

**MATHEMATICS 2450.H01**  
**CALCULUS III with Applications**  
**Fall 2015**

**Professor:** Dr. Linda Allen; Office: Math 117 I

**Office Hours:** Tuesday: 11 a.m.–noon, 2–3 p.m., Thursday: 11 a.m.–noon, 3–4 p.m. or by appointment.

**Class Meeting Time and Room:** Tuesday and Thursday: 12:30–1:50 p.m, Math 108.  
Thursday: 2:00–2:50 pm, Math 10.

**Course Website:** [www.math.ttu.edu/~linallen/Hon2450Fall2015.html](http://www.math.ttu.edu/~linallen/Hon2450Fall2015.html)

**Textbook:** *CALCULUS*, K. Smith, M. Strauss, and M. Toda – Calculus, 6th National Edition, Kendall Hunt.

**Prerequisites:** Grade of C or better in Math 1352 or Math 1452 or departmental permission.

**Material Covered:**

Chapter 9–Vectors in the Plane and in Space, 9.1–9.4 (Review) and 9.5–9.7

Chapter 10–Vector-Valued Functions, 10.1–10.2, 10.4

Chapter 11–Partial Differentiation, 11.1–11.8

Chapter 12–Multiple Integration, 12.1–12.5, 12.7–12.8

Chapter 13–Vector Analysis, 13.1–13.7

**Student Learning Outcomes:** Math 2450 meets the TTU general education student learning outcomes for mathematics. Students will (1) apply arithmetic, algebraic, geometric, statistical and logical reasoning to solve problems, (2) represent and evaluate basic mathematical and/or logical information numerically, graphically, and symbolically, and (3) interpret mathematical and/or logical models such as formulas, graphs, tables and schematics, and draw inference from them.

**Course Specific Learning Outcomes:** The purpose of this course is to build a bridge from elementary calculus to higher mathematical analysis, and to provide a firm grounding in the fundamentals of multivariable differential calculus. Students will develop skills in differentiation and integration needed to solve problems in three-dimensional space. The student will master the concepts of (1) tangent and normal vectors, and their geometric and physical interpretations, (2) partial derivatives, tangent planes, directional derivatives, and gradients, and how to compute them, (3) three-dimensional integration, and how to compute such integrals, (4) vector fields, divergence, and curl, and their applications to the sciences.

**Learning Assessment:** Continuous assessment of the progress of the course occurs through ongoing communication between the instructor and the students. Students are encouraged to ask questions during class and to seek the instructor's help out of class when needed. Formal assessment occurs through exams, quizzes, webwork, homework, projects, and attendance. (See descriptions below.)

**Exams:** There will be two exams plus a Comprehensive Final Exam. Calculators are not allowed on any of the exams. There will be no make-up of exams except for documented sickness or participation in a university-sponsored event.

**Webwork and Homework:** Weekly homework or webwork will be assigned and graded. Homework will include conceptual, computational, and computer-assisted problems. One homework/webwork grade will be dropped. No late homework or webwork will be accepted.

**Quizzes:** Approximately 4 or 5 quizzes will be given. No make-up of quizzes will be given.

**Projects:** Two projects that generalize and extend concepts learned in class will be assigned and graded. These projects will involve computer-assisted computations and applications.

**Attendance:** Class attendance is important. The lectures explain and complement the material in the text. A thorough understanding of the material is significantly improved by diligent class attendance. If you need to leave a class early, please inform your instructor before the class starts.

**Course Grade:** The course grade will be based on: (1) Two exams (40%); (2) Comprehensive Final Exam (20%); (3) Webwork and Homework (20%); (4) Projects (10%); (5) Quizzes (10%); (6) attendance (borderline cases).

<b>Exam</b>	<b>Date</b>
Exam 1	Thursday, October 1
Exam 2	Thursday, November 12
Comprehensive Final Exam	Friday, December 4 (10:30 a.m.–1:00 p.m.)

## Important Dates and Facts:

1. Monday, September 7: Labor Day Holiday.
2. Wednesday, September 9: Last day for student-initiated drop without penalty.
3. Monday, October 26: Last day for student-initiated drop with penalty.
4. November 25–29: Thanksgiving Holiday.
5. Wednesday, December 2: Last day of classes.
6. **Civility in the Classroom:** Texas Tech University endeavors to foster a classroom climate of mutual respect among students and between students and teacher. Mutual respect means that we should be tolerant of different ideas and varying opinions about topics of discussion in class, that we address each other respectfully and without interrupting while others are speaking, and that we do not engage in disruptive behavior in class. Signs of disrespect include, but are not restricted to: ringing cell phones (students must turn them off or leave them home), reading a newspaper or other material that is not part of a class assignment while in class, talking with classmates during class, eating and drinking in class, and similar disruptive behaviors. Students who engage in disruptive behavior will be warned. Repeated disruptive behavior may result in the student being asked to leave the classroom.
7. **Academic Honesty:** The TTU Code of Student Conduct, which you should have received when you enrolled in the university, contains a lengthy list of prohibited behaviors, among which is Academic Dishonesty. Please note that cheating and plagiarism (a form of cheating) are included among the actions that are subject to disciplinary action. *Plagiarism:* The appropriation or imitation of the language, ideas, and thoughts of another author, and representation of them as ones original work. The Random House College Dictionary, revised edition. New York: Random House, 1975, p. 1014. 1. The use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement; 2. the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Student Affairs Handbook, Texas Tech University, Lubbock, Texas, 1998-99, p. 22. Plagiarism and cheating are not tolerated and will result in a grade of 0 on exams or on work that contains plagiarized material. In addition, a grade of F may be awarded for the course. Any cases of plagiarism or cheating will be reported to the Honors College and the responsible academic dean (i.e., Arts & Sciences, Business Administration, Engineering, etc.) for such disciplinary action as they see fit to administer.
8. **Accommodation of Students with Disabilities:** Any student who, because of a disability, may require special arrangements in order to meet the 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 instructors office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.
9. **Student Absence for Observation of Religious Holy Days:** A student who is absent from classes for the observation 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 if, not later than the fifteenth day after the first day of the semester, the student had notified the instructor of each scheduled class that the student would be absent for a religious holy day.