

## Math 1451 - Calculus I - Fall 2018

### COURSE SYLLABUS

Instructor: Wenjing Zhang

Office: MATH 214

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Office Hours: Fridays at 2-5pm and by appointment—schedule 72 hours prior

Ways to contact instructor: via e-mail or in person (office hours)

Please put “Math 1451” in the e-mail subject line. I will respond within 24 hours during the workweek (excluding holidays) and 48 hours during the weekend.

Required Text: Calculus, by Smith, Strauss, and Toda, Kendall Hunt.

3 semester textbook, 7th edition. Source:

<https://he.kendallhunt.com/product/calculus>

Note: Do not buy the WebAssign bundle, as we will use WeBWorK- free online HW.

The textbook is available at Amazon.com, TTU Barnes and Nobles, Varsity Bookstores, etc.

Most convenient format: **E-Book** (can be used in classroom, at home, tutoring center, etc)

Course Time and Location: MWF 11am at MATH 109

Course Prerequisite: at least a C in MATH 1350 or 1550, or 7 on MPE, or B in MATH 1321, or C in 1321 with 5 on MPE, or 660 on SATM, or 29 on ACTM, or 3 on AP AB Calculus with 5 on MPE.

Course Purpose: *The goals of this course include developing the student’s understanding of the concepts of differentiation and integration, and applying these concepts to problem solving and real-world applications. Instructors should emphasize the concepts of limit, continuity, and differentiability to properties of graphs. Intuitive discussions and “picture arguments” are acceptable, as well as a few short proofs (e.g., prove the product rule for differentiation).*

Course Outline: The information below serves a tentative timeline for the material to be covered:

Chapter 1 (Sections 1.1 – 1.5) – Aug 27 – Sep 7

Chapter 2 (Sections 2.1 – 2.4) – Sep 10 – Sep 19

Chapter 3 (Sections 3.1 – 3.8) – Sep 19 – Oct 15

1. Gateway I exam: September 28 in class

2. Gateway I retake: October 12 in class

Chapter 5 (Sections 5.1 – 5.5, 5.7 – 5.8) - Oct 15 – Nov 1

1. Gateway II exam: November 9 in class

2. Gateway II retake: November 16 in class

Chapter 4 (Sections 4.1 – 4.6) – Nov 1 – Nov 22

1. Midterm exam: November 28 in class

After Nov 22: Review of materials and Final exam review

Final exam: December 11, 10:30am-1:00pm.

Core Curriculum/Graduation Requirements: Math 1451 satisfies part of the university core curriculum requirement in Mathematics.

Course-specific Learning Objectives and Corresponding Outcomes: Students will:

- apply arithmetic, algebraic, geometric, statistical, and logical reasoning to solve problems;
- represent and evaluate basic mathematical and/or logical information numerically, graphically, and symbolically;
- interpret mathematics and/or logical models such as formulas, graphs, tables and schematics, and draw inference from them.

In particular, students will develop skills to:

1. *explain the concept of continuous functions;*
2. *compute instantaneous rate of change;*
3. *compute derivatives of polynomial and transcendental functions;*
4. *use differentiation to solve related rate and optimization problems;*
5. *compute definite and indefinite integrals;*
6. *apply specific concepts to certain problems from the real world and other sciences.*

Methods of Assessment of Learning Outcomes: Assessment will be achieved through multiple methods. Class grades will be assigned as follows:

- **WeBWorK Homework Sets: 20% in total**
- **Gateway Exam (G1) - Differentiation (10 Qs, weighs 10%); 0% for less than 7 correct answers; 10% otherwise**
- **Midterm: 30%**
- **Gateway Exam (G2) - Integration (10 Qs, weighs 10%); 0% for less than 7 correct answers; 10% otherwise**
- **Comprehensive Common Final Exam: 30% in total**

*All stated examinations are mandatory in order to pass the class.*

*Each gateway exam contains a set of 10 short questions on differentiation, resp. integration (derivatives and integrals to compute). Each gateway exam will take 30 minutes and will be scheduled by the instructor. Each failed gateway exam (G1 or G2) may only be retaken **only once**. Each gateway is administered at a unique time to the entire class – dates TBA. Procedural details will be provided in class.*

*Grading Scale*

A = 100%–90.00%, B = 89.99%–80.00%, C = 79.99%–70.00%, D = 69.99%–60.00%, F = 59.99%–0%

Grade Inquiry Policy: Any student who has questions about any grade received on an assessment should meet with the instructor in person, if possible, within a one-week period of receiving the

graded assessment. At this meeting, the instructor will provide an explanation of the grading and computation of the score. Inquires received after the one-week period will not be considered.

*Calculator:* A graphing calculator is a useful tool for this course. However, calculators or other electronic devices will NOT be permitted on quizzes, in-class exams, and the final exam.

*Reading:* Reading the material from the textbook (paper or electronic form) is mandatory.

**WeBWorK:** WeBWorK is an internet-based method for delivering homework problems to students. Visit the course webpage for more information on how to access WeBWorK and how to enter your solutions; see Helpful Documents. You will need your eRaider username and student ID number with the R to log into WeBWorK. The WeBWorK system responds by telling you whether an answer (or set of answers) is correct or incorrect and also records whether you answered the question correctly or incorrectly. You are free to try a problem as many times as you wish until the due date. It is your responsibility to check WeBWorK for new assignments. Please do not wait until the day the assignment is due to begin and/or send questions. I will not answer questions e-mailed to me within 24 hours from the HW deadline.

A key educational benefit of this system is that if you get an incorrect answer, you receive immediate feedback while the problem is still fresh in your mind. You can then correct a careless mistake, review the relevant material before attacking the problem again, or seek help (frequently via e-mail) from classmates or the professor. You are strongly encouraged to prepare exam quality written solutions for each WeBWorK problem. It is not enough to solve the problems haphazardly on miscellaneous paper. Write the solutions well and keep those solutions.

Regarding the Comprehensive Final Exam: The common final represents a **course requirement**. **A student who did not complete the final exam, but otherwise completed all the other requirements successfully, cannot be assigned a passing letter grade.** Each designated instructor has to keep his/her copy of partial scores and grades for each student for 2 calendar years from the date of recording the grade. The final exam will be given in a proctored environment. The date for the final exam was scheduled prior to start of the semester; the location will be announced at the end of the semester. The date and time of the exam cannot be changed. Final exam conflicts may arise only between two or more math courses, in which case the course with lowest number has priority in maintaining the exam date and time.

For the final exam, students should not purchase a blue book. The exam will be distributed with on paper, with spaces to fill in/fill out. *No other printed materials and electronic devices are allowed during the final.* Scratch papers may be checked by the instructors.

*Make-Up Policy:* There are no make-up exams except for absence due to religious observance or absence due to officially approved trips (see Class Attendance below). The student should make arrangements to take an exam and/or quiz prior to his/her absence. In the event that an advance notice cannot be provided, the student must contact the professor within a reasonable amount of time to discuss the missed assessment.

There are no make-up WeBWorK homework sets assignments except for absence due to religious observance or absence to due officially approved trips (see Class Attendance below). If a student

misses a WeBWorK homework sets for one of the above reasons, the homework set will be reopened.

*Class Attendance: Students are cautioned that active participation is necessary for success. **Attendance will be taken regularly.** Students who miss no more than 4 hours of classroom time during the whole semester will receive a bonus (extra credit) of 2% to their overall grade. (Unfortunately, any excuses including medical excuses will not help obtain the bonus).*

*Absence due to religious observance* - The Texas Tech University OP 34.19 states that a student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. As your instructor, I request that notification be made in writing and submitted no later than the 15th class day of the semester.

*Absence due to officially approved trips* - The Texas Tech University OP 34.04 states department chairpersons, directors, or others responsible for a student representing the university on officially approved trips must notify the student's instructors of the departure and return schedules. The instructor so notified must not penalize the student, although the student is responsible for material missed. Any student absent because of university business must be allowed to make up missed work within a reasonable span of time or have alternate grades substituted for work due to an excused absence. Students absent because of university business must be given the same privileges as other students.

*Academic Integrity* (extracted from OP 34.12): It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

**During Exams, no electronic devices are allowed, including but not limited to: iPhones, smart watches, calculators of any kind, pagers. Please have all phones turned off and placed away during the classroom.**

*Civility in the Classroom:* Incivility is any action that interferes with the classroom learning environment. This includes, but is not limited to, eating, arriving late, leaving early, a ringing cell phone, text messaging, sleeping, chatting during class, dominating the class discussion by not allowing other students to speak, and putting books away before the end of class. Be respectful to the instructor and to your fellow students. I will ask anyone participating in what I perceive to be inappropriate behavior to stop immediately.

*Accommodation for Students with Disabilities* (extracted from OP 34.22): Any student who, because of a disability, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible to make the necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until the appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.

### *Supplemental Resources*

- Supplemental (Evening) Instruction for Calculus (sponsored by the department): TBA
- Tutoring and Study Center (TSC) – a free tutoring center provided by the Mathematics & Statistics Department located at in Room 106 of the Math Building. Visit <http://www.math.ttu.edu/Undergraduate/Resources/TSC/tutor.shtml> for the most recent hours of operation. It normally opens after 10 days of classes each semester.
- Learning Center – a free tutoring center located in Room 80 of Holden Hall. Online tutoring is also available.

Visit <http://www.depts.ttu.edu/soar/LC/Index.php> for more information.

- Tutoring List – a list of tutors student may hire can be found at <http://www.math.ttu.edu/Undergraduate/Resources/TSC/tutor.shtml> or in Room 201 of the Math Building.

- Supplemental Instruction (University) – free, peer-led review sessions for historically difficult courses. Visit <http://www.depts.ttu.edu/soar/SI/> for more information.