Spring 2018

MATH 2450 – 012 and 023: Calculus III

Location: Section 012 – M,W,F 10 – 10:50 Media and Comm. (MC) 053, M 11 – 11:50 MC 266
Section 023 – T 11 – 12:20, Th 10 – 12:20 Math 17

Professor: Dr. Aminur (Amin) Rahman; Office: Math 117E; Email: amin.rahman@ttu.edu

Office hours: TBD

Course website: http://myweb.ttu.edu/aminrahm
Prerequisites: Math 1452
Textbook: Calculus 7th Ed. by K. Smith, M. Strauss, and M. Toda

Tentative Schedule:

	Topics
Week 1 (8/26 – 8/30)	9.1 – 9.4 (Review), 9.5
Week 2 (9/3 – 9/6)	9.5 – 9.7
Week 3 (9/9 – 9/13)	9.7, 10.1, 10.2, 10.4
Week 4 (9/16 – 9/20)	10.4, 11.1
Week 5 (9/23 – 9/27)	Exam I, Go over Exam I, 11.1 – 11.3
Section 12: 9/25 (Wednesday)	Exam I (9.1 – 10.4): 10:00 – 10:50 Room MC53
Section 23: 9/24 (Tuesday)	Exam I (9.1 – 10.4): 11:00 – 11:50 Room Math17
Week 6 (9/30 – 10/4)	11.3 – 11.5
Week 7 (10/7 – 10/11)	11.5 – 11.7
Week 8 (10/14 – 10/18)	11.7-11.8, 12.1 – 12.3
Week 9 (10/21 – 10/25)	Exam II, Go over Exam II, 12.4 – 12.5, 12.7
Section 12: 10/23 (Wednesday)	Exam II (11.1 – 11.8): 10:00 – 10:50 Room MC53
Section 23: 10/22 (Tuesday)	Exam II (11.1 – 11.8): 11:00 – 11:50 Room Math17
Week 10 (10/28 – 11/1)	12.7 – 12.8, 13.1
Week 11 (11/4 – 11/8)	13.1 – 13.3
Week 12 (11/11 – 11/15)	Exam III, Go over Exam III, 13.4
Section 12: 11/13 (Wednesday)	Exam III (12.1 – 12.8): 10:00 – 10:50 Room MC53
Section 23: 11/12 (Tuesday)	Exam III (12.1 – 12.8): 11:00 – 11:50 Room Math17
Week 13 (11/18 – 11/22)	13.3 – 13.5
Week 14 (11/25 – 11/26)	13.6
Week 15 (12/2 – 12/4)	13.7, Final Exam Review
12/10 (Monday) 10:30 – 1:00	Final Exam

Course Grade: HW (20%), Exam I (15%), Exam II (20%), Exam III (20%), Final Exam (30%)
Grading Scheme: A: 88 – 100, B: 76 – 87, C: 63 – 75, D: 55 – 62, F: 0 – 54

Homeworks: Assigned on WebWork.
Link for Section 12: https://webwork.math.ttu.edu/webwork2/f19aminrahmm2450s012
Link for Section 23: https://webwork.math.ttu.edu/webwork2/f19aminrahmm2450s023

Course Description: 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.

Attendance Policy: Students with less/equal to 2 unexcused absences for the entire semester will receive a bonus of 5% on the final grade. TTU considers attendance mandatory, and you may have no more than four unexcused absences during the semester, which I will enforce if your average falls below a C. 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. I expect that students will read each section of the textbook in advance of the lecture. If you miss a class, it is your responsibility to find out what you missed (announcements, assignments, notes,...).

Expected 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; 3-dimensional integration, and how to compute such integrals; vector fields, divergence, and curl, and how to calculate them.

Methods of Assessment of Learning Outcomes: 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 outside of class when needed. Formal assessment occurs through exams, homework assignments, and attendance. See descriptions below.

Other important information

Calculator Policy: No calculators allowed on Exams; permitted on homeworks.
Exams: In certain special circumstances a makeup exam may be given after the student follows all university protocol.

Important dates and university policies

1. September 2: Labor Day, no class.
2. September 11: Last day for student initiated drop without academic penalty
3. November 26: Last day for student initiated drop with academic penalty
4. November 27 – December 1: Thanksgiving, no class.
5. December 4: Last day of class.
6. **Civility in the classroom:** Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom. The classroom is a setting in which an exchange of ideas and creative thinking are encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or behavior are subject to appropriate sanctions according to university policy.
7. **Academic integrity:** 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.
8. **Observance of religious holy day:** "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.
9. **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, please contact Student Disability Services in West Hall or call 806-742-2405.