

**MATH 2425: Calculus II**  
Summer 2015

**Instructor:** Dr. Karl Backs

**Office Number:** Pickard Hall 448

**Office Telephone Number:** 817-272-7163

**Email Address:** kbacks@uta.edu

**Faculty Profile:** <https://www.uta.edu/profiles/karl-backs>

**Office Hours:** MTWTh: 9:30 – 10:30 am

**Lab TA:** Junwei Sun

**Office:** Pickard Hall 425

**Email:** junwei.sun@mavs.uta.edu

**Section Information:** MATH 2425-100

**Time and Place of Class Meetings:** Pickard Hall 321: MTWTh 10:30 – 12:30 pm

Lab section 101: 1 – 2 pm in Pickard Hall 305

**Description of Course Content:** Applications of integration, techniques of integration, parametric equations, polar coordinates, sequences, series vectors, dot product, cross product, planes and quadric surfaces. Prerequisite: C or better in [MATH 1426](#) or [HONR-SC 1426](#).

**Student Learning Outcomes:** Upon completion of MATH 2425, the student should be able to:

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.

**Textbook:**

*CALCULUS, EARLY TRANSCENDENTALS, CUSTOM EDITION FOR UT-ARLINGTON, BY SOO T. TAN*

Register for WebAssign at: <http://webassign.net/>

Class Key for 2425-100: **uta 1983 1061**

Students will then register for WebAssign and click "I Have a Class Key" link.

**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 not take attendance on a daily basis. However, students are responsible for obtaining all material and announcements given in class. Therefore daily attendance is necessary for student success in this course.

**Course Prerequisite:** A grade of C or better in Math 1426 (Calculus I) or HONR-SC 1426.

<b>Grading Scale:</b>	90-100	A
	80-89	B
	70-79	C
	60-69	D
	0-59	F

**Grade Components:**

Midterm 1	20%
<b>Thursday, July 23, 2015</b>	
Midterm 2	25%
<b>Thursday, August 6, 2015</b>	
Final Exam	35%
<b>Monday, August 17, 2015</b>	
Homework	5%
Quizzes	5%
Lab Worksheets	10%

**Midterms and Finals:** All of these exams are comprehensive. Each exam will be a mix of multiple choice problems and show-your-work problems.

**Any student who scores below 50 on the final exam cannot receive a grade higher than D in the course.**

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

[https://mavspace.uta.edu/xythoswfs/webview/xy-698342\\_1](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](https://mavspace.uta.edu/xythoswfs/webui/xy-1084452_1-t_BulwoeEK)

**Late homework assignments and make-up quizzes:** No late homework will be accepted for any reason. Make-up quizzes will not be given for any reason. At the end of the semester, the lowest 2 homework grades and the lowest quiz grade will be dropped.

**Lab Attendance Policy:** Lab attendance is mandatory. Students are allowed no more than 2 excused lab absences throughout the semester. Each absence past the 2<sup>nd</sup> will result in a 5 point reduction from their lab grade average at the end of the semester in addition to the loss of points for missed lab worksheets and quizzes.

**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 **Tuesday, August 4 at 4 pm** will receive a W. *Note that requests must be submitted to an advisor by 4 PM on August 4<sup>th</sup>.*

<p><b>Calculators:</b> The only calculators allowed for the quizzes, midterms, and final are TI-30XA and TI-30XIIS.</p>
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**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](http://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.**

<p>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.</p>
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**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](http://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 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](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

The Math Department operates the **Math Clinic**, a tutoring service staffed by upper level undergraduate students. The Math Clinic is located in Pickard Hall 325; 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.

All 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.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. 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>.

**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>.

**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.

**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.

**Textbook Sections Covered:**

6.1	Integration by Parts	5.2	Volumes: Disks, Washers, and Cross Sections
6.2	Trigonometric Integrals	5.3	Volumes Using Cylindrical Shells
6.3	Trigonometric Substitutions	5.4	Arc Length and Areas of Surfaces of Revolution
6.4	The Method of Partial Fractions		
6.6	Improper Integrals		
8.1	Sequences	9.2	Plane Curves and Parametric Equations
8.2	Series	9.3	The Calculus of Parametric Equations
8.3	The Integral Test	9.4	Polar Coordinates
8.4	The Comparison Test	9.5	Areas and Arc Lengths in Polar Coordinates
8.5	Alternating Series		
8.6	Absolute Convergence; The Ratio and Root Tests		
8.7	Power Series	10.1	Vectors in the Plane
8.8	Taylor and Maclaurin Series	10.2	Coordinate Systems and Vectors in 3-Space
8.9	Approximation by Taylor Polynomials	10.3	The Dot Product
		10.4	The Cross Product
		10.5	Lines and Planes in Space