

APPLIED ARTS DIVISION  
MATH 030  
Credit Course  
Fall, 2018



## COURSE OUTLINE

**MATH 030**

**BASIC MATH**

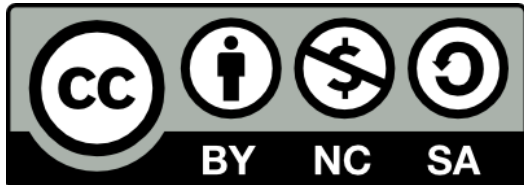
**157.5 HOURS  
6 CREDITS**

PREPARED BY: Julie Hawkins, Instructor  
APPROVED BY:

DATE: April 3, 2018  
DATE:

APPROVED BY ACADEMIC COUNCIL:

RENEWED BY ACADEMIC COUNCIL:



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## BASIC MATH

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<b>INSTRUCTOR:</b> Julie Hawkins	<b>OFFICE HOURS:</b> Wed, 3 - 4
<b>OFFICE LOCATION:</b> A2301	<b>CLASSROOM:</b> A2103
<b>E-MAIL:</b> <a href="mailto:jhawkins@yukoncollege.yk.ca">jhawkins@yukoncollege.yk.ca</a>	<b>TIME:</b> M-F 8:30-1:00 M/W/F 1:00-2:30
<b>TELEPHONE:</b> 867.456.8606	<b>DATES:</b> Sept. 5-Dec. 21, 2018

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**INSTRUCTOR:** Lisa Kanary

**OFFICE LOCATION:** TBA

**E-MAIL:** [kanary@yukoncollege.yk.ca](mailto:kanary@yukoncollege.yk.ca)

**TELEPHONE:** TBA

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### COURSE DESCRIPTION

Introductory Algebra 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 050 or an equivalent grade 11 algebra.

### PREREQUISITES

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

### EQUIVALENCY OR TRANSFERABILITY

None at Present

## LEARNING OUTCOMES

After successfully completing Math 030, the student 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

Lecture-based instruction: There will be seven one-and-a-half hour classes per week. The instructor sets the schedule and will cover the sections as outlined. Daily homework is assigned, and new topics are explored daily. Students should be prepared to put in approximately two hours of homework daily.

## ASSESSMENTS:

### Attendance & Participation

Students registered in the lecture-based courses should be in class at assigned times either remotely or in person. Attendance and participation are graded. Quizzes, homework checks and participation in class 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 find out what was missed from the instructor or a classmate.

### 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 (generally three days). If the due date is

missed owing to an emergency, an alternate assignment may be given.

### Tests

There will be one mid-term exam and 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 lecture-based course.

### EVALUATION:

Assignments	20%
Unit Tests	15%
Midterm Exam	25%
Participation/quizzes/homework	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.**

### Rewrites

A rewrite for a failing grade on an examination (less than 50%) may be permitted at the instructor's discretion. These examinations will be written no earlier than two weeks after the date of the original examination. The rewrite mark will be recorded whether it is higher or lower than the original. However, a maximum mark of 65% will be awarded.

### "No Shows"

A student who misses an examination will receive a mark of zero for that examination but may be permitted a rewrite. Exceptions may be made if a student receives prior permission from the instructor or faces an emergency. Some form of documentation of the emergency may be required.

### REQUIRED TEXTBOOKS AND MATERIALS

Math 030 binder available through the Yukon College Bookstore

### **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

### **REQUIRED SUPPLIES**

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

### **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.

### **ELECTRONIC DEVICES**

In order to be successful in classes and minimize distractions for others, cell phones, iPods and other electronic devices must be turned off while students are in class. In an emergency situation, the instructor may give a student permission to use a cell phone.

### **APPROPRIATE LANGUAGE**

In all areas of the college environment students are responsible to show respect for others; swearing, or language that is discriminatory or derogatory in relation to race, sex, ethnic background, religious beliefs, age and physical condition is not appropriate.

### **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 College.

### YUKON FIRST NATIONS CORE COMPETENCY

Yukon College 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 College program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see [www.yukoncollege.yk.ca/yfnccr](http://www.yukoncollege.yk.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 College Academic Regulations (available on the Yukon College 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@yukoncollege.yk.ca](mailto:lac@yukoncollege.yk.ca).

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### 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

### 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