

Course Syllabus – Honors Finite Math / Brief Calculus 2020-2021, Mr. Felling

Course Information

MAT430 – Honors Finite Mathematics, MAT500 – Brief Calculus

Instructor – Steven B. Felling, B.S.E.E., M.Ed., Rio Salado dual-enrollment instructor

Contact Information: sfelling@tuhsd.k12.az.us (480) 706-7900 x70556

(best way to contact me is via email)

Room/Class hours:

Virtual Office Hours:

Course Description

MAT430 – Honors Finite Mathematics

This 200-level college math course is designed is essentially a precalculus/honors algebra 2 applications course and serves as an excellent bridge between precalculus and calculus. As a standalone course, honors finite math provides an introduction to the mathematics required for the study of social and behavioral sciences. The topics include: linear systems and matrices, sets, combinatorics and probability, and methods of optimization of linear systems with and without constraints. This course also includes a review of precalculus concepts in preparation for brief calculus the following semester. Appropriate technology will be used to enhance mathematical understanding and problem solving skills. The use of a graphing calculator/computer program is essential throughout this course.

MAT500 – Brief Calculus

This 200-level college math course provides an introduction to the theory, techniques, and applications of the differential and integral calculus of elementary functions with problems of interest to students required for the study in business and social sciences. Students will be able to find limits of function values of algebraic, exponential, and logarithmic functions. Students will be able to work business and economics applied problems using the derivative. The use of a graphing calculator/computer program is essential throughout this course. Students successfully completing this course with a “C” or higher should be prepared to take AP Calculus BC the following year.

Course Structure

During this unprecedented time, this school year may involve periods of time when we are conducting school virtually and/or in-person or some blend of the two. It is my goal that all students experience this course in a manner which is as close as possible to what would happen in a normal year, both structurally and academically.

As such, as much as possible, this course will be structured in the same way the usual in-person class would be taught. When in virtual mode, daily Google Meet sessions will attempt to replicate as closely as possible the lesson structure, practice, and activities that would occur in the classroom. By structuring the virtual course in this way, as we transition to in-person at some point (and then possibly back to virtual if there is a school closure) these transitions will be as seamless as possible.

Virtual Instruction Structure

Students need to log in remotely every school day to a daily Google Meet session conducted during their class time according to the school bell schedule. Per school rules, attendance will be taken every day by noting who is logged in to the Google Meet session at various times. A virtual lesson will take place online which will involve some combination of me instructing using Smarboard software and the ability to write on the presentation (the same as I would in class) along with live voice-over explanations. There will be opportunities during each class day for students to ask questions, and also points during the lessons when students will be working problems, participating in virtual activities, or otherwise participating in what is happening (typically involving students providing feedback via typing in the Google Meet text chat or sometimes via microphone.) It will be necessary for students to have paper, pencil, and their calculator available during these lessons which will be active and conducted live. I will try to remember to record all sessions so that if a student is unable to login at the specified time for some reason (they would be marked absent) they would still be able to view the video later to experience the full lesson.

For Honors Finite Math / Brief Calculus specifically, the course is divided into Chapters with each unit culminating in a summative test. Homework is the primary means of formative assessment and it is essential that students complete homework to reinforce learning and measure level of mastery continually. Chapter notes are also available for every chapter in both blank and filled-in forms to help students learn the material and speed note-taking during lessons.

The specific methods we will conduct the assessments and verify homework completion are still being determined and will be communicated in the class sessions as they become available.

In-person Instruction Structure

When we switch to in-person instruction, the academic structure of the class is not anticipated to change much. We will be conducting the same lessons, except that these will be delivered in-person rather than through Google Meets. We will then be able to use traditional methods of assessment (paper tests completed and collected during class), and it will, of course, be very nice to see everyone! But other than the social aspects of class, the structure of the class will not vary much between in-person and virtual modes.

Communication

Websites – where to find current course information

The best place to look for information about this course is to check the course website. There are actually two websites in my case: I use Schoology but I also have an external teacher website on the general internet at www.mrfelling.com. The reason I have the external website is to be able to provide information to former students and current students of other teachers (who don't have access to the Schoology course) as well as other teachers outside of DV. The internet website is also helpful because sometimes the Schoology system goes offline, especially during heavy virtual-instruction use times, so it is nice to have a backup location.

So the first place you should look for course information is either Schoology or www.mrfelling.com

The same information will be in both places with two exceptions. There are a few things I only post in Schoology but not on my internet site:

- Answer keys/solutions only appear in Schoology.
- Copyrighted material (scans of textbook homework pages, etc.) only appear in Schoology.
- The Google Meet links for our class sessions and for virtual after school tutoring (because I need to prevent people from outside of school crashing our sessions).

Announcements

When I need to make sure everyone knows about something I will use the Schoology announcement system, so to avoid missing these, I suggest you set your Schoology settings to notify you of Schoology announcements. I also have an area of the class page devoted to listing announcements, so they are available there as well.

Virtual Course Lessons

I will provide a link at the top of our Schoology course page you can use with your web browser to access our daily Google Meet lessons sessions.

Questions /(Virtual) Office Hours

There will be time in every Google Meet to ask some questions, so definitely ask questions during those times. If we don't get to your question or you need additional help, please try to get additional tutoring help from me after school. When we are in-person, I will be available in

the DV math office (C114) every school day except early-release days...no appointment needed, just walk in. If you don't see me, find my desk – there will be a sign on it saying where I am (sometimes we move to a classroom to be able to spread out and work on the whiteboards). When we are in virtual mode, I will also be available after school at a separate Google Meet link which you'll be able to get from the Schoology website.

Note: There are sometimes occasions when I am unable to tutor after school (due to required meetings) but these only occur rarely, so usually you'll be able to get additional help from me almost any school day after school.

Email

You can also always send me an email if you have any questions about anything. My email is sfelling@tuhsd.k12.az.us and I almost always respond within 12 hours to emails.

Learning Resources

The Google Meet sessions/in-person classes

The primary way to learn this course is from the lessons I'm creating for the class. I have developed ways of explaining things along with integrated practice and activities which I believe are the most effective way to learn this material.

Textbooks

Each semester course has its own textbook, and both are excellent resources. I would highly recommend checking these out from the bookstore if possible for easy access to homework problems and also as a supplement to my own lessons in class. Our textbooks are:

Finite Mathematics, An Applied Approach (11th Edition) by Michael Sullivan

https://www.amazon.com/Finite-Mathematics-Approach-Michael-Sullivan/dp/0470458275/ref=sr_1_1?dchild=1&keywords=Finite+Mathematics%2C+An+Applied+Approach+%2811th+Edition%29+by+Michael+Sullivan&qid=1595693774&sr=8-1

Brief Calculus, An Applied Approach (8th Edition) by Michael Sullivan

https://www.amazon.com/Brief-Calculus-Approach-WileyPLUS-Stand-alone/dp/0470258985/ref=sr_1_6?dchild=1&keywords=Brief+Calculus%2C+An+Applied+Approach+%288th+Edition%29+by+Michael+Sullivan&qid=1595693823&sr=8-6

YouTube

If you look up any math concept by name on YouTube there are many videos available which explain things and the ones listed first are typically very good.

Course Expectations

Virtual Mode

When we are in virtual mode, it will be more important than ever for you to own your own learning and success because my mechanisms for monitoring what you are doing are more limited, and it will, unfortunately, be easier for you to share work with other students or get help on things like practice work or assessments from other students. Practicing together is always fine and is a good thing, but working together on assessments is cheating and leads to problems. Here are my expectations from you during the time the course is taught virtually:

- Attendance: You are expected to attend all Google Meet online lesson sessions unless physically unable to attend due to illness or other family-specific commitment. Attendance will be taken during online sessions and reported to the office.
- Engage in online learning: During the lessons, I expect you will devote your full attention to what is happening in the Google Meet, listening and trying to understand when new materials is presented, asking questions when you don't understand, and actively participating in practice work and activities conducted online. **Note: in some cases, your participation may even earn you extra credit.**
- Submit practice and assessment work: When we ask for practice work to be submitted or for you to complete an assessment, you are expected to complete this work to the best of your ability and on time.
- Submit only your own work: On all assessments and even on submitted practice work, I expect that you will have completed the work yourself and that your work represents your own effort and understanding. On practice work, it is okay to ask other students for help, but then you need to take the time to understand the work yourself, not merely copy others work to submit. On all assessments, any sharing of information between students is prohibited and is considered cheating.

At some point we will presumably be able to return to in-person school, and at that point we would begin using proctored, in-person unit tests as we usually do. It would not be a good thing if our first in-person test ends up being the first time you take a test in this class without assistance from classmates.

In-person Mode

Once we are back in-person, the usual classroom expectations apply:

- Respect is expected: In order to learn, we must have an effective learning environment. We don't usually have many behavior issues in honors math classes, but any behaviors that disrupt the learning environment will not be tolerated. Learning requires open communication, and people must feel safe to share their thoughts and ideas. I respect my students, and I expect students to respect me, each other, and themselves.
- Attendance: Desert Vista policy is to consider students up to 20 minutes late tardy, and students more than 20 minutes late to class absent. Please keep absences to a minimum. If you do need to miss class, information about what we covered and homework is always available on Schoology or the www.mrfelling.com site. **Please**

note: students with non-school-related absences of 11 or more days from a class (excused or unexcused) in a semester may lose course credit for that semester.

- **Bathroom:** Student should only use the bathroom when absolutely required – please do not assume that you will go to the bathroom during class every day. If a student is using the bathroom frequently, I contact parents to report this. Time away from the classroom makes it difficult to stay caught up and learning. I require that students give me their cell phone in order to go to the bathroom. Only 1 student can be out of the room at a time and they must obtain the bathroom pass from me before leaving. Students are expected to return from the bathroom in a reasonable amount of time (10 minutes) – if a student is gone from class without a written pass from me for more than 10 minutes, I will contact the office.
- **Electronics:** With the exception of ‘stretch breaks’ students are not to be using their cellphone unless we are using it as part of the lesson. If I see electronics out at inappropriate times, school policy allows me to confiscate the item and return it at the end of the hour. For frequent offenders, at my discretion, I may opt to invoke the school policy to give the confiscated phone to the front office which requires parents to retrieve the item. Note: in accordance with school policy, I am not, and the school is not, liable for loss of, or damage to confiscated items. To be safe, students should not have electronics out of their backpacks unless I specifically indicate it is appropriate.
- **Cheating:** Any communication during or after a test or quiz, or any other form of cheating will result in a zero on the test or assignment.

Late Work

All work is expected to be on time, unless prior arrangements have been made with me for some special situation. Late work may be accepted, but will count for only 50% of the usual value.

Grading

Unless superseded by school policy for virtual learning, grading will follow as closely as possible our usual grading standards for this course.

Letter Grade

A letter grade is issued for each semester separately for the high school transcript. The semester grade is made up of 40% for each quarter plus 20% for the semester final exam. The quarter grades are each determined by a percentage of total points (and all points count the same in this course).

Grading Scale

- A 90% - 100%
- B 80% - 89%
- C 70% - 79%
- D 60% - 69%
- F 59% or lower

Rounding: For students earning borderline grades (for example, 89.5%) I determine rounding on a case-by-case basis, generally by considering your chapter test scores and your score on the final exam. More than half of these assessments must be at the higher grade level to justify me rounding your grade up.

Checking Your Grade

I endeavor to keep the grades shown in the StudentVue/ParentVue system very current, entering quiz and test grades within 1 day of the quiz/test. Some smaller points (like points for participation) are entered each weekend.

What Makes Up Your Quarter Grade

- 80%-90%: **Assessments of your knowledge**
 - Chapter tests: each chapter culminates in a summative test (for longer chapters, we sometimes break in two tests) which covers all major ideas learned in the chapter. The expectation is that students will use the lessons, practice, and quizzes to thoroughly learn and review the material in a chapter by the date of the chapter test. Tests will usually be worth 100 points each.
Quizzes: We may provide additional checks of understanding in the form of quizzes, some of which may be graded.
- 10%-20%: **Level of Effort**
 - Homework: Each chapter will have assigned homework for each section which I expect students to complete fully to the best of their ability. I will typically require that students submit homework at various times so I can verify it is being completed with good quality and this will typically be graded for level of effort points.

- In-class activities/'share your thinking': We will participate in a variety of in-class activities including data collecting experiments, group statistical analysis activities, and competitive games. These may or may not be graded, and may be graded for correctness, completion, or quality of effort. In some cases, sharing your thinking during class may give you extra credit.

- **Extra Credit Opportunities**

For Rio Salado college credit classes at DV, we follow Rio Salado's policy that the student's grade be a reflection of degree of math understanding and not be artificially boosted by excessive extra credit. However, we do include some ability for students to earn small amounts of extra credit (always tied to math knowledge).

There is one main way to earn extra credit:

- **Share-Your-Thinking**

To encourage active participation in class, I note every time you share your thinking in class. You can share your thinking by answering a question posed or solving a problem and providing a solution we can discuss. What you share *doesn't have to be correct*, it just needs to be something reasonable that advances our class discussion.

For every 5 times you share in class, you earn a 'homework pass' which will give you full credit for a missed homework section.

If you don't use your homework passes, each one becomes an extra credit point at the end of the quarter (capped at 5 extra credit points max).

So it is always advantageous to you to share your thinking during class!

Absences, makeup and retakes policy

The goal of this class is to guide students toward a complete mastery of course material. This is done by making incremental progress steadily throughout the course – much of the later material depends upon mastery of the previous course material. **It is very important that student attend class. New material or very important practice work happens every day.**

If you miss class, that class lesson is generally no longer available to you (although during the virtual instruction period recordings of the Google Meets will be available). So you will need to find alternate ways to learn the material (read the textbook, review online lecture notes, ask other students in class for help, come to before/after school tutoring for help, etc.) Note that you are still responsible for knowing the material, even if you miss class.

Our makeup and retake policy aims to encourage students to stay caught up at all times because this is so critical to overall success in the class.

Retakes: Per DV math department policy, for honors/college credit classes, no retakes are allowed for tests or quizzes.

Makeups: Test must be taken by the date of the test except in very exceptional circumstances. In college, if you know you cannot attend on a test day, you usually have to make arrangements with the professor to take the test early. If you just fail to show up on the day of the test, you may simply get a zero which cannot be made up. In high school our policy is less drastic...if you miss a test, you'll need to take it the next time you are in class, but I still request that you notify me before the day of the test, because I will need to make an alternate version of the test for you to take when you return.

Materials and Supplies

Please have the following with you during all class sessions:

- Graphing calculator: You will need a graphing calculator which includes statistical test and matrix functions. I recommend the Ti-84 calculator (any edition). Ti-83 will also work but is missing a couple of features we use in this course (however, there are workarounds for these functions available). We do not need any of the more advanced features of calculators like the Ti-89 or nSpire and those calculators have more complicated user interfaces. We will use a Ti-84 for all class demonstrations and also show how to use the Ti-83 with workarounds.
- Paper and pencil/eraser: Even during virtual learning mode there will be times when we ask you to work problems in class, so you'll need the ability to work problems out on paper and be ready to report your answers.
- Note taking materials: You'll need to take notes during class sessions. Blank notes which include what is displayed on my Smartboard presentation are available beginning the weekend before we use them. If you are able to print blank notes and bring them to class, this greatly speeds note taking. If not, you'll need paper/pencil to take your own notes.

While in Virtual Mode

While in virtual mode you'll also need a device and internet access with a web browser which can log you on to a Google Meet session and the ability for you to see the presentation and hear the audio. There will be times when we ask you to type things into the session chat text. Although a cellphone would minimally meet this, a laptop, tablet, or desktop computer will be much easier to use.

We are still determining how we will collect work and one mode may be to ask you to take pictures of written work to email the instructor, so having a device with the ability to take and email a picture is also required (cellphone would be most convenient for this, although a laptop/desktop with a webcam would also work.