Mathematics 2450 sec. Distance 01, Calculus III with Applications, Spring 2018
COURSE SYLLABUS

Website: http://www.math.ttu.edu/~eaulisa/Math2450Sprin18D01.html

Instructor: Eugenio Aulisa, Professor
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Office hours: daily throughout email exchange,
         face-to-face meetings have to be scheduled in advance
         and are reserved to discussions that go beyond class material.

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

About the course. 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.

Mission Statement. This course covers Calculus of several variables. The concepts are extensions of the concepts from Calculus I. It is necessary to remind the students of those basic concepts, as the course progresses. Multivariable Calculus is an important tool in Science and Engineering. The instructor should emphasize the importance of all relevant concepts, including: curves and surfaces in Euclidean 3-space, length and curvature, area and volume; surfaces, partial derivatives, total differential, tangent planes to surfaces; gradient; vector-valued functions; path integral; Stokes' theorem, which should be stated, with an emphasis on its important particular cases, Green's Theorem and Divergence Theorem - followed by a few basic examples.

Student Learning Outcomes. Math 2450 satisfies the university core curriculum requirement in Mathematics: "Students graduating from Texas Tech University should be able to demonstrate the ability to apply quantitative and logical skills to solve problems." It meets the TTU general education student learning outcomes for mathematics that 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 mathematical and/or logical models such as formulas, graphs, tables and schematics, and draw inference from them.
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 how to calculate them.

Class Policies: this is a distance class, all the students enrolled in this class should be highly responsible in managing their schedule. This course moves very fast. If you fall behind, even by one section, you may not be able to catch up, since each section generally depends very heavily on the ones before.
A student enrolled in this class has to be capable to read and understand the textbook. If in the past you struggled in self-lecturing mathematics, then this is not the class for you and it is highly recommended you switch to a face-to-face class. The instructor expects for the student to read each section of the textbook, watch the videos and read the class-notes before attempting to solve the homework problems. **When asking for help you need to show all your work, by typing it on the email (better) or by attaching a weblink to a scanned copy of your work. When asking for help for a WebWork problem it is recommended you use the button email to the instructor at the bottom of the screen, otherwise you may not get any answer.**

Assessment of the Learning Outcomes:

Examinations:			
Exam #1: Fri, Feb 16, 7:00pm-9:00pm,	Online	worth 15% of the final grade
Exam #2: Fri, Mar 23, 7:00pm-9:00pm,	Online	worth 15% of the final grade
Exam #3: Fri, Apr 20, 7:00pm-9:00pm	Online	worth 15% of the final grade
Final Exam: Tue, May 15, 10:30pm-1:00pm	On Campus	worth 30% of the final grade

Homework will be given on the WebWork system at http://webwork.math.ttu.edu/webwork2/spr18eaulisam2450sD01sH01. Students will be informed via email (on the @ttu.edu address) about the HW, which should be completed before the given deadline (generally not more than 10 days). Many of the HW problems will be discussed in class at a later time. **Homework is worth 25% of the final grade**. However in order to pass the class your overall grade in the HW at the end of the semester

should be at least 50%. This may appear radical, but besides the exams, the HW system is a major tool the instructor has to asses your class performances. The instructor will check regularly your HW score and let you know if you are not on track.

Grading Policy: a perfect score in all tests and homeworks results in an overall grade of 105%. If your overall score is less than 60% you will receive an F grade, in between 60-69% you will receive a D grade, in between 70-79% you will receive a C, in between 80-89% you will receive a B, in between 90-99% you will receive an A, with 100% or more you will receive A+.

Exam Policies: Students are expected to take the midterm exams and the final exam as scheduled. There are no make ups for the examinations, except for reasons of illness, stated in writing by a medical doctor, observance of a religious holiday or university justified field trips. Usually, no other reasons are accepted (events, plane tickets, weddings, ...).

Students can take the **Final Exam** at Texas Tech University in the Mathematics and Statistics department. If students have a conflict in schedule or are far away from Lubbock, they need to provide necessary documentation, and arrange a different place and/or time for examination. In that cased, depending on their geographic location, each student should make arrangements with a certified testing service. In case no agreeable solution can be found, the Texas Tech University Testing Services in Lubbock will be designated to administer the examination. Testing centers (including the TTU Testing Center) charge a fee to administer the exam.

A proctor form can be downloaded at: http://www.math.ttu.edu/~eaulisa/Math2450D01_files/proctor_form_fillable_ea.pdf

Additional information. Use of **calculators and formula sheets is not permitted during the Final Exam**. Electronic devices which can store formulas, including cell phones and smartwatches should be turned off and stored during the exams.

ADA accommodations (TTU Operating Policy 34.22). 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 instructor's 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, please contact Student Disability Services in West Hall or call 806-742-2405. https://www.depts.ttu.edu/opmanual/OP34.22.pdf.

Absence for observance of a religious holy day (TTU Operating Policy 34.19). "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. 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. A student who is excused may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily. https://www.depts.ttu.edu/opmanual/OP34.19.pdf.

Academic Integrity (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. http://www.depts.ttu.edu/opmanual/OP34.12.pdf.

Please note the following important dates: **February 2**, last day for student-initiated drop without a penalty, (drop does not count against drop limit). **March 28**, last day for student-initiated drop with a penalty (counts against drop limit). After the deadline, the student must complete the course for a grade. The 2017-2018 official calendar can be found at: https://www.depts.ttu.edu/officialpublications/calendar/17-18_cal_detailed.php.

Course Outline

Chapter 9 (review 9.1-4, cover 9.5-9.7)	Vectors in Plane and in Space	6 hours
Chapter 10 (10.3, 10.5 are optional)	Vector-Valued Functions	5 hours
Chapter 11	Partial Differentiation	11 hours
Chapter 12 (12.6 is optional)	Multiple Integration	12 hours
Chapter 13	Vector Analysis	11 hours

Math Tutoring & Study Center, MATH 106, Monday-Friday: 10am-5pm