



COURSE OUTLINE

**MATH 030
BASIC MATH**

6 CREDITS

PREPARED BY: Julie Hawkins, Instructor

DATE: August 11, 2020

APPROVED BY:

DATE:

APPROVED BY SENATE:

RENEWED BY SENATE:



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BASIC MATH

INSTRUCTOR: Julie Hawkins
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OFFICE HOURS: Wed. 1:00 -3:00 pm
CLASSROOM: Online via Zoom
TIME: 8:30 – 10:00 am
DATES: Monday through Friday
 Sept. 1 – Dec.11th, 2020

COURSE DESCRIPTION

Math 030 consists of pre-algebra review, introduction to real numbers and algebraic expressions, solving equations, operations on polynomials, factoring of polynomials, introductory trigonometry, rational expressions and equations, and graphs of equations. This course will prepare students for Math 051, 050 or an equivalent grade 11 algebra.

PREREQUISITES

Math 020 including fractional, decimal, percent, and exponential notation
or acceptance into College Prep.

RELATED COURSE REQUIREMENTS

It is highly recommended that all students have access to a computer or other device and Internet to do their studies. The minimum specifications for a student device are as follows:

Requirement	Windows-based PC	Apple Mac/macOS-based PC
Operating System	Windows 10	macOS X
Web Browser	Firefox, Edge or Google Chrome	Firefox, Edge or Google Chrome
RAM/Memory	4 GB	4 GB
Storage	5 GB of available space	5 GB of available space

EQUIVALENCY OR TRANSFERABILITY

None at Present

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to

- add, subtract, multiply, and divide rational numbers
- solve equations in one variable
- add, subtract, multiply, and divide polynomials
- factor polynomials
- solve quadratic equations by factoring
- use trig ratios to solve right angled triangles
- add, subtract, multiply, and divide rational expressions
- solve rational equations
- translate a problem into an equation

COURSE FORMAT

Classes this fall will all be online. All classes will be taught using Zoom. Zoom is a synchronous (in real time) virtual format that enables face-to-face approaches to teaching and learning. These classes take place at specified times. Students should plan on signing in a few minutes before class starts. Course materials will be available on the course Moodle page.

ASSESSMENTS:

Attendance & Participation

Students should be signed into class at assigned times. Attendance will be recorded. Attendance, quizzes and on-line activities will count towards 10% of the final course grade. If a class is missed, it is the student's responsibility to watch the recorded class video or contact the instructor to find out what was missed.

Assignments

There are twelve assignments, one for each chapter and one for the Trigonometry unit. Assignments can be done outside of class time and students may use notes and resources to complete; however, they must show their own work.

Assignments submitted after the due date will receive a deduction to a maximum of 15%. Assignments cannot be accepted and will receive a grade of zero after they have been returned to the class (after 3 days). If the due date is missed owing to an emergency, an alternate assignment may be given.

Tests

There are three Unit Tests worth 15% and one mid-term exam. There is one final exam covering all chapters with emphasis on the chapters after the midterm. The mid-term exam is worth 25% of the final course grade. The final exam is worth 30% of the final grade for the course.

EVALUATION:

Assignments	20%
Unit Tests	15%
Midterm Exam	25%
Participation	10%
Final Exam	30%
Total	100%

Note: The passing mark for the course is 50%, but a final course mark of at least 65% is required for admission to Math 050.

REQUIRED TEXTBOOKS AND MATERIALS

Math 030 binder available through the Yukon College Bookstore

Three-ring binder with dividers, writing paper, graph paper, ruler, pencils, scientific calculator.

SUPPLEMENTARY MATERIALS

- Student’s Solutions Manual available on-line and on Math 030 Moodle Page
- Math 030 Moodle Page
- World Wide Web Resources
- Khan Academy
- YouTube

ACADEMIC AND STUDENT CONDUCT

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

PLAGIARISM

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the University.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon University recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon University program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukonu.ca/yfnccr.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon University Academic Regulations (available on the Yukon University website). It is the student's responsibility to seek these accommodations. If a student requires an academic accommodation, he/she should contact the Learning Assistance Centre (LAC): lac@yukonu.ca.

TOPIC OUTLINE

Operations with Real Numbers

It is expected that learners will be able to:

- a) write fractions as decimals and repeating decimals as fractions
- b) add, subtract, multiply and divide rational numbers
- c) evaluate powers with rational bases and integer exponents
- d) demonstrate the order of operations with rational numbers
- e) evaluate radicals with rational radicands and distinguish between exact answers and approximate answers
- f) simplify, add, subtract, multiply and divide square roots

First Degree Equations and Inequalities

It is expected that learners will be able to:

- a) solve first degree equations, in one variable, including those involving parentheses
- b) solve formulas for a given variable when other variables are known
- c) solve formulas for a given variable
- d) solve first degree inequalities in one variable
- e) solve practical problems that can be solved using a first-degree equation

Polynomials

It is expected that learners will be able to:

- a) distinguish between monomials, binomials, trinomials and other polynomials (in one variable only)
 - b) apply the laws of exponents to variable expressions with integral exponents
 - c) evaluate polynomials by substitution
 - d) add, subtract, and multiply polynomials
 - e) factor polynomials by removing the largest common factor
 - f) factor binomials of the form $a^2x^2 - b^2y^2$ and trinomials of the form $x^2 + bx + c$
 - g) solve quadratic equations using the law of zero products
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Linear Equations

It is expected that learners will be able to:

- a) graph a linear equation including the forms $x = a$ and $y = b$
- b) given a linear equation or its graph, determine its
 - i. slope
 - ii. x- and y-intercepts
- c) determine the equation of a line, $y = mx + b$, given
 - i. its graph
 - ii. its slope and a point on the line
 - iii. two points on the line

Trigonometry

It is expected that learners will be able to:

- a) solve right triangles using one or more of
 - i. the sine ratio
 - ii. the cosine ratio
 - iii. the tangent ratio
 - iv. the Pythagorean theorem
 - v. the angle sum property of triangles
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