

MATHEMATICS 2425, CALCULUS II

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Phones:	817-272-0852 (Mr. LaValley's office) 817-272-3261 (Mathematics Department)	Office Hours:	Mr. LaValley: Tuesdays 8:45-9:45; Wednesdays 3-4 or by appt.

Class Meetings:	<i>Lecture</i> (2425-300): Tuesdays & Thursdays 11:00-12:20 in PKH 110 <i>Labs:</i> (2425-301) Tuesdays and Thursdays 10:00-10:50 AM in PKH 305 (2425-302) Tuesdays and Thursdays 1:00-1:50 PM in PKH 305
Textbook:	<i>CALCULUS, EARLY TRANSCENDENTALS, CUSTOM EDITION FOR UT-ARLINGTON, BY SOO T. TAN</i> Register** for WebAssign at: http://webassign.net/ NOTE that the Class Key depends upon the lab section for which you are registered: Class Key for 2425-301: uta 5592 9113 Class Key for 2425-302: uta 7023 1109 ** If you purchased your book new, you receive an access code for WebAssign. Otherwise, you will need to purchase this. There is a 14-day trial period before action is needed regarding purchasing access.
Course Prerequisite:	A grade of C or above in Math 1426 (Calculus I) or HONR-SC 1426
Description of Course Content:	This course includes the study of applications and techniques of integration, parametric equations, polar coordinates, sequences, series vectors, dot product, cross product, planes and quadric surfaces.
Class Format:	The instructor and the GTA will incorporate cooperative learning activities in lecture and lab sections as well as other active learning strategies during the semester. <i>You are expected to participate fully in these activities.</i> You will need to have 8-10 hours available weekly to study outside of class in order to succeed in this course.
Electronic Communication	UT Arlington has adopted MavMail as <u>its official means to communicate with students</u> about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. <u>All students are assigned a MavMail account and are responsible for checking the inbox regularly.</u> There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php .

UT-Arlington Department of Mathematics Learning Outcomes for M2425	Upon completion on Math 2425, the student should be able to <ol style="list-style-type: none"> 1. compute the area between two curves, in both rectangular and polar coordinates; compute volumes and surface areas of solids of revolution, in both rectangular and polar coordinates; compute arc length of both polar and rectangular curves; 2. compute the value of integrals by the methods of integration by parts, trigonometric substitutions and partial fractions; 3. compute the value of improper integrals; 4. compute limits of sequences and series; 5. determine the radius of convergence of power series; differentiate and integrate power series; 6. represent a known function as a Taylor series; approximate a known function with a Taylor polynomial and determine the error involved; 7. compute the standard representation of a vector in 3-space, compute the dot product and cross product of vectors; 8. write equations of lines, planes, and quadric surfaces in 3-space; 9. justify and explain their steps in problem solving. In particular, students should be able to construct correct and detailed mathematical arguments to justify their claimed solutions to problems.
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Details About the Course

Grades:

Midterm Exam 1	Friday, September 19, 2014, 6:00-8:00 PM	20%
Midterm Exam 2	Friday, October 24, 2014, 6:00-8:00 PM	25%
Lab grade	Weekly quizzes	5%
	Homework	5%
	Lab worksheets	10%
Final examination	Saturday, December 6, 2014, 12:30-3:00 PM Comprehensive coverage	35%

Grades will be assigned according to the following scheme (approximately):	90–100	A
	80– 89	B
	70– 79	C
	60– 69	D
	59 or below	F

Midterms and Finals:

These exams are departmental. This means that all sections of Math 2425 take the same midterm and final exams and that the grades on these exams have the same weight in each of the sections of calculus, regardless of instructor. All of these exams are comprehensive. The format of each exam will be a mix of multiple-choice problems and free-response problems.

The final exam has a grade weight of 35%; however, **any student who scores below 50 on the final exam cannot receive a grade higher than a D in the course.**

You can access some previous midterms and some finals online. Go to:

https://mavspace.uta.edu/xythoswfs/webview/xy-698342_1

Solutions to the multiple choice questions are available at

https://mavspace.uta.edu/xythoswfs/webui/xy-1084452_1-t_BulwoeEK

Calculators: The only calculators allowed for the midterms and final are TI-30XA and TI-30XIIS.

Make-up Policy: If you have a conflict with either midterm or final, you must contact your instructor no later than Census Date (September 8), by using a form provided to you at your request by your instructor & submitting it together with necessary documentation as indicated on the form. If a conflict arises after September 8, contact your instructor immediately. Delays in submitting a make-up request may mean that your request cannot be approved by the course coordinator.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, **students must see their academic advisor to drop a class or withdraw.** Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>). Any student who drops this course on or before Wednesday, October 29 at 5 PM will receive a W. **Note that drop requests must be submitted to an advisor by 4 PM on October 29th.**

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.

Cell Phone, Laptops, Beeper, & Chiming Watch Etiquette:

- Cellular phones should be either switched off or set to "silent" mode during all classes. Cellular-phone use will not be permitted in class. If you must take an important call, please leave the classroom.
- Cellular phones are prohibited during exams.
- Beepers should be either switched off or set to "silent" mode during all classes and during tests.
- You should assure that watches with alarms and chirps will not sound during class.
- Since lecture and lab focus on interpersonal communication, students must request permission to use a laptop during class or lab time.

Online Homework: Suggested homework will be assigned each day. A student must have access to WebAssign for this course *since* part of your grade will be based on the completion of homework assignments online. The problems will be similar to *textbook problems from the departmental assignment sheet*. *Whereas* your homework grade is based *solely* on the online homework, you are *also* responsible for *other text problems assigned*.

Weekly Quizzes: You will be given in-class (during lab meetings) and online (via WebAssign) quizzes which assume you having completed and mastered the suggested homework. They will consist of 1-3 problems similar to those on the assignment sheet. You are allowed to use your own original handwritten notes (no copies or printouts from the internet) on the in-class quizzes. Your 10 best quiz grades will be used to calculate your quiz average. Although attendance is required, if you miss a class please see Dr. Epperson's website <http://www.uta.edu/faculty/epperson/courses.html> for assignments.

Attendance:

At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I will take attendance. Attendance for this course and its associated labs is required. Excellent attendance records as well as positive group evaluations will help your grade in that borderline course-grade decisions will be influenced by these records. Arrive on time to class (quizzes take place during the first 10 minutes of class and lab homework is due at the beginning of class).

Lab Attendance and Worksheets: Each Thursday, lab sections will complete a problem solving worksheet. The problems on the worksheets are intended to be more in-depth than problems on the assignment sheet and are meant to be completed in groups. Therefore, you will turn in lab worksheets in groups of 3-4 (no more, no less).

If at any time you have questions, please do not hesitate to ask.

The lab assignments will be due at the end of lab that day. I will average the top 10 lab grades. Again, you must be present for the entire lab session in order to turn in the lab assignment with your group. Because the labs are due at the end of the hour, the previous week you will receive a *Pre-Lab assignment*, which will constitute 20% of your lab grade for that day. These must be completed before you arrive for the associated lab as they will help you complete the lab in a timely manner. The “Pre-Lab” assignment aims to allow you to identify important questions and seek answers to them prior to encountering the associated lab.

Lab Information:

Again, *attendance is required*. If you are absent from lab on a problem solving activity day, you will not be part of a lab group for that week and you will be required to submit the missed lab work individually with a 20% reduction of your grade for the missed lab.

In the lab, you will:

- ☐ have the opportunity to ask for guidance on homework questions;
- ☐ take weekly quizzes (except for weeks in which a midterm is scheduled) based upon mastery of the suggested homework assignments; and
- ☐ participate in problem-solving activities from Lab Worksheets (on Thursdays) and submit group or individual solutions to selected problem-solving activities from the Lab Worksheets—this is 50% of your lab grade (10% of your total course grade).

Instructions for solutions submitted:

- ☐ Work should be done in pencil and erasures should be clean and complete.
- ☐ Problems should be written in order and include the page number and the problem number, i.e. p26 # 5, if appropriate.
- ☐ Write on one side of the paper only.
- ☐ If you tear the page from a spiral notebook, trim the curly edges.
- ☐ Papers must be stapled together (upper left hand corner) and folded in half lengthwise.
- ☐ On the outside write your name, date and assigned problems.

If these guidelines are not followed, your paper will not be graded and you will receive 0 points on that work.

Help Outside of Class Time: My office hours are given above. These are times when I will be available in my office to discuss the material/homework/tests. No appointment is necessary for those times. If, however, those times are inconvenient for you, then make an appointment with me for another time (e.g., e-mail me stating the times you prefer). Please use the subject heading “**Math 2425 Student Question**” when sending Dr. Epperson e-mail and identify yourself (full name) in the communication.

My web page will list the homework as the term progresses as well as other miscellaneous information pertinent to this course. My web-page address is above.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

The Math Department operates the **Math Clinic**, a tutoring service staffed by upper level undergraduate students. The Math Clinic is on the 3rd floor of Pickard Hall; the phone number is 817-272-5674; and the hours of operation for fall and spring are Monday – Thursday 8am to 9pm; Friday 8am to 1pm; Saturday 1pm to 6pm; Sunday 1pm to 9pm

Go to the Math Clinic webpage <http://www.uta.edu/math/clinic/> to get more information or to access assignment sheets for the courses for which tutoring is offered.

If at any time you have questions, please do not hesitate to ask.

Previous midterm exams and some previous final exams are available to students in the **Science Education and Career Center (SECC)**, 106 Life Science Building. The fall and spring hours of operation are

Monday-Thursday	8am - 8pm
Friday	8am - 5pm
Saturday	12pm - 5pm
Sunday	Closed

You need a Mav ID Card to check out these exams. A copy machine is available for you to make copies. There are also video tapes of lectures on calculus topics that can be viewed in the SECC. For more information, go to <https://www.uta.edu/cos/SECC/login.php>.

The Math Department maintains a list of people who have expressed an interest in tutoring. These persons are not necessarily recommended by the Math Department and they set their own fees. You may obtain a copy of the tutor list in the Math Office, 478 PKH.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. 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.

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.**

If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law “Title IX” such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

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 student’s 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.

Important Dates:

September 1	Labor Day
September 8	Census Date, Deadline for makeup requests for <u>all</u> exams
Friday, September 19	Midterm 1, 6 – 8 pm
Friday, October 24	Midterm 2, 6 - 8 pm
Wednesday, October 29	Last day to drop a class
November 27-28	Thanksgiving Holidays
Wednesday, December 3	Last day of classes
Saturday, December 6	Final Exam, 12:30 - 3 pm

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 student’s 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>.

Tentative Course Schedule/Assignment Sheet¹

Date	Section/Problems Assigned ²
Aug 21:	6.1: Integration by Parts 1, 6, 10, 12, 17, 18, 20, 22, 30, 37, 42, 58, 67
Aug 26:	6.2: Trigonometric Integrals 2, 4, 7, 13, 15, 16, 18, 23, 27, 32, 37, 40, 46, 48, 49
Aug 28:	6.3: Trigonometric Substitutions 4, 6, 8, 10, 11, 13, 15, 16, 20, 22, 24, 26, 30, 31, 35, 47

¹ “As the instructor of this course, I reserve the right to adjust this schedule as needed in any way that serves the educational needs of the students enrolled in this course.” –Dr. James A. M. Epperson-

² Your homework will be online in WebAssign. The online homework corresponds to the listed homework problems from the textbook.

Sep 2:	6.4: Partial Fractions 3, 6, 11, 14, 16, 22, 24, 26, 32, 34, 37, 42, 44, 45
Sep 4:	6.6: Improper Integrals 7, 12, 14, 16, 20, 21, 23, 24, 27, 28, 29, 30, 33, 35, 38, 45, 46, 48
Sep 9:	8.1: Sequences 1, 4, 6, 8, 11, 14, 15, 16, 20, 21, 23, 25, 28, 30, 34, 35, 37, 38, 49, 54, 55, 58, 68
Sep 11:	8.2: Series 2, 3, 6, 8, 10, 14, 20, 22, 32, 33, 38, 39, 42, 43, 46, 47, 48, 51, 63
Sep 16:	Concepts and Review
Sep 18:	Review
Sep 19:	Midterm 1 6-8 pm (Covers Sect. 6.1, 6.2, 6.3, 6.4, 6.6, 8.1 tentatively)
Sep 23:	8.3: The Integral Test 2, 4, 6, 7, 8, 10, 12, 16, 18, 19, 20, 24, 25, 26, 27, 33
Sep 25:	8.4: Comparison Tests 1, 3, 4, 6, 7, 9, 10, 11, 12, 18, 20, 23, 24, 26, 28, 31, 33, 34, 35, 37
Sep 30:	8.5: Alternating Series 2, 3, 6, 8, 9, 10, 13, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 27, 29, 32, 34
Oct 2:	8.6: Absolute Convergence; the Ratio and Root Tests 4, 6, 9, 11, 12, 13, 15, 19, 20, 21, 24, 25, 28, 29, 32, 34, 35
Oct 7:	8.7: Power Series 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 17, 18, 22, 23, 24, 25, 29
Oct 9:	8.8: Taylor and Maclaurin Series 1, 5, 9, 12, 13, 17, 18, 21, 25, 26, 27, 28, 33, 37, 39, 50, 60, 61, 63, 66
Oct 14:	8.9: Approximation by Taylor Polynomials 4, 6, 7, 9, 11, 13, 17, 20, 21, 25, 27, 33, 34, 35, 36
Oct 16:	5.2: Volume, Disk Method 2, 4, 6, 10, 11, 17, 19, 20, 23, 25, 27, 32, 50, 53, 57, 59, 60
Oct 21:	Concepts and Review
Oct 23:	Review
Oct 24:	Midterm 2 6-8 pm (Covers Sect. 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, plus above sections)
Oct 28:	5.3: Volume, Shell Method 3, 5, 6, 9, 10, 14, 20, 26, 30, 35, 44 From previous sections: 6.1.52, 6.1.55, 6.2.55, 6.2.56, 6.2.60, 6.2.61, 6.3.37, 6.4.66, 6.6.53, 6.6.54
Oct 30:	5.4: Arc Length and Surface Area 2, 4, 7, 8, 12, 14, 16, 17, 20, 22, 23, 24, 29, 37, 39, 40, 42, 51, 57 From previous sections: 6.3.39, 6.6.58 9.1: Conic Sections (high school material that you should review on your own before we cover Section 9.2)
Nov 4:	9.2: Plane Curves and Parametric Equations 2, 3, 7, 9, 11, 20, 23, 31, 32, 51 9.3: Arc Length and Surface Area with Parametric Curves 2, 4, 8, 12, 16, 19, 21, 31, 33, 34, 38, 40, 53, 56, 59, 62
Nov 6:	9.4: Polar Coordinates 2, 6, 10, 13, 20, 23, 27, 32, 38, 47, 51, 54, 55, 58, 63, 68, 70, 71, 74
Nov 11:	9.5: Areas and Lengths in Polar Coordinates 5, 10, 12, 22, 23, 26, 27, 33, 36, 42, 43, 46, 49, 50, 56, 57, 61
Nov 13:	10.1: Vectors in the Plane 3, 8, 12, 14, 18, 22, 24, 28, 30, 42, 46, 56, 62, 64 10.2: Coordinates and Vectors in 3-Space 8, 16, 21, 24, 26, 30, 34, 36, 39, 42, 56, 57, 60, 65, 70, 74, 78
Nov 18:	10.3: The Dot Product 1, 4, 8, 15, 20, 22, 26, 30, 31, 34, 40, 42, 47, 48
Nov 20:	10.4: The Cross Product 1, 6, 10, 12, 14, 18, 20, 22, 24, 28, 30, 34, 39
Nov 25:	10.5: Lines and Planes in Space 4, 8, 11, 12, 13, 14, 16, 18, 19, 24, 30, 31, 34, 37, 40, 45, 48, 52, 56, 62
Dec 2:	Review
Dec 6:	Final Exam 12:30-3 pm (Covers Sect. 5.2, 5.3, 5.4, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 10.3, 10.4, 10.5, plus above sections)