YukonCollege

COURSE OUTLINE

MATH 020

MATHEMATICS FUNDAMENTALS

112.5 HOURS
3 CREDITS

PREPARED BY: Gabriel Ellis, Instructor   DATE: April 2, 2018
APPROVED BY: DATE:

APPROVED BY ACADEMIC COUNCIL:

RENEWED BY ACADEMIC COUNCIL:

The Course Outline Template is approved by the Academic Council on June 20, 2018

MATHEMATICS FUNDAMENTALS

INSTRUCTOR: Gabriel Ellis	**OFFICE HOURS:** 8:30—10:00 a.m.
OFFICE LOCATION: A2314	**CLASSROOM:** A2315
E-MAIL: gellis@yukoncollege.yk.ca	**TIME:** 8:30-10 00 a.m.
TELEPHONE: 867.456.8642	**DATES:** Monday thru Friday

COURSE DESCRIPTION

Basic Mathematics focuses on solidifying skills with whole numbers, fractions, decimals, ratio and proportion, percent, data, graphs, and statistics, measurement systems, geometry, and introducing concepts involving real numbers and algebra. This course will prepare students for MATH 030 or an equivalent introductory algebra course

PREREQUISITES

Admission to College Access Programs

EQUIVALENCY OR TRANSFERABILITY

Not applicable.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:
- perform basic computations with whole numbers
- demonstrate effective problem-solving strategies
- recognize and use mathematical terminology
- know how to perform basic computations using a calculator
- demonstrate effective estimation skills

COURSE FORMAT

Lecture-based instruction: There will be five 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

It is the student's responsibility to attend all classes either remotely or in person. Students who miss classes are responsible for any missed work.

20% of the final mark for this course is based on attendance, periodic homework checks and quizzes.

Assignments

There are two assignments scheduled throughout the course. Each assignment will be given a due date. 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.
20% of the final mark for this course is based on chapter assignments.

Tests
There is a **unit test after units 1, 3 and 4** in the text and after the geometry module. There is no midterm or final exam. 60% of the final mark for this course is based on unit tests.

> **Note:** If a scheduled test is missed, students will have up to **one week** to re-schedule the test and will be subject to a **5% penalty**. If the test has not been written within the one week penalty period, the student will receive a mark of zero for the test unless prior arrangements have been made with the instructor.

EVALUATION:

Homework/Attendance/Quizzes	20%
2 Assignments	20%
3 Unit Tests	60%
Total	100%

The passing mark for the course is 50%, but a final course mark of at least 65% is necessary to go on to MATH 030.

REQUIRED TEXTBOOKS AND MATERIALS

Arithmetic – NROC/ Lippman - OpenTextBookStore Catalog. (n.d.). Retrieved from http://www.opentextbookstore.com/arithmetic/book.pdf

SUPPLEMENTARY MATERIALS

(n.d.). Retrieved from https://www.myopenmath.com/course/course.php?cid=807&folder=0

Required Supplies
Three-ring binder with dividers, writing paper, graph paper, ruler, pencils, scientific calculator,geometry set.

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 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.

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.

TOPIC OUTLINE

MATH 020 covers the Learning Outcomes for Mathematics: Intermediate Level –
Developmental Mathematics using the five units in the text: Arithmetic for
College Students and an additional Yukon College Geometry Module.

Unit 1: Whole Numbers
- Place Value, Rounding, and Comparing Whole Numbers
- Adding and Subtracting Whole Numbers
- Multiplying Whole Numbers and Area
- Dividing Whole Numbers and Applications
- Exponents, Roots, and Order of Operations
- Basic Statistics
- Areas and Perimeters of Quadrilaterals
- Properties of Numbers

Unit 2: Fractions
- Fractions and Mixed Numbers
- Proper and Improper Fractions
- Simplifying Fractions
- Factors and Primes
- Comparing Fractions
- Multiplying Fractions and Mixed Numbers
- Dividing Fractions and Mixed Numbers
- Adding and Subtracting Fractions and Mixed Numbers with Like Denominators
- Adding and Subtracting Fractions and Mixed Numbers with Unlike Denominators

Unit 3: Decimal Notation
- Decimals and Fractions
- Ordering and Rounding Decimals
- Adding and Subtracting Decimals
- Multiplying and Dividing Decimals
- Estimation with Decimals
- Convert Percents, Decimals, and Fractions

- Finding a Percent of a Whole
- Solving Percent Problems
- Solving Percent Applications
- Circle Graphs (Pie Charts)

Unit 4: Ratio and Proportion
- Introduction to Ratios and Rates
- Proportions
- Volumes of Solids
- The Metric System
- Using Metric Conversions to Solve Problems
- Time and Temperature

Unit 5: Integers and Real Numbers
- Introduction to integers
- Rational and Real Numbers
- Adding and Subtracting Integers and Real Numbers
- Multiplying and Dividing Real Numbers
- Order of Operations with Real Numbers
- Intro to Variables and Expressions
- Associative, Commutative, and Distributive Properties

Geometry Module (Math 030 Module)
- Types of Lines
- Identifying, Measuring and Drawing Angles
- Identifying Types of Triangles
- The Pythagorean Theorem
- Constructions using a protractor, compass and ruler
- Using formulas to find volume and surface area of cuboids