

COURSE IMPLEMENTATION DATE:  
COURSE REVISED IMPLEMENTATION DATE: January 2010  
COURSE TO BE REVIEWED: March 2011  
(Four years after UPAC final approval date) (MONTH YEAR)

**OFFICIAL COURSE OUTLINE INFORMATION**

Students are advised to keep course outlines in personal files for future use.  
**Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor**

FACULTY/DEPARTMENT:	<b>Upgrading &amp; University Preparation</b>	
<b>MATH 084</b>		<b>3</b>
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	<b>Introductory Algebra and Trigonometry</b>	
COURSE DESCRIPTIVE TITLE		

**CALENDAR DESCRIPTION:**

This course reviews operations with real numbers and the solution of linear equations. It introduces linear inequalities; the solution of quadratic, rational, and radical equations; operations with polynomial, rational, and radical expressions; and the graphing of equations, particularly linear equations. It also reviews basic geometry concepts and right angle trigonometry. Right angle trigonometry is used to solve practical problems.

MATH 084 is intended for students who need to gain or refresh knowledge and skills to ensure success at Intermediate Algebra and Trigonometry (MATH 085).

This course may be used as a math credit for the UUP Advanced Level certificate or the Provincial Adult Dogwood. It can also be used as preparation for some vocational, career, and technical programs. For academic programs, students must complete MATH 085.

**PREREQUISITES: MATH 072, MATH 076, or UUP department permission (assessment may be required).**  
**COREQUISITES:**

SYNONYMOUS COURSE(S)	<b>SERVICE COURSE TO:</b>
(a) Replaces: _____ (Course #)	_____
(b) Cannot take: _____ for further credit. (Course #)	_____

TOTAL HOURS PER TERM:	<b>90</b>	TRAINING DAY-BASED INSTRUCTION
<b>STRUCTURE OF HOURS:</b>		LENGTH OF COURSE: _____
Lectures: <b>60</b> Hrs		HOURS PER DAY: _____
Seminar: Hrs		
Laboratory: Hrs		
Field Experience: Hrs		
Student Directed Learning: Hrs		
Other (Specify): Individual <b>30</b> Hrs		
and small group work		

MAXIMUM ENROLLMENT:	<b>24</b>
EXPECTED FREQUENCY OF COURSE OFFERINGS:	<b>2 sections per semester</b>
<b>WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**AUTHORIZATION SIGNATURES:**

Course Designer(s): _____ CCP Math Curriculum Committee	Chairperson: _____ Greg St. Hilaire
Department Head: _____ Sue Brigden	Dean: _____ Karen Evans
UPAC Approval in Principle Date: _____	UPAC Final Approval Date: Nov. 27, 2009

**LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:**

Upon successful completion of the course, it is expected that students will be able to:

1. Write fractions as decimals and repeating decimals as fractions.
2. Add, subtract, multiply, and divide rational numbers.
3. Evaluate powers with rational bases and integer exponents.
4. Demonstrate the order of operations with rational numbers.
5. Evaluate radicals with rational radicands and distinguish between exact answers and approximate answers.
6. Solve first degree equations, in one variable, including those involving parentheses; solve formulas for a given variable when other variables are known and for a given variable; solve first degree inequalities in one variable; and solve practical problems that can be solved using a first degree equation.
7. Distinguish between monomials, binomials, trinomials, and other polynomials.
8. Apply the laws of exponents to variable expressions with integral exponents.
9. Evaluate polynomials by substitution.
10. Add, subtract, and multiply polynomials.
11. Factor polynomials by removing the largest common factor and binomials of the form  $a^2x^2 - b^2y^2$  and trinomials of the form  $x^2 + bx + c$  and introduce the form  $ax^2+bx+c$ .
12. Solve quadratic equations using the law of zero products.
13. Simplify, by factoring, rational expressions consisting of polynomial numerators and either monomial, binomial, or trinomial denominators.
14. Determine values for which a rational expression is undefined.
15. Add, subtract, multiply, and divide rational expressions.
16. Add and subtract rational expressions consisting of monomial and/or binomial denominators.
17. Solve simple rational equations and check solutions.
18. Graph a linear equation including the forms  $x = a$  and  $y = b$ .
19. Given a linear equation or its graph, determine its slope and x and y intercepts.
20. Determine the equation of a line,  $y = mx + b$ , given its graph, its slope and a point on the line, or two points on the line.
21. Solve a system of first degree equations in two unknowns by graphing, substitution, and elimination methods.
22. Use a system of equations to solve practical problems.
23. Simplify square roots with variable radicands.
24. Add, subtract, multiply, and divide square roots with variable radicands.
25. Solve equations with one square root containing a polynomial radicand and check for extraneous solutions.
26. Solve right triangles using the sine, cosine, or tangent ratios; the Pythagorean theorem; and the angle sum property of triangles.
27. Classify triangles according to angles and sides.
28. Use the properties of triangles to determine the measure of sides and angles.
29. Determine the measure and/or congruence of angles given a transversal and two parallel lines.

**METHODS:**

Methods will vary with instructor but may include lectures, group activities, individual tutoring, textbook exercises, lab activities, and assignments.

**PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):**

Credit can be awarded for this course through PLAR (Please check:)  Yes  No

**METHODS OF OBTAINING PLAR:**

Exam

**TEXTBOOKS, REFERENCES, MATERIALS:**

[Textbook selection varies by instructor. An example of texts for this course might be:]

Aufmann, Barker, Lockwood: Introductory Algebra, An Applied Approach. 7th Edition  
Geometry/Trigonometry Math 084 Coursepack  
M. Johnson. How to Solve Word Problems in Algebra

**SUPPLIES / MATERIALS:**

A scientific calculator is required.

**STUDENT EVALUATION:**

[An example of student evaluation for this course might be:]

Assignments 15 – 20%

Quizzes/tests	25 – 35%
Midterm exam	10 – 15%
Final exam	35 – 40%

### **COURSE CONTENT:**

[Course content varies by instructor. An example of course content might be:]

1. Operations with real numbers
2. Solving equations and inequalities
3. Polynomials and factoring
4. Rational expressions
5. Graphs and linear equations
6. Systems of linear equations
7. Radical expressions
8. Geometry and trigonometry