

MATHEMATICS 31 COURSE OUTLINE

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Google Classroom Join Code: z4r2jrsv

The Math 31 course is designed to bridge the gap between the Math 10–20–30 program and the calculus courses offered by post-secondary institutions. The course emphasizes the theoretical and practical developments of topics in the algebra of functions, trigonometry, differential calculus and integral calculus.

The specific purposes of the Math 31 program are:

- To develop an understanding of the algebra of functions and transformations, together with their graphs and to apply these understandings in different areas of mathematics.
- To develop a fluency in algebraic computations involving rational expressions, inequalities, absolute values, and trigonometric functions.
- To introduce the principal concepts and methods of differential and integral calculus
- To develop skills in problem solving and reasoning, using calculus concepts and procedures
- To apply the methods of calculus to various simple applications in the physical, biological and social sciences.

COURSE TOPICS:

- 1) Limits & Rates of Change
- 2) Derivatives
- 3) Applications of Derivatives – Related Rates/Extreme Values
- 4) Curve Sketching
- 5) Derivatives of Trigonometric, Exponential, and Logarithmic Functions
- 6) Integration – Methods/Differential Equations/Volumes of Revolution

MATERIALS:

For Math 31, the following is required:

- π Primary Textual Resource: CALCULUS: A First Course by Stewart et al
- π Supplementary Resource: Calculus and Pizza – A Cookbook for the Hungry Mind
- π Binder/Paper, Graph Paper, Notebook
- π Pencils, Pens, Erasers, Ruler & Protractor
- π Scientific Calculator OR Graphing Calculator

Mathematics 31
Program Timeline (Tentative)

TOPICS:

Introduction/Course Outline/Classroom Procedures	(1 class)
REVIEW & PREVIEW	(1 class)
UNIT 1: Limits & Rates of Change	(10 classes)
UNIT 2: Derivatives	(13 classes)
UNITS 3 & 4: Applications of Derivatives/Extreme Values	(15 classes)
** MIDTERM EXAM ** (2 classes)	
UNIT 5: Curve Sketching	(8 classes)
UNIT 6: Derivatives of Trigonometric, Exponential & Logarithmic Functions	(14 classes)
UNIT 7: Integration, Differential Equations & Applications	(15 classes)
** FINAL REVIEW ** (6 classes)	

EVALUATION:

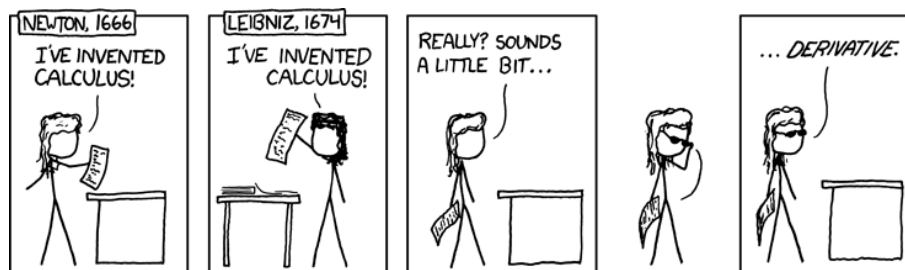
The following categories will be used to evaluate student progress and achievement throughout the course:

TERM MARK:

Daily Work, Homework Checks & Check Ups	0%
Unit Exams	40%
Summative Assignments/Review Quizzes	15%
Midterm Exam	15%
Final Exam	30%

Summative assignments may include weekly assignments, mid-unit and unit reviews.

Daily work will consist of check-ups, problem solving, mental computation, quick questions, and written



**Students are expected to take responsibility for their progress and achievement.
If there is a concern or you feel an error has been made, please discuss the matter with me.**

It is important that you understand and are clear on the basis for marks that are given.

**My goal is for you to experience success in math,
and I am here to support you every step of the way.**

To be successful, you must also **want it for yourself** and **believe** you can reach your goals.

These four strategies will help you get there:

- Be an active listener and stay engaged during class
- Use class time to complete your work
- Ask questions when you don't understand a concept
- Keep up with the assigned work each day.

Note: I will be available to help students outside of class during TAG, Lunch, or after school, but priority will be given to students who consistently use their class time well and are still needing extra support.

**AT THE END OF THE DAY
WHO YOU ARE IS TOTALLY
& COMPLETELY UP TO YOU**

CLASSROOM EXPECTATIONS

- ❖ Remember the **3 R's – Respect, Responsibility, & Right Attitude.**
- ❖ Be **on time** and **in class** at **all times**.
- ❖ **Be prepared for class.** Be ready to work BEFORE the bell rings and have all your supplies ready (binder/notebook, pencil, eraser, calculator, water bottle, healthy snacks)
- ❖ **Cell Phones & Other Electronic Devices** must be put away during class time unless instructed otherwise. During all tests & quizzes, cell phones & smart watches must be put in one of the side pockets.
- ❖ Healthy food and drinks are permitted in the classroom.
- ❖ Students are not permitted to leave class without teacher permission.

DEPARTMENT POLICIES

EXAMS

It is YOUR responsibility to prepare for all your tests/quizzes.

- ❖ If a student is absent for any quizzes/exams, they will be expected to make arrangements with the teacher to write the exam/quiz in a timely manner.
- ❖ When students are absent the day of a test, they will be given a different version of the test AND may void their privilege to rewrite that particular test.
- ❖ Requests to not write the test on the planned day will not be honoured.
- ❖ Tests need to be completed in one sitting and students will be permitted double time.
- ❖ Teachers will not help with answering questions while a student is writing a test it is important to study and be prepared for the test on the day of the test.

REWRITE POLICY

If a student feels that their mark is not reflective of their ability, they will have the opportunity to re-write any unit test at the end of each semester.

However, the following conditions must be met:

- The test will be written outside of class time.
- The re-write mark will become the new mark whether it is higher or lower than the original mark.
- There will be NO rewrites on open book quizzes, cumulative exams, or final exam.

ACADEMIC DISHONESTY (as taken from Student Handbook)

Examples of academic dishonesty include, but are not limited to:

- Taking someone else's work or ideas and passing them off as one's own including:
 - copying from another student
 - copying/downloading from the internet
 - taking and/or sharing pictures of assessments
 - use of any Artificial Intelligence (A.I.) programs like, but not exclusive to, ChatGPT or Photomath
 - anything copied either in whole, in part (even if just brief parts like the main idea or one example or sentence), or in concept. This also includes the rewording of sentences or ideas to make it look like your own work
- ❖ Those who allow their work to be copied/share their work are aiding in the process and therefore **JUST AS RESPONSIBLE AND LIABLE** to be held to the same consequences as the student who handed in the plagiarized work.

Depending on the severity of the violation, the offending student(s) may suffer any or all of these consequences in consultation with the teacher and/or administrator's discretion.

Consequences include, but are not limited to:

- Redoing the assignment
- Parent contact
- A mark of zero on work submitted
- Detentions
- Referral to the administrator
- Phone must be handed in to the office - see cell phone procedure

CLASSROOM PROCEDURES FAQ's

How will I know about upcoming tests or lessons?

All deadlines will be discussed in class and posted on the side whiteboard. Check the Tentative Student Calendar on Google Classroom. The calendar will be updated weekly and often by unit so you can plan ahead for upcoming tests and quizzes.

What if I am absent?

When possible, let me know ahead of time that you are going to be absent. It is the student's responsibility to catch up on any missed work. If you are absent for a quiz/exam, you will write it the day following your absence during TAG, Lunch, or after school. Please speak with me to arrange a time.

What if I was absent and there was something handed out that I missed?

Each class has a designated basket near the front of the classroom. If you were absent and missed a handout, you can find your copy there.

What can I do if I am done my work?

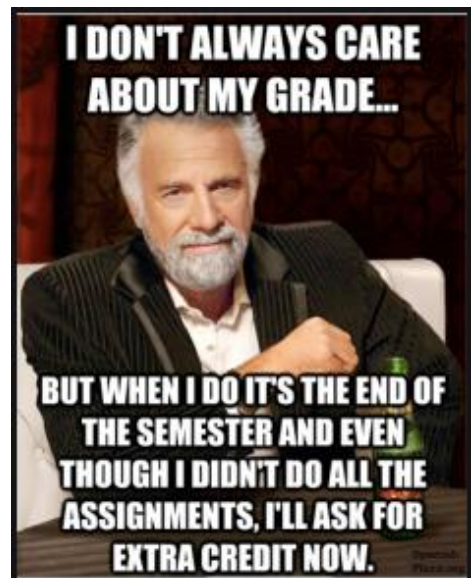
Class is over when the bell rings and I have dismissed you. In math, there is always more work to do. You can make flashcards or study notes, review for the next quiz/test or do extra practice questions. Please do not pack up early or leave class until the bell rings. Use your class time wisely... more time spent working during class = more concepts learned = less/no homework in the evenings.

What if I need extra help?

I expect you to use your class time wisely – be an active listener, ask questions, take notes, and work on assigned questions during class time. With 75-minute classes, that is a lot of time to work on math. The best time to get help is daily, as you are working on questions in class. Do not wait until the last minute to ask for help!

For example, coming in the day before or day of a test and needing help on the entire unit is setting yourself up for failure. TAG is a perfect opportunity to get the help you need. If TAG isn't enough time, talk to me about getting help during lunch or after school as well.

For students seeking out additional private tutoring supports, I have a list of people who have expressed interest in tutoring, but it is the student's responsibility to make contact and determine if the tutor is a good fit.



What is a Quick 3 Quiz?

Almost every day will begin with a Quick 3 Quiz or a checkup. The intention of this is to help you recall previous concepts and improve your understanding.

What if I arrive late?

A student who is not in the classroom when the second bell rings is considered late. Please do not disrupt the class if you arrive late. Enter the room quickly and quietly, complete the late sign-in sheet and take your seat.

Too many lates = detention at lunch... & request for a late contract...

What if I behave inappropriately?

Inappropriate behaviour will not be tolerated. Please refer to the student handbook.

Time Wasted = Time Owed

Detentions will be served at lunch time for inappropriate behaviour. If you skip your detention, further consequences may be requested through the office.

May I use the washroom during class time?

Please try to go before class, but if you must use the washroom during class time, please ask at an appropriate time, such as after the lesson and/or during work time. You are not to go elsewhere (ie. other classrooms, hanging out in the hallway, the office, etc...). There is only one student allowed out of the classroom at a time and your cell phone must be left in the classroom. If you are found somewhere else during your washroom break, you will lose the privilege of using the washroom during class.

Where do I hand in assignments, tests and/or quizzes?

All student work should be handed into the labelled assignment bins near my desk. Completed work goes in the inbox and marked assignments to be returned will be in the outbox. If you were absent, check the outbox to see if any of your assignments were returned.

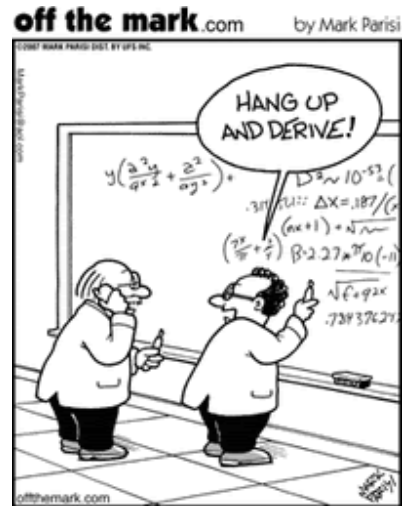
How do I communicate with Mrs. Krause?

Please talk to me if you have any questions or concerns or just want to chat... I would love to get to know you better! I am usually pretty easy to track down... during class, TAG, lunch or after school. Each week I will let you know my availability after school. You may also text me on my cell phone (for school purposes only) or email me at joycekrause@prrd8.ca. I will do my best to respond to texts/emails in a timely manner, but my family takes priority during evenings and weekends. I will not reply to any texts/emails after 10 p.m.

If I am too sick to attend class in person, can I join class virtually?

Joining class via Google Meet is an option for extenuating circumstances, but must be arranged with me directly. Directions for joining virtually are posted in Google Classroom. If you are having difficulty connecting during class time, please call my classroom extension 403-528-1996 ext 2036 so we can troubleshoot.

My final piece of advice for a successful semester...



Links & Resources

The following is a list of QR Codes and Links you may find useful for this semester.



Eagle Butte Website
<https://eaglebutte.myprps.com/>



ExamBank – Math 31
<http://alberta.exambank.com>
Login: pr
Password: exam



MathTV
(free tutorial videos)
<http://bit.ly/Ms9TV6>



Calculus – A First Course Textbook (PDF)
<http://bit.ly/CalcTextPDF>



Khan Academy (free tutorial videos)
<https://www.khanacademy.org/>



Symbolab (Calculus Calculator)
https://bit.ly/symbolab_calculus



Any student with a Shortgrass Library Card has FREE ACCESS to Solaro, which is a study help and exam preparation tool for students in grades 3 to 12. Thousands of practice test questions are available and students receive instant feedback in the form of step-by-step solutions for each question. A full set of lessons are also available which cover core concepts and feature an integrated study notes and flash card system. All content in Solaro is based on the Alberta curriculum.