Calculus 2: MATH 2425-300/310/320

Class Meeting	Section	Time	Place
Lecture	300/310/320	TTH 11:00a – 12:20p	PKH 110
Lab	302	TTH 1:00p – 1:50p	PKH 305
	311/321	TTH 10:00a – 10:50a	PKH 305
A-ESP Workshop	311	W 3:00p – 4:50p	PKH 305
	321	W 1:00p – 2:50p	PKH 305

Instructor Richard Chandler

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ESP Instructor R. Cavender Campbell

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Textbook

Calculus, Early Transcendentals, Custom Edition for UT-Arlington, by Soo T.

Register for WebAssign at: http://webassign.net **(WebAssign is REQUIRED for this course)**. Note that the class key for this section is **uta 8492 0968**.

If you purchased your book new, you received 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.

Prerequisites

A grade of C or better in MATH 1426 (Calculus 1) is required.

Description of Course Content

This course includes the study of applications and techniques of integration, parametric equations, polar coordinates, sequences, series, vectors, dot products, cross products planes and quadratic surfaces.

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; computes arc length of both polar and rectangular curves;
2. Compute the value of integrals by the method of integration by parts, trigonometric substitution and partial fractions;
3. Compute the values of improper integrals;
4. Compute the 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.

Grading Scale

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

Grade Components (300)

Online Homework (WebAssign)……5%
Quizzes……5%
Lab Attendance and Worksheets……10%
Midterm 1 (Friday, 2/13, 6-8pm)……20%
Midterm 2 (Friday, 3/27, 6-8pm)……25%
Final Exam (Saturday, 5/9, 12:30-3pm)……35%

Grade Components (310/320)

Online Homework (WebAssign)……2.5%
Quizzes……2.5%
Emerging Scholars Workshop……5%
Lab Attendance and Worksheets……10%
Midterm 1 (Friday, 2/13, 6-8pm)……20%
Midterm 2 (Friday, 3/27, 6-8pm)……25%
Final Exam (Saturday, 5/9, 12:30-3pm)……35%

Homework

Attached is the departmental assignment sheet for MATH 2425. Students are expected to be able to work all problems on this sheet by the end of the course, although they are NOT collected as part of your grade. It is your responsibility to stay current on the homework. The exam problems and the weekly quizzes are typically based on the problems found on this sheet.

A student must have access to WebAssign for this course as part of your grade will be based on the completion of homework assignments online. The problems will be similar to those off of the assignment sheet. Your homework grade is only based on the online homework.

Quizzes

Quizzes will be administered during your lab section each Tuesday. They will consist of 1-3 problems similar to those on the assignment sheet. You are allowed to use your own handwritten notes or notes I provide on my website on the quizzes. Other copies, printouts from the web or notes on electronic devices are not permitted.

I will keep the top 10 quiz grades. You must be present for the entire lab session in order to take the quiz.

Lab Attendance, Recitation & Problem Solving Activities

Each Tuesday, prior to taking your quiz, the lab session will be spent in recitation. This is your opportunity to ask the TA questions from homework, lecture, concepts, etc.

Each Thursday, your lab section will consist of a problem solving worksheet. These are intended to be more in-depth than the problems on the assignment sheet and are to be worked out in groups. Therefore, you will turn in the lab worksheets in groups of 3-4 (no more, no less).

The lab assignments will be due at the end of the lab that day. You must be present for the entire lab in order to turn in the lab assignment with your group. Because your lab will be 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 important questions and seek answers to them prior to encountering the associated lab.

I will keep the top 10 lab grades. Because they are group activities, if you are absent, it will hurt you as well as your group. So, attendance will be taken every day. For each absence, 1% of your final lab grade will be deducted. If you are more than 25 minutes late you will be considered absent. Also, you may not leave lab early. If you do so, you will be considered absent for the day. If you are absent on the day of a problem solving activity, you will not be part of a lab group for that week and you will be required to submit the missed lab work individually.

Emerging Scholars Program Workshops (311/321)

Students enrolled in sections 310/311 or 320/321 will also be participating in weekly workshops as part their participation in the Emerging Scholars Program. The purpose of these workshops is to go more in-depth into the topics covered in Calculus 2 than is possible in the standard lecture/lab components. The exact structure and grading of the workshop is at the discretion of the ESP Workshop Instructor and will be discussed at the first workshop meeting.

Midterms & Final Exam

These exams are departmental, i.e., all sections of Math 2425 will take the same exam and the grades will have the same weight in each section. 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 may access recent previous midterms and some of the 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.

Make-up Policy

Make-up Policy: If you have a conflict with either midterm or final, you must contact your instructor no later than Census Date (February 4), 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 February 4, contact your instructor immediately. **Delays in submitting a make-up request may mean that your request cannot be approved by the course coordinator.**

Makeups for quizzes will only be given for university activities such as athletics and illness with a doctor's note.

Calculator Policy

You must only use nonprogrammable calculators with basic computational features, such as arithmetic and transcendental functions. You may NOT use any calculator with the following capabilities: graphing, equation solving, differentiation, integration, QWERTY keyboard, and any device that has internet capabilities (This means NO CELL PHONES, TABLETS, ETC).

The recommended calculator is the TI-30XS or the TI-30XIIS. The TI-30XS has a number of nice typesetting and evaluation features that you may find useful. **If you would like to use another calculator, you must get it approved by me BEFORE the exam date. Failure to do so may result in not being able to use a calculator on you exam.** The same calculator policy applies to labs and quizzes.

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.

Math Clinic

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……8:00a – 9:00p
Friday……8:00a – 1:00p
Saturday……1:00p – 6:00p
Sunday……1:00p – 9:00p

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.

Science Education and Career Center (SECC)

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……8:00a – 8:00p
Friday……8:00a – 5:00p
Saturday……12:00p – 5:00p

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.

Tutor List

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.

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://wweb.uta.edu/aao/fao/). Any student who drops this course on or before Wednesday, October 30 at 5 PM will receive a W.

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.

Email Policy

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.

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.

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 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.

Grade Replacement & Exclusion

These policies are described in detail in the University catalog and can also be founded online at http://wweb.uta.edu/catalog/content/general/academic_regulations.aspx#10 (scroll about half way down the page).

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, which is located at the southeast corner of the building. 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.

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

Important Dates

February 4th .....Census Date (Deadline for ALL Make-up Exam Requests)
February 13th .....Midterm 1
March 9th-March 14th .....Spring Break
March 27th .....Midterm 2
April 3rd .....Last Day to Drop Classes
May 8th .....Last Day of Classes
May 9th .....Final Exam

Course Schedule

"As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course." – Richard Chandler.

1/20	6.1 Integration by Parts
1/22	6.2 Trigonometric Integrals
1/27	6.3 Trigonometric Substitutions
1/29	6.4 Partial Fractions
2/3	6.6 Improper Integrals
2/5	8.1 Sequences
2/10	Review
2/12	Review
2/13	Midterm 1
2/17	8.2 Series
2/19	8.3 The Integral Test
2/24	8.4 Comparison Tests
2/26	8.5 Alternating Series
3/3	8.6 Absolute Convergence & the Root and Ratio Tests
3/5	8.7 Power Series
3/9	Begin Spring Break
3/13	End Spring Break
3/17	8.8 Taylor & MacClaurin Series
3/19	8.9 Approximation by Taylor Polynomials
3/24	Review
3/26	Review
3/27	Midterm 2
3/31	5.2 Volume, Disk Method
4/2	5.3 Volume, Shell Method
4/7	5.4 Arc Length & Surface Area
4/7	9.2 Plane Curves and Parametric Equations
4/9	9.3 Arc Length & Surface Area with Parametric Curves
4/14	9.4 Polar Coordinates
4/16	9.5 Areas and Lengths in Polar Coordinates
4/16	10.1 Vectors in the Plane
4/21	10.2 Coordinates and Vectors in 3-Space
4/23	10.3 The Dot Product
4/27	10.4 The Cross Product
4/30	10.5 Lines and Planes in Space
5/5	Review
5/7	Review
5/9	Final Exam

Math 2425 Calculus II

Calculus Early Transcendentals by Soo Tan

6.1: Integration by Parts
1, 6, 10, 12, 17, 18, 20, 22, 30, 37, 42, 58, 67
6.2: Trigonometric Integrals
2, 4, 7, 13, 15, 16, 18, 23, 27, 32, 37, 40, 46, 48, 49
6.3: Trigonometric Substitutions
4, 6, 8, 10, 11, 13, 15, 16, 20, 22, 24, 26, 30, 31, 35, 47
6.4: Partial Fractions
3, 6, 11, 14, 16, 22, 24, 26, 32, 34, 37, 42, 44, 45
6.6: Improper Integrals
7, 12, 14, 16, 20, 21, 23, 24, 27, 28, 29, 30, 33, 35, 38, 45, 46, 48

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
8.2: Series
2, 3, 6, 8, 10, 14, 20, 22, 32, 33, 38, 39, 42, 43, 46, 47, 48, 51, 63
8.3: The Integral Test
2, 4, 6, 7, 8, 10, 12, 16, 18, 19, 20, 24, 25, 26, 27, 33
8.4: Comparison Tests
1, 3, 4, 6, 7, 9, 10, 11, 12, 18, 20, 23, 24, 26, 28, 31, 33, 34, 35, 37
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
8.6: Absolute Convergence and the Ratio and Root Tests
4, 6, 9, 11, 12, 13, 15, 19, 20, 21, 24, 25, 28, 29, 32, 34, 35
8.7: Power Series
2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 17, 18, 22, 23, 24, 25, 29
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
8.9: Approximation by Taylor Polynomials
4, 6, 7, 9, 11, 13, 17, 20, 21, 25, 27, 33, 34, 35, 36

5.2: Volume, Disk Method
2, 4, 6, 10, 11, 17, 19, 20, 23, 25, 27, 32, 50, 53, 57, 59, 60
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
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

9.2: Plane Curves and Parametric Equations
2, 3, 7, 9, 11, 20, 23, 31, 32, 51

Calculus Early Transcendentals by Soo Tan

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
9.4: Polar Coordinates
2, 6, 10, 13, 20, 23, 27, 32, 38, 47, 51, 54, 55, 58, 63, 68, 70, 71, 74
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

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
10.3: The Dot Product
1, 4, 8, 15, 20, 22, 26, 30, 31, 34, 40, 42, 47, 48
10.4: The Cross Product
1, 6, 10, 12, 14, 18, 20, 22, 24, 28, 30, 34, 39
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