YukonCollege

COURSE OUTLINE

MATH 060

Advanced Algebra and Trigonometry

100 HOURS

3 CREDITS

PREPARED BY: Tom McBee   DATE: January 4, 2016

APPROVED BY: DATE:

APPROVED BY ACADEMIC COUNCIL: 1991

RENEWED BY ACADEMIC COUNCIL:

Advanced Algebra and Trigonometry

INSTRUCTOR:	Tom McBee
OFFICE HOURS:	TBA
OFFICE LOCATION:	Room A2318, Ayamdigut Campus
TELEPHONE/E-MAIL:	(867) 668-8831/tmcbee@yukoncollege.yk.ca
FAX:	(867) 668-8828
COURSE OFFERING	January 6 – April 27, 2016
DAYS & TIMES:	Monday to Friday 8:30 a.m. to 10:00 p.m.

TUTORIAL HOURS:

Monday	10:00 am – 3:00 pm
Tuesday	10:00 am – 7:30 pm
Wednesday	10:00 am – 7:30 pm
Thursday	10:00 am – 7:30 pm
Friday	10:00 am – 3:00 pm

TUTORIAL LOCATION: Room A2311 (Drop-In)

COURSE DESCRIPTION

Advanced Algebra and Trigonometry reviews basic concepts of   algebra and teaches equations, inequalities, problem solving; relations, functions and transformations; linear, quadratic, and polynomial functions; exponential and logarithmic functions; trigonometric or circular functions; trigonometric identities; inverse functions and equations, triangles; systems of equations and inequalities, conic sections; polynomial and rational functions; sequences and series.

LEARNING OUTCOMES:

1. To prepare students for university-level mathematics courses and appropriate vocational, technical, and career programs which require Pre-Calculus 12 or Principles of Mathematics 12.

2. To prepare students who are proceeding to calculus courses or to technical/vocational areas requiring trigonometry.

3. To prepare students entering business or social science programs.

DELIVERY METHOD/FORMAT:

Lecture-based instruction: There will be five one-and-a-half hour classes per week. Course content will be covered primarily through lectures with the aid of a textbook. The instructor sets the schedule.

PREREQUISITES:

Yukon College Math 050, or Principles of Mathematics 11, or the equivalent (either one passed at 65%); or the passing of a challenge test for Math 050 with at least 55%.

COURSE REQUIREMENTS/EVALUATION:

Attendance and Participation

It is the student's responsibility to attend classes. Students who miss classes are responsible for any work missed.

Assignments

There are ten assignments to be completed. The introductory chapter each has two assignments owing to the length of the chapter. Late assignments will be docked 10%; however, assignments cannot be accepted after they have been returned to the class. A student planning to be away on the due date must submit the assignment prior to leaving. If the due date is missed owing to an emergency, an alternate assignment may be given.

Examinations:

There are three exams covering the contents. The third exam is a cumulative final exam.

Evaluation: Exam 1: Chapter 1& 2   23 %
                 Exam 2: Chapters 3, 4 & 5   23 %
                 Exam 3: Review of chapters 1 to 5
                              With emphasis on Chapters 6, 7, 9, 10 & 11   34 %
                 10 assignments: 20 %
                 Total: 100 %

Note: Each exam must be written to receive credit for the course

Yukon College uses a letter grade system and calculates weighted grade point averages (GPA) on a 4.0 scale. Following are equivalents of the letter grades:

LETTER GRADE	PERCENTAGE EQUIVALENT	GRADE POINT
A+	95 – 100	4.0
A	86 – 94	4.0
A-	80 – 85	3.7
B+	75 – 79	3.5
B	70 – 74	3.0
B-	65 – 69	2.7
C+	62 – 64	2.5
C	58 – 61	2.0
C-	55 – 57	1.7
D	50 – 54	1.0
F	under 50	0.0

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 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.

Plagiarism

Plagiarism involves representing the words of someone else as your own, without citing the source from which the material is taken. If the words of others are directly quoted or paraphrased, they must be documented according to standard procedures (APA). The resubmission of a paper for which you have previously received credit is considered a form of plagiarism.
Plagiarism is academic dishonesty, a serious academic offence, and will result in you receiving a mark of zero (F) on the assignment or the course. In certain cases, it can also result in dismissal from the college. And do not underestimate the impact such a situation will have on your reputation.

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 or pager.

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.

STUDENTS WITH DISABILITIES OR CHRONIC CONDITIONS:

Reasonable accommodations are available for students with a documented disability or chronic condition. It is the student's responsibility to seek these accommodations. If a student has a disability or chronic condition and may need accommodation to fully participate in this class, he/she should contact the Learning Assistance Centre (LAC) at (867) 668-8785 or lassist@yukoncollege.yk.ca.

REQUIRED TEXTBOOKS/MATERIALS

Stewart, James; Redlin, Lothar; and Watson, Saleem. (2015). Precalculus*:*
    Mathematics for Calculus (7th ed), Brooks/Cole, CENGAGE Learning; Canada.
Student Solutions Manual
Writing paper, graph paper, ruler, pencils, and scientific calculator**. Note that graphing calculators are not permitted during exams in this course or Math 100.**

EQUIVALENCY/TRANSFERABILITY:

Yukon College Math 060 is articulated as Provincial Algebraic Mathematics in the Adult Basic Education system (ABE) in British Columbia and Yukon. For more information see page 38 of the 2015-2016 edition of the A.B.E. in B.C. Articulation Handbook http://www.bctransferguide.ca/docs/ABE_Artic_Guide_15-16%20Final.pdf Or http://www.bctransferguide.ca/program/abe/

ABE Provincial Algebraic Mathematics is now considered as Equivalent to Pre-Calculus 12 by the British Columbia Ministry of Education. For more information see page 22 of the A.B.E. Articulation Handbook or search "ABE Provincial Algebraic Mathematics" at http://www.bced.gov.bc.ca/datacollections/course_registry_web_search/simple-search.php

TOPIC OUTLINE

Math 060 covers the Learning Outcomes for Mathematics: Provincial Level—Algebra and Trigonometry set on pages 134 – 139 of A.B.E. in B.C. 2015-2016 Articulation Handbook

1. Review of basic concepts of algebra
    a. the real-number system
    b. exponents and radicals
    c. algebraic expressions
    d. fractional expressions
    e. equations
    f. modeling with equations
    g. inequalities
    h. coordinate geometry
    i. solving equations and inequalities graphically
    j. lines

2. Functions
    a. definition of a function
    b. graphs of functions
    c. variation
    d. transformations of functions
    e. extreme values of functions
    f. combining functions
    g. one-to-one functions and their inverses

3. Polynomial and rational functions
    a. polynomial functions and their graphs
    b. dividing polynomials
    c. real zeros of polynomials
    d. complex numbers
    e. complex zeros and the fundamental theorem of algebra
    f. rational functions

4. Exponential and logarithmic functions
    a. exponential functions
    b. logarithmic functions
    c. laws of logarithms
    d. exponential and logarithmic equations
    e. modeling with exponential and logarithmic functions

5. Trigonometric functions of real numbers
   a. the unit circle
   b. trigonometric functions of real numbers
   c. trigonometric graphs of sine and cosine, and tangent functions

6. Trigonometric functions of angles
   a. angle measure
   b. trigonometry of right triangles
   c. trigonometric functions of angles
   d. the law of sines
   e. the law of cosines

7. Analytic trigonometry
   a. trigonometric identities
   b. addition and subtraction formulas
   c. double-angle formulas
   d. inverse trigonometric functions
   e. trigonometric equations

8. Systems of equations
   a. methods for solving systems of equations
   b. systems of linear equations in two variables
   c. systems of linear equations in several variables
   d. systems of inequalities

9. Topics in analytic geometry
   a. parabolas
   b. ellipses
   c. hyperbolas

10. Sequences and series
   a. sequences and summation notation
   b. arithmetic sequences
   c. geometric sequences