Course Outline

Spring 2023

MATH 30-2A, Mathematics 30-2

5 credits, 6 hours lecture

Topics covered include properties of angles and triangles; oblique triangle trigonometry; systems of linear equations; operations (addition, subtraction, multiplication, division) on rational expressions; solve rational equations; logarithms; numerical and logical reasoning Extensions to the core materials include a Business/Arts Prep module focusing on linear inequalities; probability; permutations, combinations and the fundamental counting principle and/or a Trades prep module which explores measurement involving triangles, quadrilaterals and regular polygons, including transformations on 2D shapes or 3D objects.
Alberta Education Course Equivalency: Math 30-2

Prerequisites: Math 20-2 or Math 20-1 or permission from the Program Chair.

Instructor

Tracy Boger
Email: Tracy.Boger@Keyano.ca

Office Hours

Available by appointment

Hours of Instruction & Location

Day	Time	Location
Monday	9:00 AM – 11:50 AM	CC283
Tuesday	9:00 AM – 11:50 AM	CC283
Wednesday	9:00 AM – 11:50 AM	CC283
Thursday	9:00 AM – 11:50 AM	CC283
Friday	9:00 AM – 11:50 AM	CC283

Required Resources

Principles of Mathematics 12: Alberta edition. ISBN: 978-0-17-652700-6
Authors: Cathy Canvan-McGrath, Serge Desroches, Hugh MacDonald, et. al.

Graphing Calculator: TI-83plus or TI-84, *Available at Staples (online or in store)*

Note: A digital version of the textbook can be purchased through the Keyano college bookstore for a significantly reduced price.

Course Outcomes

Upon successful completion of the course, the student shall be able to:

Set Theory
• Demonstrate an understanding of the type of sets, set notation, relationship between sets, intersection and union of two sets
• Solve problems that involve the application of set theory.

Counting Methods
• Solve problems that involve the Fundamental Counting Principle.
• Solve problems that involve permutations.
• Solve problems that involve combinations.

Rational Expressions and Equations
• Determine equivalent forms of rational expressions (limited to numerators and denominators that are monomials and binomials).
• Perform operations on rational expressions (limited to numerators and denominators that are monomials and binomials).
• Solve problems that involve rational equations (limited to numerators and denominators that are monomials and binomials).

Polynomial Functions
• Represent data, using polynomial functions (of degree ≤ 3), to solve problems.
• Demonstrate an understanding of the terminology and properties related to polynomial functions
• Analyzing graphs of polynomial functions
• Demonstrate an understanding of the characteristics of polynomial functions using its equation, match equations to their graphs

Exponential and Logarithmic Functions
• Solve problems that involve exponential equations.
• Represent data, using exponential and logarithmic functions, to solve problems.
• Demonstrate an understanding of logarithms and the laws of logarithms
• Solve problems that involve exponential equations.
• Represent data, using exponential and logarithmic functions, to solve problems.

Sinusoidal Functions
• Demonstrate an understanding of angles in standard position, expressed in degrees and radians
• Demonstrate an understanding of the characteristics of a sinusoidal function by analyzing its graph , describing the characteristics of a sinusoidal function by analyzing its equation , match equations to their graphs , graph data and determine the best sinusoidal function to approximate it , interpret a graph , solve related problems

Probability
• Demonstrate an understanding of odds and relate them to probability
• Solve problems that involve counting Methods
• Solve problems that involve the probability of mutually exclusive and non- mutually exclusive events
• Solve problems that involve independent event

Evaluation

Daily Textbook Exercises	5%
Assignments	15%
Quizzes	12%
Exams	30%
Final Exam	38%
Total	100%

Grading System

The minimum pre-requisite for progression is 1.7 (refer to grading system below)

Descriptor	4.0 Scale	Percent
	4.0	96 – 100
Excellent	4.0	90 – 95
	3.7	85 – 89
	3.3	81 – 84
Good	3.0	77 – 80
	2.7	73 – 76
	2.3	69 – 72
Satisfactory	2.0	65 – 68
Minimum Prerequisite	1.7	60 – 64
Poor	1.3	55 – 59
Minimum Pass	1.0	50 – 54
Failure	0.0	0 – 49

Proposed Schedule

A detailed schedule with proposed dates for all exams, assignments quizzes is available here:

https://tinyurl.com/49b94k5z

Please Note:

The date and time allotted to each topic are subject to change.

Schedule of Topics

Topics	Proposed Dates
Set Theory	May 8, 9, 10, 12
Counting Methods	May 10, 11, 15, 16,
Probability	May 17, 18, 19,
Polynomial Functions	May 23, 24, 25
Sinusoidal Functions	May 25, 26, 30
Exponential Functions	May 31, June 1, 2
Log Functions	June 2, 5, 6, 7
Rational Expressions	June 8, 9, 12, 13, 14
Review & final assignment work period	June 15, 16

Performance Requirements and Student Services

Student Responsibilities

As a student, it is your responsibility to contact the Office of the Registrar to complete the required forms, including the Withdrawal/Drop Form. All forms are available on the College website. Please refer to the important dates listed in the Academic Schedule in the Keyano College credit calendar and/or on the College website. It is the responsibility of each student to be aware of the guidelines outlined in the Student and Academic Policies.

Student Attendance

Class attendance is helpful for two reasons: First, class attendance maximizes a student's learning experience. Second, attending class is an excellent way to keep informed of matters relating to the course administration (e.g., the timing of assignments and exams). Ultimately, you are responsible for your learning and performance in this course. It is the responsibility of each student to be prepared for all classes. Absent students are responsible for the material covered in those classes, and students must ensure they are ready for their next class, including completing any missed assignments and notes.

Course Evaluation

Midterm exams and term work is to be completed at the time/date indicated in your course syllabus. It is the expectation of the College that students make every reasonable effort to complete all course evaluation, including, quizzes, midterms, and exams, as scheduled. In the event of an emergency, rescheduling of exams and/or extensions are only provided at the discretion of the course instructor. Students should contact the instructor as soon as they are able, to notify them of missing an evaluative component. Instructors will use discretion in deciding whether circumstances justify granting a reschedule and/or extension.

Regular term quizzes, midterms, and exams are not eligible for deferral and/or date extension accommodations. Students with accommodations, please refer to Accessibility Services.

Final Exams are subject to deferral processes, please refer to the current Keyano College Credit Calendar.

Academic Integrity & Misconduct

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. It is expected that students at Keyano College will adhere to these ethical values in all activities related to learning, teaching, research, and service. Any action that contravenes this standard, including misrepresentation, falsification, or deception, undermines the intention and worth of scholarly work and violates the fundamental academic rights of members of our community.

Academic dishonesty takes many forms:

- Plagiarism or the submission of another person's work as their own,
- The use of unauthorized aids in assignments or examinations (cheating),
- Using Artificial Intelligence (AI) to complete coursework (without instructor approval),
- Collusion or the unauthorized collaboration with others in preparing work,
- The deliberate misrepresentation of qualifications,
- The willful distortion of results or data,
- Substitution in an examination by another person,
- Submitting unchanged work for another assignment, and
- Breach of confidentiality.

In all academic work, the ideas and contributions of others must be appropriately acknowledged and work that is presented as original must be, in fact, original. Using an AI-content generator (such as ChatGPT) to complete coursework without proper attribution or authorization is a form of academic dishonesty. If you are unsure about whether something may be plagiarism or academic dishonesty, please contact your instructor to discuss the issue.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the *Student & Academic Policies* section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights, Academic Integrity, and Non-Academic Misconduct Policies.

To ensure your understanding of plagiarism, you may be required to complete the online Understanding Plagiarism tutorial and submit the certificate of completion.

Online Learning

Technology and internet connectivity will impact your online learning experience. You may be required to watch online videos, take online quizzes, or participate in live online classes. Live/virtual courses will be hosted in Microsoft Teams or Zoom. For all course delivery types, you will access your course resources on Keyano's learning management system: Moodle (iLearn). Login in using your Keyano username and password. Keyano College operates in a Windows-based environment and having access to the correct tools for online learning is essential.

Internet Speed

Minimum download and upload speeds of 10 Mbps. Recommended download speeds of 25 Mbps and upload speeds of 10 Mbps (if you are sharing your internet at home). You can check your internet speed with Speedtest by Ookla.

Computer System Requirements

Keyano College software are Windows based.

Minimum Requirements and Recommended Upgrades for Windows (preferred system) and Apple devices These minimum standards are required for a Windows computer/laptop (OS 10 or 11) and a MacIntosh (OS 10.14 or above.
1. Windows 10 Operating System or above 2. 4GB of RAM. Recommended upgrade to 8GB of RAM. 3. 10GB+ available hard drive storage space. Note installing Microsoft Office 365 requires 3GB of available hard drive space. a. Install the Microsoft Office 365 suite (~3GB) ***** 4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in. However, a headset or earbuds with a microphone is also recommended. 5. Windows has built-in anti-virus/malware software. It is essential to install system updates to keep your device secured regularly. *****Microsoft Office 365 is free to Keyano students.
Tablets, iPads, and Chromebooks are **not** recommended: they may not be compatible with the testing lockdown browsers and Microsoft Office 365.

Computer Software

Students have access to Microsoft Office 365 and Read & Write for free using Keyano credentials.

See Recommended Technology for more information.

Recording of Lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not share, distribute, or publish any of the lectures or course materials; this includes any recordings, slides, instructor notes, etc., on any platform. Thus, no student is allowed to share, distribute, publish, or sell course-related content without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The Academic Integrity Policy provides additional information on Keyano College's expectations from students as members of the intellectual community.

ITS Helpdesk

If you have issues with your student account, you can contact the ITS Helpdesk by emailing its.helpdesk@keyano.ca or calling 780-791-4965.

Specialized Supports

Keyano College is committed to Keyano students and their academic success. There is a variety of student support available at Keyano. All student services are available during Keyano business hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. The College is closed on statutory holidays. If you require support outside of regular business hours, please inform the support service team, and they will do their best to accommodate your needs.

Accessibility Services provides accommodations for students living with disabilities. Students with documented disabilities or who suspect a disability can meet with an Access Strategist to discuss their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact the department to request accommodations for the following semester. Please note that requesting accommodations is a process and requires time to arrange. Contact the department as soon as you know you may require accommodations. For accessibility supports and disability-based funding, please book an appointment by emailing us at: accessibility.services@keyano.ca.

Accessibility Services also provides individual and group learning strategy instruction for all students and technology training and support to enhance learning. You can meet with an Access Strategist to learn studying and test-taking strategies. In addition, you can schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing: accessibility.services@keyano.ca

Wellness Services offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators provide a safe and confidential environment for you to seek help with personal concerns. Our Wellness Navigator offers support with basic needs such as housing, financial and nutritional support, and outside referrals when needed. Wellness Services welcomes students to participate in group sessions that address topics including mindfulness and test anxiety throughout the academic year. Individual appointments can be made by emailing wellness.services@keyano.ca.

Library Services provides students with research, information, and educational technology supports as they engage in their studies. Library staff are available to help you online and in person throughout the semester. Librarians offer individual and small group consultations booked using the online Book A Librarian calendar. The library also provides virtual research and subject guides to help you with your studies. Find the guide that supports your course-related research by viewing the complete list of online Subject Guides. To start your research and access citation guides (APA, MLA, Chicago, or IEEE), visit the Research Help page. The library's collections (including print and online materials) are searchable using OneSearch. The library offers a Loanable Technology collection to support students accessing and using technology. For an up-to-date list of technology available for borrowing, visit the library's Loanable Technology webpage. For a detailed list of library resources and services, go to www.keyano.ca/library. For all inquiries, please email askthelibrary@keyano.ca or chat with us online.

The **Academic Success Centre** at Keyano College (CC-119) provides free academic support services to registered students, such as tutoring, writing support, facilitated study groups, workshops, and study space. Academic Content Specialists are available in Mathematics, Science, Trades, Power Engineering, Upgrading/College Prep, Human Services, English, Humanities, and more. Students are encouraged to visit the Academic Success Centre to discuss study strategies and academic concerns.

Specialists in the Academic Success Centre also work with students to develop academic success plans, time management skills, study strategies, and homework plans. For additional information, please email Academic.Success@keyano.ca.

Authorization

This course outline has been reviewed and approved by the Program Chair.

[First Name, Last Name], Instructor

[First Name, Last Name], Chair Date Authorized

[First Name, Last Name], Dean Date Authorized

Signed copies to be delivered to:
Instructor