# MATH 1180.700: College Math for Business, Economics, and Related Fields Syllabus

## Instructor Contact

**Name:** Marc Grether
**Pronouns:** He/Him
**Office Location:** GAB 416
**Tutoring/Office Hours:** Zoom office hours are by appointment only, but I have a lot of availability even in evenings to meet just with you. Email me to schedule times.
**Email:** grether@unt.edu (Note – my email does not have a "my" in it).
**Communication Expectations:** Please email me to get in touch outside of class. I typically respond in one (1) business day, during business hours. A message received after business hours is considered received the next business day. The best way to reach me is via email. I will work hard to respond as quickly as possible to emails, but it may occasionally take me up to a business day to respond. Though I might reply to an email late at night or on the weekend, you should not expect quick responses outside of the hours of 8 AM – 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 course is takes place 100% online in Canvas. Information on how to be successful in a remote learning environment can be found at UNT Online (https://online.unt.edu/learn). This course is an 8-week course structured with 8 modules. Each module has multiple lessons with assignments and assessments due that week. This course includes the same content as a 16-week course; expect to spend at least twice as much time each week as you would in a 16-week course.

## Course Prerequisites or Other Restrictions

Prerequisite(s): Two years of high school algebra and one year of geometry, and consent of department. Students who feel they acquired solid algebra skills in high school are strongly encouraged to take the mathematics placement exam to see if they may begin in MATH 1190 instead. A grade C or better in MATH 1180 is required when MATH 1180 is a prerequisite for other mathematics courses.

## 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, operations with lines, solve and interpret solutions of systems of linear equations and linear inequalities, and interpret 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 academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the Office of Disability Access website at https://studentaffairs.unt.edu/office-disability-access. You may also contact ODA by phone at (940) 565-4323.

## 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 «MinTech»
- 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 Learn Anywhere (https://online.unt.edu/learn).

## Calculator Policy

Many calculators will be sufficient for the exams on this class. Among good options are the TI-36X,TI-30XIIS, TI-83 or TI-84 (or similar Casio, other manufacturer's calculators). Examples of calculators not allowed: TI-Nspires, TI 92's, TI 89's. Any other utility with alphanumeric/CAS capabilities or the ability to connect to the internet, such as a smartphone.

## Knewton is Required

The homework and some course content will be delivered in Knewton, which must be accessed through via Canvas. You **will not** need a Knerd link as the access is provided directly in Canvas. Note: Mac users may find it easiest to use a browser other than Safari.

## Course Evaluation

Evaluation components include homework, engagement tasks, midterm exams, and the final exam.

Engagement – 10%
Homework – 21%
Average of Midterm Exams – 49%
Final Exam – 20%

## Grade Assignment

A: [90%, ); B: [80%, 90%); C: [70%, 80%); D: [60%, 70%); F: [0%, 60%).

## Course Grade Policies

## Homework

The online homework is worth 21% of your overall course grade. Each assignment is equally weighted. Most homework assignments are Knewton; some will be directly in Canvas. Note: Assignments directly written in Canvas are always called “quizzes” by Canvas, but there is no quiz portion of this class. The Weekly wrapups are included in the Homework portion of the grade. Homework assignments, but not Engagement or Exams, directly in Canvas will be given two attempts with the higher score counting for you.

### What is Knewton?

Knewton is a mastery-based adaptive software designed to determine your ability to complete course assignments. You will proceed through Knewton 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?

A purpose of homework is to provide you with sufficient opportunities to practice, learn, and retain new information and skills. To that end, you will have Knewton and other homework assignments each week. Knewton is adaptive and mastery based. Mastery-based means that the software will provide each student with the sufficient number of questions to determine whether you have mastered the learning objectives. The student who has prepared well before the assignment may have very short assignments, while a less prepared student may have 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, carefully read the “Getting Started with Knewton” information.

### Get the Most Out of Homework

- Have a dedicated notebook for your math homework. Carefully write out your work, especially noting the questions with which you struggled. Your notebook should form a substantial part of your review material for 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 work the exercises on your own, without any aids on exams.

### Where is Knewton?

To access Knewton, select a Knewton assignment in Canvas.

### When are Knewton Homework Assignments Due?

Assignment due dates are listed on the calendar and in Canvas. Knewton assignments are always due at 11:59 PM Central Time. 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.

Late homework is ~~not~~ rarely accepted. If you run into an issue, please let me know with as much lead time as possible. Having said that – it is normal for 'life' to happen. Try to avoid problems by getting ahead. At the end of the term, 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.

Due to the nature of this course having Midterm Exams on Mondays and the fact that many of you have plans to complete work on the weekends, the "real" due date for the homeworks will always be the Sunday before the corresponding Exam. The listed due date is intended to provide a roadmap to best allow you to successfully complete the course, but I want to give you as much time as possible to accommodate various learning plans among my students.

## Midterm Exams

### Exam Structure

The weekly exams will vary in length. The exams will consist of different questions types including multiple-choice, numeric and/or symbolic inputs, as well as detailed "work-out" responses.

You are permitted pen or pencil, blank sheets of paper, and an approved calculator during the exam. I will sometimes provide you with a list of formulas and/or rules, if any, that will be included on your exams. Be sure to ask about this during the exam reviews.

### Exam Content and Dates

There will seven weekly exams covering the content in the course. Each midterm exam is worth 7% of your overall grade for 49% of the overall grade. The exams will vary in length and will be made up of different types of questions including multiple choice, numeric input, and write out your answers.

On certain problems, I typically provide a formula sheet in face-to-face classes. On all of the possibly relevant problems, I will include the same formula sheet(s) within the exam. You will not be allowed to include your own a formula sheet when taking your exams. All you can use are writing implements (e.g. pencil), blank sheets of scratch paper and an approved calculator. The formula sheets will be available in the Weekly Wrapups for you to see and use which will be directly before the exams.

Midterm exams are specific to the content of that Unit. The exams are located in the Module they cover. They are administered online with LockDown Browser and Respondus Monitor with a webcam.

Each midterm exam will have a 75 minute time limit. Each exam will be available at least one week before the due date and is available until 11:59 PM (a minute before midnight Central time) on the

day of the exam which will be a Monday (or Tuesday if Monday is a holiday). Be sure to plan your time so that the exam will be completed before the time it is due. That is, if you start the exam at 11:45PM, then you will only have 14 minutes to complete the exam.

### Final Exam

The final exam is on **Friday**, **October 10th**, comprehensive, required, and is worth 20% of the course grade. The format of the final exam will be the same as the format of the midterm exams.

### Engagement

Engagement tasks consist of a variety of assignments including a class introduction quiz, introduction/ orientation assignments and discussion posts. The discussion assignments are designed to keep you connected with your classmates as well as to keep you informed about what I may want to put on the exams. This graded portion of your course is worth 10% of the grade overall.

## Recommended Steps to Succeed

I hope this advice will be helpful for you. It consists of my observations in the time I have been teaching. I have observed two character traits common to successful students. The traits are maturity and time commitment. Learning requires working when you don't want to – that requires maturity. Learning also requires consistent and diligent dedication of time.

Some additional specific steps:

- Learning math requires a great deal of time and honest effort along with regular and consistent work.
- After class review your notes. If you have questions, ask immediately.
- Actively read through all recommended readings.
- Use the time you spend on your Knewton assignments to learn the material rather than just getting through the homework as fast as possible.
- Complete the Exam Reviews prior to each exam.
- Form a study group with your classmates. Create online groups.
- Make use of the tutoring options available to you: the Math Lab, the Learning Center, and your instructor's tutoring hours.
- The Learning Center offers several tutoring options: Drop-In Tutoring, One-on-One Tutoring, Group Tutoring and Online Tutoring. Additional links for places you can get help at UNT is on the Academic Support and Student Services page in the Canvas Start Here module.
- Work on the assignments consistently well ahead of due date. Waiting until the last minute is a horrible idea.

- Math is not a spectator sport. You must try the problems, finish problems, ask questions, correct your mistakes, put concepts in your own words, and practice, practice, practice. You learn math by doing, not by watching others do math.
- Contact your instructor immediately if you are having problems.

One last thought: As an adult, you need to **self-advocate**. If you are having problems, you are expected to seek help. Most of you, 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 should have the right to learn and engage within an environment of respect and courtesy from others. We will discuss our classroom's habits of engagement and I also encourage you to review UNT's student code of conduct so that we can all start with the same baseline civility understanding (Code of Student Conduct).

## Summary of key dates: Review the registrar's Academic Calendar & Key Dates

## Academic Integrity Policy

Cheating on tests, quizzes or final exams is a serious breach of academic standards and will be punished severely and generally result in a student failing the course. All work done on exams and quizzes must represent only the student's own work, unless otherwise stated in the directions. According to UNT Policy 06.003, Student Academic Integrity, 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.

## Course Time Requirement

The average college student in a 16-week course is expected to spend three hours per week for each one hour of class working on the course to be able to successfully learn the content. If you are an "average" college-level learner, you should spend about nine hours per week to successfully complete this course – but for an 8-week course, allow double that. That is, about 18 hours per week. As this is an average, many students require more than this. If you are struggling and not yet putting in the appropriate amount of time, doing this should be your first step.

## Course Policies

## Attendance

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. In this class, attendance means working through the lecture notes with the aid of the instructional videos and completing assignments and taking exams, as scheduled. It is assumed you will do this.

## Late Work

Due dates are expected to be followed and are intended to allow you time to complete the course on time. As such, I will rarely accept late work. If exceptional circumstances occur, please reach out to me as soon as possible.

## Exam Policy

I structure my course to balance the time necessary for students to learn the necessary content, with the need to have regular midterm exams. As such, students are expected to take the exams on the given day or early. In the event of a schedule conflict with a university function, dental/physician's appointment, wedding, formal, etc., the student should make every effort to take the test early. In the event that 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 may be recorded for that exam. If your final exam score is higher than one (or two) of your midterm exam scores, then up to the two lowest midterm exam grade(s) will be replaced with final exam grade. If you receive a zero for academic dishonesty on an exam, the final exam score will NOT replace that zero.

## Instructor Responsibilities and Feedback

My goal in this course is to provide an environment conducive to your learning. I work hard to be available outside of my tutoring/office hours, via email or via Zoom. I welcome questions about any portion of the course and am happy to clarify any issues as they arise. 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 my past experience suggests that this can take me up to two weeks to get back.

## Timeline for Grading

For each written assignment (e.g. discussion posts, workout portion of the exams, etc.), I will endeavor to grade and post grades within one business day. When circumstances prevent me from meeting this goal, I will always get grades back to you within 1 week.

## Drop/Withdraw Policy

If the student is unable to complete this course, it is his/her 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 performance grade, usually an F.

If you are considering dropping, it is strongly recommended that you discuss the matter with me as soon as possible.

## Incomplete

Beginning September 27th, 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.

## Online Etiquette

Your communication with me and your classmates is expected to be in line with UNT's General Online Communication Guidelines.

In general, don't say things you would be uncomfortable saying to someone in person and strive to communicate clearly. Online interaction makes some common discussions harder because of the need to be very explicit in your meaning due to the lack of other common social cues. Work to assume good intent on behalf of others and work to be clear in your communication and most other issues will take care of themselves.

## Other ways to get help for this course:

What tutoring/office hours are for: Office hours provide a dedicated time for students to get one-on-one, or small group, time with an instructor. Come get help!! Come by my in-person times (on the first page) or email me to set up a time on Zoom.

Math Lab (SAGE 130): See https://math.unt.edu/undergraduate/math-lab.html

The learning center offers several tutoring options: Drop-In Tutoring, One-on-One Tutoring, Group Tutoring and Online Tutoring. See http://learningcenter.unt.edu/tutoring.

## Syllabus Change Policy

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

## UNT Policies

## Academic Integrity Policy

Cheating on tests, quizzes or final exams is a serious breach of academic standards and will be punished severely and generally result in a student failing the course. All work done on exams and quizzes must represent only the student's own work, unless otherwise stated in the directions. According to UNT Policy 06.003, Student Academic Integrity, 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 at UNT.

## Emergency Notification and Procedures

Students will be notified by Eagle Alert if there is a campus closing that will impact a class. The calendar is subject to change: see the Emergency Notifications and Procedures Policy

## Important Notice for F-1 Students taking Distance Education Courses

**Federal Regulation**

Federal regulations state that students may apply only 3 fully-online semester credit hours (SCH) to the hours required for full-time status for F-1 Visa (PDF) holders. Full-time status for F-1 Visa students is 12 hours for undergraduates and 9 hours for graduate students.

## Tentative Weekly Calendar

### Week 1

Monday 8/18/2025 Material to cover: Introduction to class: Completely review Start Here Module and Syllabus review, 1.1: Solving linear equations

Tuesday 8/19/2025 Material to cover: 1.2: Simple interest Due in Knewton: 1.1 Part 1 Due in Canvas 1.1 Part 2

Wednesday 8/20/2025 Material to cover: 1.3: Exponential basics and Logarithmic basics Due in Knewton: 1.2 Due in Canvas Class Introduction Quiz, LockDown Browser and Respondus Monitor Quiz

Thursday 8/21/2025 Material to cover: 1.4: Compound interest Due in Knewton: 1.3 Due in Canvas Introduce Yourself Discussion

Friday 8/22/2025 Due in Knewton: 1.4 Due in Canvas Week 1 Wrapup (due Sunday) Review

### Week 2

Monday 8/25/2025 Due in Canvas Exam 1

Tuesday 8/26/2025 Material to cover: 1.5: Future Value of an Annuity

Wednesday 8/27/2025 Material to cover: 1.6: Present Value of an Annuity, Optional 1.7: Financial Math extension problems Due in Knewton: 1.5

Thursday 8/28/2025 Material to cover: 2.1: Graphing, generally Due in Knewton: 1.6

Friday 8/29/2025 Material to cover: 2.2: All about lines Due in Knewton: 2.1,2.2 Part 1 Due in Canvas 2.2 Part 2, Week 2 discussion, Week 2 Wrapup (due Sunday) Review

## Week 3

Monday 9/1/2025 Labor Day

Tuesday 9/2/2025 Due in Canvas Exam 2

Wednesday 9/3/2025 Material to cover: 2.3: Finding points of intersection for two lines, 2.4: Systems of linear equations and matrices Due in Knewton: 2.3,2.4

Thursday 9/4/2025 Material to cover: 2.5: Applied systems of linear equations, 2.6: Linear Inequalities and Systems of linear inequalities Due in Knewton: 2.5, 2.6

Friday 9/5/2025 Material to cover: 2.7: Linear programming, graphically Due in Knewton: 2.7 part 1, 2.7 part 2 Due in Canvas Week 3 Wrapup (due Sunday) Review

## Week 4

Monday 9/8/2025 Due in Canvas Exam 3

Tuesday 9/9/2025 Material to cover: 2.8: Simplex Method Due in Knewton: 2.8

Wednesday 9/10/2025 Material to cover: 3.1: Functions Due in Knewton: 3.1

Thursday 9/11/2025 Material to cover: 3.2: More about Functions Due in Knewton: 3.2 part 1 Due in Canvas 3.2part 2

Friday 9/12/2025 Material to cover: 3.3:Transformations of functions Due in Knewton: 3.3 Due in Canvas Week 4 discussion, Week 4 Wrapup (due Sunday) Review

## Week 5

Monday 9/15/2025 Due in Canvas Exam 4

Tuesday 9/16/2025 Material to cover: 3.4: Quadratic functions and Factoring Due in Knewton: 3.4 Part 1, 3.4 Part 2

Wednesday 9/17/2025 Material to cover: 3.5: Polynomial Functions Due in Knewton: 3.2 Part 3

Thursday 9/18/2025 Material to cover: 3.5: Polynomial Functions cont., 3.6: Rational functions Due in Knewton: 3.5

Friday 9/19/2025 Material to cover: 3.6: Rational functions cont. Due in Knewton: 3.6 Due in Canvas Week 5 Wrapup (due Sunday) Review

## Week 6

Monday 9/22/2025 Due in Canvas Exam 5

Tuesday 9/23/2025 Material to cover: 3.7: Exponential functions Due in Knewton: 3.7

Wednesday 9/24/2025 Material to cover: 3.8: Logarithmic function Due in Knewton: 3.8 Part 1

Thursday 9/25/2025 Material to cover: 3.8: Logarithmic function cont. Due in Knewton: 3.8 Part 2

Friday 9/26/2025 Material to cover: 4.1: Sets, 4.2: Counting Techniques  Due in Knewton: 4.1, 4.2 Due in Canvas Week 6 discussion, Week 6 Wrapup (due Sunday)  Review

## Week 7

Monday 9/29/2025  Due in Canvas Exam 6

Tuesday 9/30/2025 Material to cover: 4.3: Probability Due in Knewton: 4.3 Part 1

Wednesday 10/1/2025 Material to cover: 4.4: Expected Value Due in Knewton: 4.3 Part 2 Due in Canvas 4.4

Thursday 10/2/2025 Material to cover: 4.5: Conditional Probability and Independence Due in Knewton: 4.5

Friday 10/3/2025 Material to cover: 4.6: More Exponential rules Due in Knewton: 4.6 Part 1 Due in Canvas 4.6 Part 2, Week 7 Wrapup (due Sunday)  Review

## Week 8

Monday 10/6/2025  Due in Canvas Exam 7

Tuesday 10/7/2025 Material to cover: 4.7: Function composition and decomposition

Wednesday 10/8/2025 Material to cover: 4.8: Other Algebra topics Due in Knewton: 4.8 Part 1 Due in Canvas 4.7, 4.8 Part 2, 4.8 Part 3

Thursday 10/9/2025  Due in Canvas Week 8 Wrapup  Review

Friday 10/10/2025  Due in Canvas Final Exam

Your Final Exam is on 10/10. It is required, comprehensive and worth at least 20% of your overall grade.