MATH 2326-002(22023) **Calculus III** **Spring 2019**

Instructor: Yue(David) Liu

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Office: PKH 433

Office hours: MWF: 4:20pm - 5:20pm, or by appointment

Class time: MW 5:30 pm - 6:50 pm in PKH 319

Prerequisite: C or better in MATH 2425 or HONR-SC 2425

Textbook and Materials: This course is part of the UTA Mathematics Department Affordability Campaign, making state-of-the-art online mathematics resources available to our students at the lowest possible price when compared to purchasing elsewhere. To receive the discounted price, purchase course materials through the UTA Bookstore. Search by course or use this site: http://bit.ly/2tQ090S

1. E-text and Direct Access (Required): Your course materials include the e-version of the course text as well as MyLab course access which is designed to enrich student success by providing instant feedback on your assignments plus on-demand access to personalized study plans, a multimedia library, practice tests, and more. The e-texts may be downloaded on multiple devices with long-term access for each student. Every student has trial access to MyLab course materials as soon as the course is available in Blackboard, so you can start working on your course even before you purchase the course materials! That said, students will need a verified purchase within the first two weeks of classes, otherwise, the access to your digital materials will freeze and your account will stay deactivated until the purchase is confirmed. During the purchasing process, please ensure you enter your name as shown on your UTA records along with your MAVS email address for proper processing.

2. Loose-leaf Textbook (Optional): You may choose to enhance your digital purchase and select a loose-leaf textbook for only $25 from the bookstore. Full details are available in Blackboard. *Calculus - Early Transcendentals,* 3rd Ed., Briggs, Cochran, Gillett & Schulz, Pearson Ed. Inc., 2019. ISBN: 9780134770512

Course Objectives: This course is designed for students to learn basic methods and applications of multivariable calculus.

Course Description: We will cover approximately five chapters 13-17. Topics include vectors, calculus of vector-valued functions, partial differentiation, directional derivatives and the gradient, Lagrange multipliers, multiple integration with applications, line integrals, Green's Theorem, surface integrals, Stokes' Theorem, and divergence theorem.

Grading Scale: 90 - 100 A; 80 - 89 B; 70 - 79 C; 60 - 69 D; 0 - 59 F

Homework: Homework will be assigned in MyLabsPlus/Pearson system (www.uta.mylabsplus.com).

Tests: There will be two tests during the semester, on February 13 (Wednesday) and April 3 (Wednesday). They will be held in the same classroom PKH 319. Each exam will count 30% toward your course grade.

The Final Exam: There will be a departmental final exam given on May 4 (Saturday), from 3:30pm to 6:00pm. It will be a comprehensive exam and will count 40% toward your course grade.

Calculator Policy: On the tests and final exam you will be allowed to use only the TI-30XA and TI-30XIIS calculators.

Makeup Policy: There will be no make-up exams offered.

Drop Policy: The last day this semester to drop a course is Friday,March 29 prior to 4 pm. Any student who drops the course on or before will receive a 'W'. Students must contact an advisor in their major in order to drop a course. Students will not automatically dropped for non-attendance.

Attendance: Students are expected to attend each lecture, arrive in class on time, and stay the entire class period. Mobile phones and other electronic devices must be turned off. If you must miss a class, it is your responsibility to find out all information from the class you missed, including material covered and any other announcements made.

Electronic Communication: E-mail is a prime means for communication. Therefore, the University has the right to send communications to students via e-mail and the right to expect that those communications will be received and read in a timely fashion. The Office of Information Technology (OIT) will assign all students an official University e-mail address. It is to this official address that the University will send e-mail communications. Students are expected to check their official e-mail account on a frequent and consistent basis to stay current with University communications. The University recommends checking e-mail daily in recognition that certain communications may be time-critical.

Help in the Course: The Math Clinic (PKH 325) is available to you seven days a week (hours posted at the door) at no additional cost. Go to the Math Clinic website http://www.uta.edu/math/clinic/ for more information. The SOAR program (Hammond Hall 132) provides tutors on a cost-share basis. The Science Education and Career Center (Life Sciences 106) has tapes and other material pertinent to the course. The Math Department maintains a list of people, primarily graduate students, who are available for hire.

Accommodations and Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide reasonable accommodations to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be

found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.
I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents Rule 50101, 2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the students suspension or expulsion from the University.

Student Disruption: The University reserves the right to impose disciplinary action for an infraction of University policies. For example, engagement in conduct, alone or with others, intended to obstruct, disrupt, or interfere with, or which in fact obstructs, disrupts, or interferes with, any function or activity sponsored, authorized by or participated in by the University.

Drop for Non-Payment of Tuition: If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's office.

Student Feedback survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each students feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should move toward the nearest exits, which are located at the front of the room along the north and south walls. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911. We

further recommend that you enter the UTA Police Department's emergency phone number into your own mobile phone. For non-emergencies, contact the UTA PD at 817-272-3381.

Title IX: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.

Disclaimer: Changes to this document or the tentative schedule may be made at the discretion of the instructor.

Assignment Sheet: Spring 2019

13.1 Vectors in the Plane – 17,19,21(a.d.g),22(a.d.g),25,31,35,37,39,43,45,47,55(a),57
13.2 Vectors in Three Dimensions – 9,11,13(b.c),15,19,21,23,25,27,29,33,34,39,47
13.3 Dot Products – 11,13,15,17,23,25,27,29,31,39,40
13.4 Cross Products – 7,9,11,13,17,19,21,25,29,35,39,41
13.5 Lines and Planes in Space – 9,11,15,17,19,21,27,31,41,43,45
14.1 Vector-Valued Functions – 9,13,17,19,21,22,27,31,33,39,44,47,51,53,56,59,61,63
14.3 Motion in Space – 7,11,17,28,29,31,36,45
14.4 Length of Curves – 9,11,19,25,31,37
14.5 Curvature and Normal Vectors – 11,15,29,31,43,45
15.1 Graphs and Level Curves – 11,13,15,17,21,24,25,31,33,38
15.2 Limits and Continuity – 13,15,19,23,27,29,31,37,39,45,47,51,53
15.3 Partial Derivatives – 9,11,16,17,19,21,29,37,41,43,45,49,57
15.4 The Chain Rule – 7,9,15,17,19,23,25,31,33,34
15.5 Directional Derivatives and the Gradient – 7,11,13,14,17,25,29,31,57
15.6 Tangent Planes and Linear Approximation – 9,11,17,19,25,29,31,33,37
15.7 Maximum/Minimum Problems – 11,13,23,25,29,33,35,37,43,45
15.8 Lagrange Multipliers – 7,9,17,19,25,26
16.1 Double Integrals over Rectangular Regions – 7,9,10,13,14,17,19,21,26,27,32,33
16.2 Double Integrals over General Regions – 7,13,15,17,21,25,27,31,35,38,39,41,46,47,56,57,63,64,74
16.3 Double Integrals in Polar Coordinates – 7,9,13,19,21,23,24,26
16.4 Triple Integrals – 9,13,15,19,25,33,37
16.5 Triple Integrals in Cylindrical and Spherical Coordinates – 11,13,15,17,21,23,30,33,35,37,39,46,49
16.6 Integrals for Mass Calculations – 7,9,13,15,17,19,21,27,33
16.7 Change of Variables in Multiple Integrals – 5,7,13,15,19,21,27,31,35
17.1 Vector Fields – 7,9,16,17,18,19,29,31,33
17.2 Line Integrals –11,13,15,25,27,31,33,35,39,41,47,49
17.3 Conservative Vector Fields – 11,12,13,15,17,19,27,29,33,36
17.4 Green's Theorem – 11,13,19,21,23,25,29,31,33
17.5 Divergence and Curl – 9,12,13,17,21,23,27,29
17.6 Surface Integrals – 11,13,15,17,19,21,23,29,31,35,43,45
17.7 Stokes' Theorem – 5,7,11,12,17,18
17.8 Divergence Theorem – 9,11,13,14,17,21