

## Fall 2019. MATH2450. Section 022.

### Calculus III With Applications.

**Instructor:** Luan Thach Hoang

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Office hours: MWF 11:00 a.m. - 12:00 p.m.

**Classroom and Time:** MW 8:00 a.m. - 9:50 a.m., Room MA 112 (Mathematics Building)

**Course website:** <http://www.math.ttu.edu/~lhoang/2019Fall-M2450/>

**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
- Chapter 10 – (10.1-10.4) Vector-Valued Functions
- Chapter 11 – (11.1-11.8) Partial Differentiation
- Chapter 12 – (12.1-12.8) Multiple Integration
- Chapter 13 – (13.1-13.7) Vector Analysis

**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, 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.

**Webwork Link:** <https://webwork.math.ttu.edu/webwork2/f19lhoangm2450s022/>

**Grading Policy:** Homework will count for 25% of the grade. The lowest score for homework will be dropped. 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. All in-class exams are closed-book. No make-up exams are given unless legitimate documents for excuses are presented to the instructor at least a week in advance.

Grading Scale: A: 90%-100%, B: 80%-89%, C: 70%-79%, D: 60%-69%, F: below 60%

**Calculators, Electronic Devices:** In all exams, **calculators and formula sheets are not permitted.** Electronic devices which can store formulas, including cell phones, should be turned off and stored during the exams.

**Attendance Policy:** Students must go to lectures and responsible for all material covered in class.

### **Examination Schedule:**

- Midterm 1: Wednesday, Sep. 18, in class.
- Midterm 2: Wednesday, Oct. 16, in class.
- Midterm 3: Wednesday, Nov. 13, in class.
- FINAL EXAM: Tuesday, December 10, 2019, 10:30 a.m. - 1:00 p.m., Room TBA

### **Critical Dates:**

- Aug. 26: Classes begin.
- Aug. 29: Last day for student-initiated addition of a course on MyTech.
- Sep. 2: Labor Day. University Holiday.
- Sep. 11: Last day for student-initiated drop on MyTech without academic penalty.
- Nov. 26: Last day for student-initiated drop on MyTech with academic penalty.
- Nov. 26 - Dec. 5: No exams.
- Nov. 27 - Dec. 1: Thanksgiving holiday. No classes.
- Dec. 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 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.

**Civility in the Classroom:** Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

**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!

**Advice:** Come to class regularly, work on homework problems. Ask questions in class and get help from the Tutoring Center (information will be provided) or from the instructor during the office hours. Since a lot of material will be covered, students have to master them quickly and *do not* wait too late until the midterms or the final exam. Students are encouraged to give feedbacks to the instructor during the semester.

**NOTE:** When needed, the instructor will communicate with the students using their TTU email addresses. At the beginning of the semester, the instructor will send out two special email messages. One is to confirm the students' email addresses, the other one is about Webwork. If a student does not receive those messages by the time of the second class, he/she must contact the instructor immediately.