School of Academic & Skill Development

Math 030
Basic College Mathematics
202201

6 Credits

Course Outline

INSTRUCTOR	Julie Hawkins	**OFFICE HOURS**	Wednesdays 1 – 3pm
OFFICE	A2301	**CLASSROOM**	A2603
E-MAIL	jhawkins@yukonu.ca	**CLASS TIME**	8:30 – 10:30 am
TELEPHONE	867-456-8606	**CRN**	20035

Liberal Arts office: Ayamdigut Campus A2501, liberalarts@yukonu.ca, 867-668-8770

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.

COURSE REQUIREMENTS

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

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

Delivery format

- This course is delivered in a blended format. Students are expected to attend face-to-face sessions on-campus or may attend through Zoom. Students will complete an assortment of synchronous and/or asynchronous online activities. All classes will be taught using a lecture format and all lectures will be recorded. Zoom is a synchronous (in real time) virtual format that enables face-to-face approaches to teaching and learning and allows the recording of the lectures. These classes take place at specified times. Students should plan on arriving or signing in a few minutes before class starts. Course materials will be available on the course Moodle page for students to access and print.

Workload

Students must attend all classes either in person or through Zoom. Instructional hours for this course is 1½hrs per day five days a week for a total of 7.5hrs/week. It is expected that students will need to apply 1 – 2 hours per day of homework. It is important to note that the time required for successful course completion will vary by individual.

EVALUATION

Attendance & Participation

Students should either attend in person or be signed into class at assigned times. Attendance will be recorded. Attendance 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 - 5 days). If the due date is missed owing to an emergency, an alternate assignment may be given.

Quizzes and Tests

There are two unit tests and several quizzes throughout the course worth 15% of the overall grade. If a test or quiz is missed, it is the student's responsibility to inform the instructor and schedule a date and time to complete it within one week of assigned date.

Exam

The mid-term exam is worth 25% of the final course grade and covers chapters 1 - 4. There is one final exam covering all chapters with emphasis on the chapters after the midterm. The final exam is worth 30% of the final grade for the course.

Attendance and Participation	10 %
Assignments	20 %
Quizzes and Tests	15 %
Midterm Exam	25 %
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 051.

TEXTBOOKS & LEARNING 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

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

COURSE WITHDRAWAL INFORMATION

Students may officially withdraw from a course or program without academic penalty up until two-thirds of the course contact hours have been completed. Specific withdrawal dates vary, and students should become familiar with the withdrawal dates of their program. See withdrawal information at www.yukonu.ca/admissions/money-matters

Refer to the YukonU website for important dates: www.yukonu.ca/admissions/important-dates

Refunds may be available. See the Refund policy and procedures at www.yukonu.ca/admissions/money-matters

ACADEMIC INTEGRITY

Students are expected to contribute toward a positive and supportive environment and are required to conduct themselves in a responsible manner. Academic misconduct includes all forms of academic dishonesty such as cheating, plagiarism, fabrication, fraud, deceit, using the work of others without their permission, aiding other students in committing academic offences, misrepresenting academic assignments prepared by others as one's own, or any other forms of academic dishonesty including falsification of any information on any Yukon University document.

Please refer to Academic Regulations & Procedures (updated bi-annually) for further details about academic standing, and student rights and responsibilities: www.yukonu.ca/policies/academic-regulations

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 at www.yukonu.ca/policies/academic-regulations

It is the student's responsibility to seek these accommodations by contacting the Learning Assistance Centre (LAC): LearningAssistanceCentre@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

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

Trigonometry

It is expected that learners will be able to:

a) solve right triangles using one or more of
    a. the sine ratio
    b. the cosine ratio
    c. the tangent ratio
    d. the Pythagorean theorem
    e. the angle sum property of triangles
