Spring 2021. MATH2450. Sections 002 and D01.

Calculus III With Applications.

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All time reference is Lubbock (Central) time.

Classroom and Time: TR 9:30 am - 10:50 am, and T 11 :00 am- 11:50 am. All lectures and meetings are online on Zoom. The Zoom meeting ID, passcode and link were posted on TTU Blackboard (ttu.blackboard.com) for each section, and also sent to students.

Office hours: MWF 2:00 pm - 3:00 pm, online on Zoom (same meeting ID, passcode and link as lectures).

Course website: *http://www.math.ttu.edu/~lhoang/2021Spr-M2450s/*

Prerequisite: (at least a) C in Math 1352 or Math 1452.

Text: *CALCULUS,* by K. Smith, M. Strauss and M. Toda; 7th Edition published by Kendall Hunt.

Course Description: Partial differentiation, functions of several variables, multiple integrals, line integrals, surface integrals, Stokes Theorem. Applications and problem-solving are strongly emphasized. Partially fulfills Core Mathematics requirement.

Course Outline:

- Chapter 9 – (9.1-9.4 for Review, 9.5-9.7) Vectors in the Plane and in Space (6 hours)
- Chapter 10 – (10.1-10.4) Vector-Valued Functions (5 hours)
- Chapter 11 – (11.1-11.8) Partial Differentiation (11 hours)
- Chapter 12 – (12.1-12.8) Multiple Integration (12 hours)
- Chapter 13 – (13.1-13.7) Vector Analysis (11 hours)

Expected Learning Outcomes: Students develop skills in differentiation and integration needed to solve problems in 3-dimensional space. In particular the students will master the concepts of

- tangent and normal vectors, and their geometric and physical interpretations
- partial derivatives, tangent planes, directional derivatives, and gradients, and how to compute them
- three-dimensional integration, and how to compute such integrals
- vector fields, divergence, and curl, and certain applications to the real world and other sciences

Methods of Assessment of Learning Outcomes: Assessment of the learning outcomes will be achieved through homework assignments, quizzes, three midterm exams, and a final exam. The exams will have both multiple choice questions and comprehensive problems.

Homework Assignments: will be assigned weekly through Webwork. Students will receive the instructor's message for login information. Due dates are indicated on each assignment. Students should spend very first week to get familiar with the system. If a student does not receive Webwork message from the instructor by Tuesday, January 26, 2021, he/she must contact the instructor immediately.
Webwork Link: *https://webwork.math.ttu.edu/webwork2/spr21lhoangm2450sD01s002/*

Written Quizzes: Quizzes will be given occasionally. Students will upload their solutions (as PDF files) to Blackboard for grading.

Grading Policy: Homework will count for 24% of the grade. **However, your overall grade in the Homework at the end of the semester must be at least 50%, otherwise you automatically fail the course.** There will be three midterm exams in class, each will count for 15% of the grade. The final exam will count for 30% of the grade. No make-up exams are given unless legitimate documents for excuses are presented to the instructor at least a week in advance. Quizzes will add maximum 4 points and attendance will add maximum 2 points. The maximum final score is 105. (The scores will be calculated to 2 decimal places, for example, 69.98.)
Grading Scale: A ≥ 90, 80 ≤ B < 90, 70 ≤ C < 80, 60 ≤ D < 70, F < 60.

Calculators: Only scientific calculators are allowed in exams. These calculators can calculate the values of the standard algebraic, trigonometric, exponential and logarithmic functions. Graphing calculators and calculators that can do symbolic manipulations are NOT allowed.

Attendance Policy: Students must go to lectures and responsible for all material covered in class. If students miss no more than 4 classes, they will have extra 2 points added to the final average score.

Examination Schedule:

- Midterm 1: Thursday, February 18, 9:30 am - 10:50 am, Online on Webwork.
- Midterm 2: Thursday, March 18, 9:30 am - 10:50 am, Online on Webwork.
- Midterm 3: Thursday, April 15, 9:30 am - 10:50 am, Online on Webwork.
- FINAL EXAM: Saturday, May 8, 4:30 pm - 7:00 pm, Online on Webwork.

Critical Dates:

- Jan. 20: Classes begin.
- Jan. 25: Last day for student-initiated addition of a course on MyTech.
- Feb. 4: Last day for student-initiated drop on MyTech without academic penalty (drop does not count against drop limit).
- Feb. 26: Student wellness day. No classes.

- Mar. 19: Spring Vacation.
- Apr. 5: No classes.
- Apr. 21: Last day for student-initiated drop on MyTech with academic penalty (counts against drop limit).
- Apr. 27 - May. 4: No examinations.
- May. 4: Last day of classes.

TTU OPs:

ADA accommodations (TTU Operating Policy 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 any 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 student until 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.

Absence for observance of a religious holy day (TTU Operating Policy 34.19). 1. "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code 11.20. 2. A student who intends to observe a religious holy day should make that intention known 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. 3. A student who is excused under Section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

Academic Honesty (TTU Operating Policy 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 it 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.

Illness-Based Absence Policy: If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, you are encouraged not to attend face-to-face class meetings or events. Please review the steps outlined below that you should follow to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. **If you are ill and think the symptoms might be COVID-19-related:**

a. Call Student Health Services at 806.743.2848 or your health care provider.
b. Self-report as soon as possible using the Dean of Students COVID-19 webpage. This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
c. If your illness is determined to be COVID-19-related, all remaining documentation and communication will be handled through the Office of the Dean of Students, including notification of your instructors of the period of time you may be absent from and may return to classes.
d. If your illness is determined not to be COVID-19-related, please follow steps 2.a-d below.

2. **If you are ill and can attribute your symptoms to something other than COVID-19:**
   a. If your illness renders you unable to attend face-to-face classes, participate in synchronous online classes, or miss specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note that Student Health Services and your own and other health care providers may arrange virtual visits.
   b. During the health provider visit, request a "return to school" note.
   c. E-mail the instructor a picture of that note.
   d. Return to class by the next class period after the date indicated on your note.

Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.

Alert: This is a 4-hour credit course. It is important, difficult, fast and intense. Students must work hard or very hard to stay on top of it!

Handouts: See updates on Blackboard and the course's webpage. More will be communicated with the students.

- [Syllabus](#)

Links: See updates on the course's webpage. More will be communicated with the students.

- [WeBWork](#)
- [How to Enter Answers in WeBWorK (Prof. D. Gilliam)](#)
- Additional videos of lectures: Suggested videos are by Prof. Magdalena Toda, see links on the course's webpage. On [Prof. Eugenio Aulisa's class page](#), you can find other sets of videos he collected.