



**M:** Course Objectives / Learning Outcomes

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, quadratics and polynomials of more than three terms;
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. review basic knowledge of trigonometry as applied to solving triangles.

**N:** Course Content:

The course consists of the following topics:

1. Algebra
  - a. review of factoring up to three terms
  - b. factoring combinations: quadratics, 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 for graphs
  - f. model functions
  - g. the quadratic function
  - h. quadratic and circle inequalities
4. Trigonometry
  - a. primary trig ratios
  - b. laws of sines and cosines
  - c. solutions to right and oblique triangles

**O:** Methods 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.

**P.** Textbooks and Materials to be Purchased by Students

Students are required to supply a three-ring binder, paper, pen, pencil and a scientific calculator.

Main textbooks will be available on loan from the library to registered students. A course pack for this course must be purchased from the bookstore.

**Q:** Means of Assessment

Attendance is a course requirement. The final grade may be UN if more than 30% of classes are missed or if less than 70% of items for evaluation are undertaken.

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+ 95-100%	B+ 80-84%	C+ 65-69%	P 50-54%
A 90-94%	B 75-79%	C 60-64%	F < 50%
A- 85-89%	B- 70-74%	C- 55-59%	

**R:** Prior Learning Assessment and Recognition: specify whether course is open for PLAR

No

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 Course Designer(s)

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 Education Council / Curriculum Committee Representative

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 Dean / Director

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 Registrar