Course:
 Revision of Course
 Dated: April 27, 1992

C. DVST 411 D. Mathematics III E. 4.5
 Subject & Course No. Descriptive Title Semester/Credits

F. Calendar Description:
 This course deals with a variety of topics in geometry, trigonometry, data analysis and algebra--including relations and functions and follows the curriculum for B.C. Schools Mathematics 11. It is designed for the student who plans to take further courses in mathematics for transfer credit. Topics include factoring cubes, biquadratics, expressions requiring grouping; rational expressions and complex fractions; quadratic equations using the quadratic formula; rational equations and formula rearrangement; radical equations; exponential equations with related bases; relations and functions, direct and inverse variation; sketching graphs of functions; graphing techniques and the determination of equations; problems and proofs using circle properties; trigonometry and the unit circle; right and oblique triangles; solutions of oblique triangles; data analysis.

Summary of Revisions:
 (Enter date and Section Revised)
 e.g. 1982-08-25
 Section C,E,F, and R.
 1992,04.27
 H J

G. Type of Instruction:	Hrs. Per Week/ Per Semester	H. Course Prerequisites: DVST410 or permission of instructor
	Lecture _____ Hrs.	I. Course Corequisites:
Laboratory _____ Hrs.	J. Courses for which this Course is a Pre-requisite: A grade of C or better required to write Math Placement Test	
Seminar _____ Hrs.		K. Maximum Class Size: 20
Clinical Experience _____ Hrs.	L. College Credit Transfer <input type="checkbox"/> College Credit Non-Transfer <input checked="" type="checkbox"/>	
Field Experience _____ Hrs.		M. Transfer Credit: Requested <input checked="" type="checkbox"/> Granted <input type="checkbox"/> (Specify Course Equivalents or Unassigned Credit as Appropriate) U.B.C. S.F.U. U. Vic. Other
Practicum _____ Hrs.	Non-Credit <input type="checkbox"/> <u>W. Cheng for G. Danekin</u>	
Shop _____ Hrs.		Course Designer(s) <u>[Signature]</u>
Studio _____ Hrs.	Divisional Dean <u>[Signature]</u>	
Student Directed Learning _____ Hrs.		Registrar <u>P.H. Owens</u>
Other (Specify) 6 Hrs.		
Instructor-directed		
Total learning 6 Hrs.		

Non-Credit
W. Cheng for G. Danekin
 Course Designer(s)
[Signature]
 Director/Chairperson
[Signature]

[Signature]
 Divisional Dean
P.H. Owens
 Registrar

Subject and Course Number

N Textbooks and Materials to be Purchased by Students (Use Bibliographic Form):

Required Text: Kelly, Brendan et al. Mathematics II : Student Text. Addison-Wesley

or suitable alternative.

Complete Form with Entries Under the Following Headings: O. Course Objectives; P. Course Content;

Q. Method of Instruction; R. Course Evaluation

O. Course Objectives

The aims of the course are for students to:

1. extend experience with algebra, geometry and trigonometry for application in subsequent courses in mathematics;
2. consolidate operations involving rational and radical expressions;
3. gain facility in converting rational exponents to radicals and vice versa;
4. extend factoring to include multi-stepped factoring - including cubes, biquadratics, polynomials of more than three terms etc;
5. extend ability to solve quadratic equations with the quadratic formula;
6. apply quadratic techniques to the solution of rational and radical equations, solve exponential equations with related bases;
7. gain experience with relations and functions: function notation, graphing techniques, determination and adjustment of equations, application of the quadratic function in applied minimum/maximum problems;
8. increase reasoning skills by solving problems using circle properties and by completing guided proofs;
9. broaden knowledge of trigonometry based on the unit circle;
10. strengthen skills as critical readers through an examination of surveys, sampling techniques, confidence levels etc.

P. Course Content

The course consists of the following topics:

1. Algebra
 - a. review of factoring up to three terms
 - b. sums and differences of cubes
 - c. factoring combinations: biquadratics, expressions of more than 3 terms
 - d. simplifying rational expressions by factoring
 - e. operations with rational expressions with polynomial denominators
 - f. simplifying complex fractions
 - g. solving quadratic equations - factoring, quadratic formula
 - h. solving rational equations - all denominator types
 - i. problems involving quadratic and/or rational equations: extraneous roots
 - j. simplification of expressions by combining like radicals
 - k. rationalizing denominators
 - l. solutions to radical equations
 - m. rational exponents and radicals
 - n. equations with rational exponents
 - o. exponential equations with related bases

2. Relations and Functions
 - a. definitions, testing for function, function notation
 - b. sketching functions
 - c. direct and inverse variation
 - d. translation, dilation and reflection of graphs
 - e. determination of equations for relations from graphs
 - f. model functions
 - g. the quadratic function
 - h. quadratic inequalities
3. Geometry
 - a. circle properties
 - b. problems using circle properties
 - c. guided proofs using circle properties
4. Trigonometry
 - a. unit circle
 - b. trig functions, reference angles
 - c. laws of sines and cosines
 - d. solutions to right and oblique triangles
 - e. area of triangles
 - f. trig equations
5. Data Analysis
 - a. frequency distribution
 - b. sampling
 - c. tables of 90% box plots
 - d. confidence levels
 - e. surveys, random samples

Q. Method of Instruction

A combination of different instructional methods will be used in order to balance instructional efficiency with individual student needs. Group instruction, individual assistance in lab tutorial or scheduled appointments and student-directed learning will be selected where appropriate and possible.

R. Course Evaluation

Evaluation will be based on examinations and assignments in accordance with college policy. Details regarding the number and weighting of individual components will be announced in a "Course Information" handout at the beginning of the semester.

Grades will be assigned as follows:

A+	92 - 100%	B+	77 - 81%	C+	62 - 66%	P	50 - 52%
A	87 - 91%	B	72 - 76%	C	57 - 61%	F	0 - 49%
A-	82 - 86%	B-	67 - 71%	C-	53 - 56%		