MATH 1180.006 Syllabus

College Math for Business, Economics and Related Fields

MW, 2:00 pm – 3:20 pm, Curry Hall 104

Instructor Information

Name: Jake Williams
Pronouns: He/him/his
Office Location: GAB 462
Office Hours: Tuesday, Thursday and Friday, 1:15 pm – 2:45 pm
Email Address: Jake.Williams@UNT.edu
Communication Expectations: Send an email to the above email address. I highly recommend using UNT's Webmail service to do this. You *must* use your UNT email account, or I cannot respond *at all* due to FERPA and other privacy concerns. Your communication with me should be in line with UNT's General Online Communication Guidelines. If you email me and do not receive a reply within one (1) business day, please send a follow-up. A gentle nudge is always appreciated!

Note: One *business day* is Monday through Friday from 9 am to 5 pm.

Course Description

Topics from algebra (linear equations, quadratic equations, functions and graphs, inequalities); mathematics of finance (simple and compound interest, annuities); linear programming, matrices, systems of linear equations; applications to management, economics and business.

Course Structure

This is a 15-week, face-to-face course that will cover four interdependent units, although not all of Unit 4 is required. There will be three midterm exams, plus a comprehensive final exam.

Course Prerequisites or Other Restrictions

Two years of high school algebra and one year of geometry, and consent of department. A grade C or better in MATH 1180 is required when used as a prerequisite for other mathematics courses (e.g. MATH 1190).

Course Learning Objectives

- Students will demonstrate an ability to recognize and solve problems involving financial mathematics, including simple interest, compound interest and present and future value of annuities.
- Students will demonstrate an ability to understand graphing of equations, performing operations with lines in a plane, finding and interpreting solutions of systems of linear equations and linear inequalities, and finding and interpreting solutions of standard maximization problems.
- Students will demonstrate skill at using tools from algebra. Students will demonstrate an ability to manipulate, solve, graph, and work with several types of functions.

- Students will demonstrate skill at using tools from probability, including counting, using conditional probability and finding expected values.
- Students will demonstrate skill at using exponential rules, factoring, function composition, interpreting results from rational functions and making and interpreting sign charts.

In this course, you will be evaluated for meeting the following 3 Core Curriculum requirements - Empirical and Quantitative Skills, Critical Thinking, and Communication. These skills are embedded throughout the course and the assessment of them will occur using distinct criteria from your grades.

ADA Policy

The University of North Texas makes reasonable accommodations for students with disabilities. To request accommodations, you must first register with the Office of Disability Access (ODA) by completing an application for services and providing documentation to verify your eligibility each semester. Once your eligibility is confirmed, you may request your letter of accommodation. ODA will then email your instructor a letter of accommodation, initiating a private discussion about your specific needs in the course.

You can request accommodations at any time, but it's important to provide ODA notice to your faculty as early as possible in the semester to avoid delays in implementation. Keep in mind that you must obtain a new letter of accommodation for each semester and meet with each faculty member before accommodations can be provided in each class. You are strongly encouraged to meet with faculty regarding your accommodations during office hours or by appointment. Faculty have the authority to ask you to discuss your letter during their designated office hours to protect your privacy. For more information and to access resources that can support your needs, refer to the Office of Disability Access website (https://studentaffairs.unt.edu/office-disability-access).

Materials

Homework assignments will require accessing Knewton or Canvas "quizzes" through your UNT Canvas account. Log in to Canvas at https://unt.instructure.com, read through "Getting started with Knewton". Additional resources are listed in Canvas. You will have to purchase access to Knewton or continue access if you have used it for Math 1180 or 1190 and purchased the 2-year access within the last two years. This can be done through the Barnes and Noble link or other sellers. You can get free access for up to two weeks. For more information about your homework, please read the Homework section.

No textbook is required.

Course Technology & Skills

This course has digital components. To fully participate in this class, students will need internet access to reference content on the Canvas Learning Management System.

Minimum Technology Requirements and required skills

- A working computer with speakers and webcam that can reliably access the internet and access Canvas (minimum requirements) and view content videos on Canvas or YouTube
- A calculator (see Calculator Policy)
- Ability to download, install and run software
- Proficiency in using Canvas
- Proficiency in using Knewton (see Getting Started with Knewton in Canvas)

- Proficiency in using your calculator

Information on how to be successful in a digital learning environment can be found at Online Student Experience (https://studentaffairs.unt.edu/online-student-experience/).

Calculator Policy

Many calculators will be sufficient for the exams in this class, but not all! Good options from Texas Instruments are the TI-36X, TI-30XIIS, TI-83 or TI-84. Similar Casio or other manufacturers' calculators will also work. Calculators not allowed include TI-Nspire, TI 92, TI 89. Any other device with alphanumeric/CAS capabilities or the ability to connect to the internet, such as a smartphone, is strictly forbidden on exams.

It is the student's responsibility to be familiar with operating their calculator by exam dates.

Knewton is Required

The homework and some course content will be delivered in Knewton, which must be accessed via Canvas. You **will not** need a Knerd link as access is provided directly in Canvas.

Note: Mac users may find it easiest to use a browser other than Safari.

Generative AI Policy

Learning mathematics requires independent thought and the ability to see and learn from one's own mistakes. In addition, generative AI is known to math educators to make serious errors, assume facts unknown to the student, and produce a great deal of clutter in addition to valid steps. Therefore, the use of Generative AI like ChatGPT, Claude, Gemini, etc., is strictly prohibited in this course. Depending on the nature of the assignment in question, if a student is caught using such services to do their work, the student's grade may be heavily penalized, including the possibility of a zero on the assignment. At the instructor's discretion, depending on the severity of the infraction, this conduct may be reported to the Office of Academic Integrity.

Course Evaluation

Homework (Knewton) – 30%
Midterm Exams – 50%
Final Exam – 20%

- A: 90 and above
- B: 80 – 89
- C: 70 –79
- D: 60 – 69
- F: 59 and below

No rounding is done when assigning final grades. If you receive a 69.99% in my course, you will be assigned a "D", not a "C". The same goes for the other letter grade boundaries.

Policies/information directly affecting grades/grading

Homework

The online homework is worth 30% of your overall course grade. Each assignment is equally weighted. Most homework will use an online software program called Knewton, though some will be directly in Canvas. Your assignment grades will be synchronized with Canvas.

What is Knewton?

Knewton is a mastery-based adaptive software and is designed to judge your ability to complete your assignments. You will be able to proceed through Knewton much more quickly if you study and review your notes before starting the assignments. For best results, read through “Getting Started with Knewton" located in Canvas before your first assignment.

Why do Homework?

The purpose of homework is to provide you with sufficient opportunities to learn and practice the new content you are learning. Knewton is adaptive and mastery-based, which means that the software will provide each student with enough questions to judge whether each topics learning objectives have been mastered. This means a student who has prepared well before the assignment may have very short assignments, while a less well-prepared student may take many more questions on each assignment. Again, the more you prepare before starting to attempt the exercises, the less work you will have. For more tips on how to get the most out of the homework assignments, read through “Getting Started with Knewton".

Get the Most out of Homework

- You should have a dedicated notebook for your math homework. Carefully write out your work, especially noting the questions with which you struggled. This should form a substantial part of your review material prior to the exams.
- Homework is one piece of your learning process in this course, but successful completion of the homework assignments is not sufficient preparation for exams. You must be able to do the exercises on your own, without any aids on exams.

Where is Knewton?

You access your Knewton powered homework in one of two ways through Canvas, they are:

1. In the Syllabus portal. Every assignment for your course is accessible through the Syllabus portal. This portal is very helpful because it lists all assignments in due date order; or
2. In the Content module. Select the Modules tab along the left-hand navigation of Canvas. From the Modules select Unit 1. The Knewton assignments have a paper and pencil icon to their left.

When are Knewton Homework Assignments due?

Assignment due dates are listed on the calendar and on the syllabus link in Canvas. Knewton assignments are always due at 11:59 PM on the due dates. To successfully complete the assignments, you must carefully manage your time. I recommend that you plan to complete them well ahead of the due date. See below for my late work policy. At the end of the term, your two (2) lowest grades will be dropped from the calculation of the homework average. In Canvas, the two dropped grades will not be correctly calculated until the very end of the semester.

Midterm Exams

Three in-class exams are planned for this semester. Keep a record of all your scores. Be sure to review your exam upon receiving it. Check your written exam grade with the grade posted online to ensure that they are the same. The midterm exams account for a total of 60% of the overall course grade. Tentative dates are listed on the attached calendar but are subject to slight changes.

Final Exam

The final exam is on **Monday, Dec. 8, 1:30 pm – 3:30 pm**. The final exam is comprehensive and is 20% of your course grade. For a full list of Final Exam dates and time see this link. The format of the final exam will be similar to the format of the midterm exams, except longer.

Examination Policy

Exams are closed-book, on paper and done in class during the time listed on the syllabus unless an announcement of a change is made in class. (Such announcements will be mirrored on Canvas.) Students are expected to take the exams on the given day. There are no make-up exams or opportunities to take exams after the listed dates. In the event of a schedule conflict with a university function, dental/physician's appointment, wedding, formal, etc., the student must take the test *early* if possible. I request a week's notice for this accommodation via email. If an unavoidable conflict/illness comes up, reach out to me as soon as you can. If a student does not take a scheduled exam, a zero will be recorded for that exam. If your final exam score is higher than one of your midterm scores, then that midterm exam grade – *and only that midterm grade* – will be replaced with your final exam grade. If you receive a zero for academic dishonesty on an exam, your final exam score *will not* replace that zero.

Late Work

If 100% is not achieved by the due date, you have the opportunity to complete the assignment up to 2 days past the due date for a deduction of 5% per day. However, if the assignment is not complete within 48 hours, then the grade will remain as it was submitted on the due date.

An example: Suppose you earn 70% by the due date. You work on the assignment during the next two days, and you complete it. If you complete it on the first day, then you earn 95%. If you took both days to complete, then you earn 90%. Now instead, let's say you work on the assignment during the next two days and only earn a 90%. The grade will remain 70% because you did not complete the assignment.

Finally, not having access to Knewton for any reason is not an exception to this policy; this is also the student's responsibility.

Instructor Responsibilities and Feedback

My goal in this course is to provide an environment conducive to your learning. I will work hard to be available outside of class during my office hours, via email, or via Zoom when necessary. I welcome questions about any portion of the course and am happy to clarify any issues if they come up. Most homework assignments are automatically graded, and you can review your work on the Canvas assignments the day after they are due. I make it a priority to grade exams quickly, but experience suggests that this can take up to two weeks.

Drop/Withdrawal Policy

If the student is unable to complete this course, it is their responsibility to formally withdraw from the course. You can find more details about dropping the course at this link.

If the student does not properly withdraw from the course but stops attending, the student will receive a standard letter grade, and this usually ends up being an F. If you are considering dropping, it is strongly recommended that you discuss the matter with me as soon as possible.

Incomplete

Beginning Nov 8, a student that qualifies may request a grade of "I", incomplete. An "I" is a non-punitive grade given only if *all three* of the following criteria are satisfied. They are:

- The student is passing the course;
- The student has a justifiable (and verifiable) reason why the work cannot be completed as scheduled; and
- The student arranges with the instructor to complete the work within one academic year.

Syllabus Change Policy

This syllabus is subject to change. Any changes will be announced in class and the updated syllabus will be posted on Canvas.

Attendance and Participation

Research has shown that students who attend class are more likely to be successful. You should attend every class and participate fully unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the Student Attendance and Authorized Absences Policy (PDF). If you cannot attend a class due to an emergency, please let me know. Your safety and well-being are important to me. Even if you are unable to attend, students are responsible for all information given in class.

Emergency Notification and Procedures

Students will be notified by Eagle Alert if there is a campus closing that will impact a class. See Emergency Notifications.

Classroom Etiquette

Appropriate behavior is expected of all students taking this course. Arrive to class promptly and do not leave until the scheduled ending time of the class. If you must arrive late or leave early, please do so as discreetly as possible and take a seat near the door. Turn off all non-medical electronic devices such as pagers, cell phones, laptops, etc. Take off your headphones. Do not play on your phone or work on unrelated assignments during class. I reserve the right to ask disruptive students (texters, those using a computer for non-class related work, etc.) to leave class. You will be considered absent if you are asked to leave. Again, it is considered a serious violation of your responsibilities as a student to be on a computer or your mobile device during class. It distracts you, lowers your performance in class and does the same for those around you. Please read the New Yorker article I've posted on Canvas for more information about this. Students misusing electronic devices for non-academic reasons distract others and may be asked to leave. See also #8 on the 10 academic rights that are linked here.

Recommended Steps to Succeed

The following advice consists of observations from the course coordinator and supplemented with the same from me. The most important is that two character traits common to successful students are maturity and time management skills. Learning requires working when you don't want to – that requires maturity. Learning also requires consistent and diligent dedication of your time outside of class.

Some additional comments/advice:

- After class, review your notes. If you have questions, ask your instructor immediately.
- Actively read through all recommended readings.
- Listen to your instructor's advice on how to interact with the class, because they are the one who runs the class. On the other hand, you will know your schedule and limitations better than your instructor will, so always carefully consider advice when given it.
- Use the time you spend on your Knewton assignments to learn the material, rather than just getting through the homework as fast as possible. If you rush past details, you won't remember them when you need to.
- Complete the Exam Reviews prior to each exam on your own time. Do not rely exclusively on in-class review sessions to prepare for exams.
- Grades are given for the student's own good, including bad ones. They are not something to negotiate after receiving them, but to use to reflect on where you need to improve.
- Form a study group with your classmates – online or offline, as you and your group see fit.
- Make use of the tutoring options available to you: the Math Lab, the Learning Center, Supplemental Instructors, and your instructor's office hours.
- Work on the assignments consistently and start them well ahead of the due dates.

Waiting until the last minute to do anything in college, let alone homework, is a terrible idea. Don't do it.

- Math is not a spectator sport. You must try the problems, finish problems, ask questions, correct your mistakes, put concepts into your own words, and practice, practice, practice! You learn math by doing it, not by watching others do it.
- Just because you can follow steps presented to you, it does not mean you can replicate them yourself or modify them to suit a problem you are given. You must be able to do a problem from start to finish on your own to truly say you understand it.

One last thought: As an adult, you need to **be your own advocate**. If you are having problems, you are expected to seek help on your own. At some point in your college career, you will run into problems and need to ask for help. Don't wait – reach out as soon as you realize you have an issue.

Supporting Your Success and Creating an Inclusive Learning Environment

Every student in this class has the right to learn and engage within an environment of respect and courtesy from others. I encourage you to review UNT's Student Code of Conduct so that we can all start with the same understanding of civility in my classroom and any other classroom (Code of Student Conduct).

Summary of key dates

Review the registrar's Academic Calendar & Key Dates.

Academic Integrity Policy

Cheating on midterms, quizzes, or final exams is a serious breach of academic standards and will be punished severely, up to and including the student failing the *course*. It will always result in a zero on the exam or quiz. All work done on exams and quizzes must represent only the student's own work. According to UNT Policy 06.003, academic dishonesty occurs when students engage in behaviors including but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. See Academic Integrity for details on academic integrity policies at UNT.

Additional Student Support Links

Academic Support Services

- UNT Math Lab (https://math.unt.edu/undergraduate/math-lab.html)
- UNT Learning Center (https://learningcenter.unt.edu)
- Academic Success Center (https://www.unt.edu/success/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)

Student Support Services

Listed below are several resources on campus that can support your academic success and physical and mental well-being:

- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- UNT Care Team (https://studentaffairs.unt.edu/dean-of-students/programs-and-services/care-team/)
- UNT Psychiatric Services (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/student-counseling/)

Other student support services offered by UNT include:

- Registrar (https://registrar.unt.edu/index.html)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/dean-of-students/programs-and-services/student-legal-services/)
- Career Center (https://careercenter.unt.edu/)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Center for Belonging and Engagement (https://studentaffairs.unt.edu/eagle-engagement-center/index.html)
- UNT Food Pantry (https://studentaffairs.unt.edu/desresources/programs/food-pantry/index.html)

Tentative Weekly Calendar

Week 1

Monday 8/18/2025 Intro, Knewton, 1.1: Solving linear equations

Wednesday 8/20/2025 1.2: Simple interest

Week 2

Monday 8/25/2025 1.3: Exponential basics and Logarithmic basics, 1.4: Compound interest

Wednesday 8/27/2025 1.4: Compound interest

Week 3

Monday 9/1/2025 Labor Day

Wednesday 9/3/2025 1.5: Future Value of an Annuity, 1.6: Present Value of an Annuity

Week 4

Monday 9/8/2025 1.6: Present Value of an Annuity cont., 1.7: Financial Math extension problems

Wednesday 9/10/2025 2.1: Graphing, generally, 2.2: All about lines

Week 5

Monday 9/15/2025 2.3: Finding points of intersection for two lines, 2.4: Systems of linear equations and matrices

Wednesday 9/17/2025 Review

Week 6

Monday 9/22/2025 Exam 1

Wednesday 9/24/2025 2.5: Applied systems of linear equations, 2.6: Linear Inequalities and Systems of linear inequalities

Week 7

Monday 9/29/2025 2.6: Linear Inequalities and Systems of linear inequalities cont., 2.7: Linear programming, graphically

Wednesday 10/1/2025 2.8: Simplex Method, 3.1: Functions

Week 8

Monday 10/6/2025 3.2: More about Functions, 3.3: Transformations of functions

Wednesday 10/8/2025 3.4: Quadratic functions and Factoring

Week 9

Monday 10/13/2025 3.4: Quadratic functions and Factoring cont.

Wednesday 10/15/2025 3.5: Polynomial Functions, 3.6: Rational functions

Week 10

Monday 10/20/2025 Review

Wednesday 10/22/2025 Exam 2

Week 11

Monday 10/27/2025 3.7: Exponential functions, 3.8: Logarithmic functions

Wednesday 10/29/2025 3.8: Logarithmic functions cont., 4.1: Sets

Week 12

Monday 11/3/2025 4.2: Counting Techniques, 4.3: Probability

Wednesday 11/5/2025 4.4: Expected Value, 4.5: Conditional Probability and Independence

Week 13

Monday 11/10/2025 4.6: More Exponential rules,

Wednesday 11/12/2025 4.7: Function composition and decomposition

Week 14

Monday 11/17/2025 Review

Wednesday 11/19/2025 Exam 3

No Classes from November 24th-28th due to Winter Break/Thanksgiving.

Week 15

Monday 12/1/2025 4.8: Other Algebra topics

Wednesday 12/3/2025 Review

Your Final Exam is on Monday, Dec. 8 from 1:30 pm to 3:30 pm. It is comprehensive and mandatory, worth at least 20% of your overall grade.