

# Math 1190 Business Calculus

Spring 2019

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| <b>Instructor: Yingyu Zhang</b>   | <b>Office: GAB 428</b>  |
| <b>Office hours:</b><br><b>Wed: 12:30 – 2:30 pm</b><br><b>Thur. 12:30 – 1:30 pm</b><br><b>Fri. 12:30 – 1:30 pm</b>  | <b>Email: <a href="mailto:yingyuzhang@my.unt.edu">yingyuzhang@my.unt.edu</a></b><br><b>Policy:</b> Include course name, number and section and your full name in the subject header. Email without this information may not get opened. Email will be returned in a timely manner, but may occasionally take up to two (2) business days. |
| <b>Class meets:</b><br><b>Tuesday, Thursday:</b><br><b>11:00 am – 12:20 pm</b>  | <b>Final Exam date and time: Wed. May 8</b><br><b>10:30 am – 12:30 pm</b><br>Room location: Regular classroom<br><a href="http://registrar.unt.edu/exams/final-exam-schedule">http://registrar.unt.edu/exams/final-exam-schedule</a>  |
| <b>Course description:</b> Differential and integral calculus with emphasis on applications to business.<br>Prerequisite(s): Two years of high school algebra and consent of department; or <a href="#">MATH 1100</a> or <a href="#">MATH 1180</a> with a grade of C or better.   |   |
| <b>Online Materials:</b> This course has no physical textbook. Homework assignments will require accessing Knewton through your UNT Canvas account. Log in to Canvas at <a href="http://unt.instructure.com">unt.instructure.com</a> , read through “How Knewton works,” then select an Assignment to begin. Additional resources are listed in Canvas.   |   |
| <b>Calculator Policy:</b> TI 83, TI 83 Plus, TI 84, TI 84 Plus or equivalent, their use will be supported in class. Examples of calculators not allowed: <a href="#">TI-Nspires</a> , <a href="#">TI 92'2</a> or any other utility with alphanumeric/CAS capabilities ARE <b>NOT permitted</b> , nor are any devices which are capable of connecting to other devices or the internet. A calculator may not be shared during an exam. |   |
| <b>Evaluation:</b><br>Homework 20%<br>Mid term Exams 20% each<br>Final Exam 20%   | <b>Grade Assignment:</b><br>A: [90%, 100%); B: [80%, 90%); C: [70%, 80%);<br>D: [60%, 70%); F: [0%, 60%).<br><br>A grade of C or better is required for this course to serve as prerequisite for any math course.   |
| <b>Grade Determination:</b> Student grade is determined solely by his/her performance on the evaluation criteria. Grades reflect your proficiency of the course content as you have demonstrated them on the evaluation criteria.   |   |
| <b>Final Grade:</b> Students may access their course grades online via the EIS system: <a href="http://my.unt.edu/grades">my.unt.edu/grades</a>   |   |

**Learning objectives: Upon successful completion of this course, students will:**

1. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.
6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

**Disability Accommodations:** 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 see the Office of Disability Access website at <http://www.unt.edu/oda>. You may also contact them by phone at **940.565.4323**.

Important dates: **The list is found at: <https://registrar.unt.edu/registration/fall-registration-guide>**

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| Classes Begin   | 1/14          |
| Labor Day (no classes; university closed)   | 1/21          |
| Beginning this date a student may drop a course with a grade of W by completing the Request to Drop a Course form and submitting it to the Registrar's Office. See link for complete instructions Dropping a Class. | 1/29          |
| Last day for a student to drop a course.  | 4/1 (no joke) |
| Beginning this date, a student who qualifies may request an Incomplete, with a grade of I.  | 4/8           |
| Last day to withdraw (drop all classes). Grades of W are assigned.  | 4/19          |
| Pre-Finals Days   | 5/1-5/2       |
| Reading Day (no classes)  | 5/3           |
| Final Exams   | 5/4-5/10      |

## **Policies:**

### **Academic Dishonesty:**

Cheating on final exams, on in-class tests, or on quizzes 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 in-class exams and quizzes must represent only the student's own work, unless otherwise stated in the directions. See <http://faculty.success.unt.edu/academic-integrity> for details on academic integrity at UNT.

**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 the headphones. Do not work on unrelated assignments during class.

**Course Requirements:** As a general rule, average college students are expected to spend three (3) hours per week for each one (1) 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 (9) hours per week if you expect to successfully complete this course. Adjust for more (or less) hours to accommodate your learning level.

**Drop/Withdrawal Policy:** If the student is unable to complete this course, it is his/her responsibility to formally withdraw from the course. You may drop a course by completing the [Request to Drop form](https://registrar.unt.edu/sites/default/files/drop_request_fillable.pdf) at [https://registrar.unt.edu/sites/default/files/drop\\_request\\_fillable.pdf](https://registrar.unt.edu/sites/default/files/drop_request_fillable.pdf). The last date to withdraw from all of your classes is 4/1. If the student does not properly withdraw from the course but stops attending, s/he 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.

**Homework:** Homework will all be due on Canvas at [unt.instructure.com](https://unt.instructure.com). The homework is provided through Knewton. This software is a mastery-based, adaptive software, which is intended to thoroughly judge your ability to complete the assignments. You will be able to proceed through Knewton much more quickly if you review your notes and seek out additional review/help before starting the assignments. Read through "How Knewton works" in Canvas before your first assignment for best results.

Homework is due at 11:59 pm on the date listed. Most assignments are due on Fridays (except right

around exams) and there are typically many assignments due each week. To successfully complete the assignments, you must carefully manage your time. I would recommend that you plan to complete assignments well ahead of time at a routine time, such as right before class. This will allow you to bring questions to class and then work through the assignments more quickly.

- **Getting the most out of the homework**

- You should have a dedicated notebook for your math homework. Carefully write out your work, especially noting the questions you struggled with. This should form a substantial part of your review material prior to the exams.

**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. Each exam is 20% of the course. Content and tentative dates are listed on the attached calendar.

**Exam Etiquette:**

- Have only the exam, pencil, eraser and calculator out during an exam. Work out space is provided on the actual exam and you can get additional paper from the instructor. You will not be permitted to have any of your own scratch paper during an exam.
- Turn off all electronic devices (unless medically necessary), this includes cell phones, pagers, etc.
- Handling of ANY such electronic devices during an exam will be construed as cheating (receiving unauthorized aid) and may result in a zero for that exam.
- Do not wear HATS or CAPS during exams.
- Do not share any materials during an exam. This includes, but is not limited to pencils, erasers, calculators, etc.
- Only approved calculators during an exam. You may have both a scientific and a graphing calculator. It is your responsibility to know how to work the calculator(s) you bring to a test.

**Final Exam:** The final exam is on **Wed. May 8. 10:30 am – 12:30 pm**

The final exam is comprehensive and is 20% of the course grade.

**Incomplete, the Grade of:** 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:

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

**Make-up Exam Policy:** An exam may be taken prior to the scheduled date. A week’s notice for this accommodation is required. In the event of a schedule conflict with a university function, dental/physician’s appointment, wedding, or whatever, the student must take the test early. If a student does not take a scheduled exam, a zero will be recorded for that exam and a notice may be sent through the registrar’s office.

There are three in-class exams. If your final exam score is higher than one of your in-class exam scores, then that in-class exam grade will be replaced with final exam grade. If you miss an in-class exam, a zero will be recorded for that exam grade and your final exam score will replace that one zero. If you receive a zero for academic dishonesty on an exam, the final exam score will NOT replace that zero.

**Math Lab** (New Location: Sage 130): Go to Website: [www.math.unt.edu/mathlab](http://www.math.unt.edu/mathlab) for information.

### **Progress Reports:**

Students needing progress reports completed/signed for athletics, scholarships and/or any other organization must attend office hours to get them completed.

### **Attendance:**

YOU are responsible for attending the required class meetings as stated in the course schedule guide.

### **Student Behavior:**

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for

student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at [www.unt.edu/csrr](http://www.unt.edu/csrr)

**Student Perceptions of Teaching (SPOT):** Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The SPOT survey will be made available later this semester to provide you with an opportunity to evaluate how this course is taught. You will receive an email on from "UNT SPOT Course Evaluations via IASystem Notification"(no-reply@iasystem.org) with the survey link. Please look for the email in your UNT email inbox. Simply click on the link and complete your survey. Once you complete the survey you will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website at [www.spot.unt.edu](http://www.spot.unt.edu) or email [spot@unt.edu](mailto:spot@unt.edu).

## A day by day calendar

|                | <b>Tuesday</b>   | <b>Thursday</b>  |
|----------------|--|--|
| <i>Week 1</i>  | 01/15/19<br>Intro, Idea of a Limit   | 01/17/19<br>Limit rules, Continuity  |
| <i>Week 2</i>  | 01/22/19<br>Continuity Cont., Limits at infinity                                   | 01/24/19<br>Average rate of change and tangent lines by graphing, Definition of the derivative |
| <i>Week 3</i>  | 01/29/19<br>Derivative Rules, part 1   | 01/31/19<br>Derivative Rules, part 2   |
| <i>Week 4</i>  | 02/05/19<br>Product and Quotient rules, preview                                    | 02/07/19<br>Review   |
| <i>Week 5</i>  | 02/12/19<br>Exam 1   | 02/14/19<br>Product and Quotient rules cont., Chain rule                                       |
| <i>Week 6</i>  | 02/19/19<br>Chain rule cont., Marginal Applications to Business                    | 02/21/19<br>Marginal applications cont., Elasticity of demand                                  |
| <i>Week 7</i>  | 02/26/19<br>First derivative test and graphing                                     | 02/28/19<br>Using the second derivative  |
| <i>Week 8</i>  | 03/05/19<br>Absolute Extrema   | 03/07/19<br>Optimization   |
| <i>Week 9</i>  | 03/19/19<br>Review   | 03/21/19<br>Exam 2   |
| <i>Week 10</i> | 03/26/19<br>Antiderivatives  | 03/28/19<br>Substitution   |
| <i>Week 11</i> | 04/02/19<br>The area question  | 04/04/19<br>Definite integrals and rules for definite integrals                                |
| <i>Week 12</i> | 04/09/19<br>Definite integrals and rules for definite integrals cont.              | 04/11/19<br>Fundamental theorem of calculus  |
| <i>Week 13</i> | 04/16/19<br>Fundamental theorem of calculus cont., Area between curves; Gini index | 04/18/19<br>Area between curves; Gini index cont., Applications of integration                 |
| <i>Week 14</i> | 04/23/19<br>Review   | 04/25/19<br>Exam 3   |
| <i>Week 15</i> | 04/30/19<br>Additional integration topics  | 05/02/19<br>Review   |
| <i>Week 16</i> | Final Exams  |  |