



COURSE IMPLEMENTATION DATE: _____
 COURSE REVISED IMPLEMENTATION DATE: September 2011
 COURSE TO BE REVIEWED: September 2017
(six years after UEC approval) *(month, year)*

OFFICIAL UNDERGRADUATE 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 – see course syllabus available from instructor

MATH 084	Upgrading & University Preparation	3
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS
Introductory Algebra and Trigonometry		
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 introduces function notation and applies basic geometry concepts such as volume and surface area of various 3D shapes as well as right angle trigonometry to solve practical problems.

Note: 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: One of the following: MATH 072 or MATH 076; Foundations of Mathematics and Pre-calculus 10 with at least a C; Principles of Mathematics 11, Applications of Mathematics 11, Foundations of Mathematics 11, or Pre-calculus 11 with at least a C-; or UUP department permission (assessment may be required).

COREQUISITES:

SYNONYMOUS COURSE(S):

- (a) Replaces: _____
- (b) Cross-listed with: _____
- (c) Cannot take: _____ for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: 90

STRUCTURE OF HOURS:

Lectures: 60 Hrs
 Seminar: _____ Hrs
 Laboratory: _____ Hrs
 Field experience: _____ Hrs
 Student directed learning: _____ Hrs
 Other (specify): Individual and group work: 30 Hrs

TRAINING DAY-BASED INSTRUCTION:

Length of course: _____
 Hours per day: _____

OTHER:

Maximum enrolment: 24
 Expected frequency of course offerings: 2 sections per semester
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only) Yes No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department) Yes No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: Yes No

Course designer(s): <u>Greg St. Hilaire, Anna Kuczynska, Judy Larsen</u>	Date approved: <u>March 2011</u>
Department Head: <u>Trudy Archie</u>	Date of meeting: <u>March 18, 2011</u>
Supporting area consultation (Pre-UEC)	Date approved: <u>April 2011</u>
Curriculum Committee chair: <u>Greg St. Hilaire</u>	Date approved: <u>August 30, 2011</u>
Dean/Associate VP: <u>Sue Brigden</u>	Date of meeting: <u>September 30, 2011</u>
Undergraduate Education Committee (UEC) approval	

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:

1. Review order of operations and operations on rational numbers.
2. Solve problems involving calculating volumes and surface areas of spheres, right cones, cylinders, prisms and pyramids.
3. Solve first-degree equations, in one variable, including those involving parentheses; solve formulas for a given variable and solve practical problems that involve using a first-degree equation.
4. Solve first-degree inequalities in one variable.
5. Describe and represent linear relations using words, ordered pairs, tables of values, graphs, and equations.
6. Determine slope and x and y intercepts given a linear equation or its graph.
7. Use the Cartesian coordinate system to graph linear equations including the forms $x = a$ and $y = b$.
8. Explain slopes in terms of rates of change, including slopes of parallel and perpendicular lines.
9. Determine the characteristics of the graphs of linear relations given in various forms (slope-intercept, general, or slope-point).
10. Determine the equation of a linear relation given its graph, its slope and a point on the line, or two points on the line.
11. Represent a linear function using function notation.
12. Interpret and explain the relationships among data, graphs, and situations.
13. Determine if a given relation is a function.
14. Determine the domain and range of graphs of functions.
15. Simplify expressions involving powers with integral exponents, including scientific notation.
16. Use polynomial terminology when appropriate.
17. Simplify, evaluate, and perform operations on polynomials.
18. Factor polynomials using various strategies, including the greatest common factor (GCF), special factoring, and factoring trinomials with leading coefficient equal to 1 as well as different than 1.
19. Solve quadratic equations using the Law of Zero Products.
20. Evaluate rational expressions and determine input values for which the rational expression is undefined.
21. Simplify, multiply and divide rational expressions.
22. Solve a system of first degree equations in two variables by graphing, substitution, and elimination methods.
23. Use a system of equations to solve practical problems.
24. Solve practical problems involving inequalities in two variables, including graphing the solution set in a system of coordinates.
25. Use rational exponents to represent radicals of various degrees.
26. Graph basic radical functions.
27. Simplify, evaluate, and perform basic operations on radical expressions including variable radical expressions.
28. Solve radical equations restricted to one radical.
29. Solve problems involving right triangles using the sine, cosine, or tangent ratios; the Pythagorean Theorem; special triangles; and the angle sum property of triangles.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

- Examination(s) Portfolio assessment Interview(s) Other (specify):

TEXTBOOKS, REFERENCES, MATERIALS: *[Textbook selection varies by instructor. Examples for this course might be:]*

“Developmental Mathematics for College Students”, 2nd edition, A. Tussy, R. Gustafson, Brooks/Cole

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. Real numbers
2. Geometry
3. Algebraic expressions, equations, and inequalities
4. Graphs, linear relations and functions
5. Exponents and polynomials
6. Factoring and quadratic equations
7. Rational Expressions
8. Systems of equations
9. Roots and Radicals
10. Trigonometry