Preparation for Calculus
Math 1421—350
Spring 2018

Time: Tuesday, Thursday 3:30 — 4:50 PM
Classroom: COBA 255
Instructor: Prof. Barbara Shipman
Office: Pickard Hall 437
Phone: (817) 272-2606
E-mail: bshipman@uta.edu
Office Hours: Tuesday, Thursday 1:30 — 2:30 PM
Course Website: www.uta.edu/faculty/shipman at Student Center, Math 1421
Faculty Profile: https://www.uta.edu/profiles/barbara-shipman
MathLabsPlus: www.uta.mylabsplus.com (Enter Net Id, get a password, and log in.)

Lab Sections: 351-LAB at 5:30 PM in PKH 305 & 352-LAB at 6:30 PM in PKH 309
Graduate Teaching Assistant (GTA): Dwight Williams
GTA's Office Hours: TBA

Prerequisite: C or better in MATH 1302 or a qualifying score on the Math Placement Test.

Textbook (required): Customized version of Math 1421 Precalculus e-Text, by Eric Schulz, William L. Briggs, & Lyle L. Cochran. *Purchase directly from the UTA bookstore, via the link on Blackboard, for a price cut and to get the correct version.* In Blackboard, there is a handout that explains more about accessing the materials. An optional loose-leaf study guide is available from the UTA bookstore. A hard copy of the text is available via Amazon (ISBN-13: 978-0133883107 and ISBN-10: 0133883108).

Calculator (required): TI-30XA or TI-30XIIS. These are scientific calculators without graphing. They are relatively inexpensive, good value for the price, and will be useful in the course.

Active Learning Course: This class is designed to be fun and enjoyable, creative, interactive, and challenging. It will help you to think and learn at a new level that will become a cornerstone for your future studies. You will be working with each other on problems in class, contributing to debates and discussions, and presenting your work and reasoning together at the board. Come ready to make every class and lab a highlight of your day ☺

Daily Activities:
- **Tuesday's Class:** Attendance at 3:30. Discussions on study problems for the week
- **Tuesday's Lab:** Review and Quiz on work from previous week
- **Thursday's Class:** Attendance at 3:30. Discussions on study problems for the week
- **Thursday's Lab:** Team work on study problems

Course Description: This course integrates and builds on concepts and skills from college algebra and trigonometry that are essential to success in calculus. Problem solving activities form the basis for the establishment of these mathematical connections.

Learning Outcomes: On completion of Math 1421,
- Students will be able to justify and explain their steps in solving problems. In particular, students will be able to construct correct and detailed mathematical arguments to justify their solutions to problems.
- Students will be able communicate their reasoning and solutions to their peers in a clear and engaging way. Students will also be able listen to their peers' reasoning and respond to it in a constructive way.
- Students will demonstrate facility with expressing, applying, and combining functions in tabular, graphical, and symbolic forms.
- Students will be able to identify and analyze the unifying characteristics of functions and their graphs including invariant properties under function transformations, domain and range, asymptotes, zeroes, and end behavior.
- Students will be able to interpret and define the six trigonometric functions, in terms of both right triangles and the unit circle. They will be able to graph trigonometric and inverse trigonometric functions, without the aid of a graphing calculator, by applying the concepts of amplitude, periods and phase shifts. Students will also be able to verify and use trigonometric identities and formulas and to apply them to solve trigonometric equations and word problems, including problems that require solving a triangle.

- **Expectations of the Student**:
  No Electronics during class: All electronics, including cell phones, tablets, and laptops must be put away and out of sight during class.
- **Attendance:** Every class and every lab requires your active participation and learning. For your full benefit and enjoyment, attend every class and every lab, arrive on time, and remain in class and actively engaged for the whole period.
- **Participation:** Bring the assigned study problems well prepared to every class and participate fully in presentations and class activities.
- **Study time:** Set aside about 9 hours per week outside of class to study for this course.
- **Course notebook:** Keep a current and organized folder with correct solutions to all problems assigned or discussed in class.
- **MavMail and Announcements:** Keep an activated MavMail account and check it regularly. You are responsible for all information that I send to your MavMail account and all announcements made in class or on the course website.
- **Asking for help when needed.** Ask for help on material that you may not be grasping fully. You may work with your classmates, come to office hours, or send me an e-mail with specific questions.
- **Personal responsibility.** This class is set up to be engaging and enjoyable and to help you to put in your best hard work for great learning. Make your success in this class a priority; we are here to help you for a great experience in math!

Grading Scheme:

Weekly Quizzes in Lab (dropping two lowest scores):	45%
Final Exam:	35%
Lab Attendance and Participation:	10%
Class Attendance, Participation, and Quick Quizzes:	10%
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Course average	100%

All students in Math 1421 must pass the *Calculus Gateway Exam* on or before the last class day in order to receive a grade above D in the course. See details under *Calculus Gateway Exam* below.

Your course average determines your final grade, provided that you pass the Calculus Gateway Exam, as described below. A: 90—100%. B: 80—89%. C: 70—79%. D: 60—69%. F: 0—59%. Students are expected to keep track of their performance throughout the semester and seek guidance from available sources and the instructor if their performance drops below a C. Grading criteria for each component are given below.

Calculus Gateway Exam: All students in Math 1421 must pass the Calculus Gateway Exam (CGE) on or before the last class day in order to receive a grade above D in the course. I will let you know when the CGE becomes available; it will be under the "lab" link in MyLabsPlus. Students are allowed up to 3 attempts on the CGE, and these attempts can be used only during the period of eligibility. The CGE is to be taken outside of class and is subject to University rules on academic dishonesty. You are allowed to use a non-graphing calculator on the CGE, but you may not receive help from any source. Receiving or providing assistance on the CGE will be subject to discipline for academic dishonesty. It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. Discipline may include suspension or expulsion from the University.

Quizzes: Every Tuesday in the Lab, there will be a quiz related to the study problems and class material from the previous week. It will graded on correctness, completeness, and clarity. Study well and show your very best work. Two lowest quiz scores will be dropped. A missed quiz cannot be made up.

Final Exam: There will be a cumulative final exam on Thursday, May 10, 2– 4:30 PM, in the same room as the class. This is a written exam where you can show your best creative work in solving problems and explaining your reasoning. We will begin preparing for this on the first day of class!

Attendance and Participation:
For every class and every lab, you will receive a score of 2, 1, or 0. For 2/2, you must be in class on time, present for the entire period with good participation and never using any electronic device. The score reduces to 1 or 0 if you are late to class, disrupt class, or use an electronic device during class. The score is 0 for missing class for any reason.

Study Problems: Each Tuesday in class, you will receive a new set of study problems. They will also be posted on the Course Calendar at the Course Website at the top of this syllabus. The study problems will not be turned in or collected. You will work on them together in class and in lab.

Additional Practice Problems: In MathLabsPlus and in the eText, there are plenty of additional problems available for extra practice. Work on these as much as you wish, after finishing your work on the assigned study problems. Give special attention to the Skills Reviews in preparation for the Calculus Gateway Exam. We may also work on some of these problems in class.

Attendance Policy: At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. 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 count attendance and participation in every class in every lab towards the course grade as described in this syllabus.* However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

Electronics Policy: Students may not use electronics of any kind during class or lab meetings.
This includes (but is not limited to) cell phones, tablets, and laptop computers.

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/).

Drop Date: March 31 (Friday) by 4 PM

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.

Disability Accommodations: UT 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), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* 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 disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:
The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.
Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

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.

Non-Discrimination Policy: 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.

Title IX Policy: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit* www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Academic Integrity: Students enrolled all UT Arlington courses 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 in their courses by 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. Additional information is available at https://www.uta.edu/conduct/.

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.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit http://www.uta.edu/news/info/campus-carry/

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are 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 via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit http://www.uta.edu/sfs.

Final Review Week: for semester-long courses**,** 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, which is located outside the classroom door on the right (facing the front), down the stairs, and out the doors to the left. 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 individuals with disabilities.

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 http://www.uta.edu/universitycollege/resources/index.php.

START STRONG Freshman Tutoring Program:
University Tutorial and Supplemental Instruction (UTSI)/University College
All first time freshmen can receive five FREE hours of tutoring for this course and other selected subjects for this semester. **Students must sign up and complete their first hour of tutoring by September 23, 2016.** To sign up, visit UTSI in 205 Ransom Hall/University College. Upon completion of your first tutoring appointment, you will receive five hours of additional free tutoring. Flexible tutoring hours are available from 7:00am – 9:00pm, seven days a week at secure locations on campus. All tutors receive extensive training. Find out more at www.uta.edu/Startstrong

The Math Department operates the **Math Clinic**, a free tutoring service staffed by upper level undergraduate students. The Math Clinic is in Room 325 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 am – 9 pm
Friday	8 am – 1 pm
Saturday	1 pm – 6 pm
Sunday	1 pm – 9 pm

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.

Grade Replacement and Grade Exclusion Policies: 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).

Student Disruption: The University may impose disciplinary action for an infraction of University policies, including engagement in conduct, alone or with others, that obstructs, disrupts, or interferes with any function of class activities.

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.

Important Dates

January 16 (Tuesday)	First Day of Classes
January 31 (Wednesday)	Census Date
March 31 (Friday)	Drop Date – by 4 pm
May 10 (Tuesday)	**Final Exam, 2:00 – 4:30 PM**

Course Schedule: *This day-by-day outline is approximate; as the instructor of this course, I may adjust this schedule in any way that better serves the educational needs of the students enrolled in this course.*

Week 1	Jan 16 Jan 18	Interesting Class Activities! Explorations on the meaning of a function
Week 2	Jan 23 Jan 25	Graphs of functions, linear functions, Combining functions to create new ones
Week 3	Jan 30 Feb 1	Transformations of functions to create new functions, Quadratic functions, families of functions
Week 4	Feb 6 Feb 8	Focus on polynomial functions, real roots and factors of polynomial functions, rational functions
Week 5	Feb 13 Feb 15	More on rational functions, working with inequalities Exponential functions
Week 6	Feb 20 Feb 22	Inverse functions Logarithmic functions and identities
Week 7	Feb 27 Mar 1	Review/comparison/contrast of various functions studied Solving exponential and logarithmic equations
Week 8	Mar 6 Mar 8	Angles and their measures via the unit circle, definitions of sine and cosine and tangent, sine and cosine and tangent functions
Week 9	Mar 20 Mar 22	The secant, cosecant, and cotangent functions Trigonometry of a right triangle
Week 10	Mar 27 Mar 29	More on right triangles and the unit circle Inverse trigonometric functions
Week 11	Apr 3 Apr 5	More on inverse trigonometric functions, Laws of sines and cosines
Week 12	Apr 10 Apr 12	Working with the laws of sines and cosines Applications involving geometry of triangles
Week 13	Apr 17 Apr 19	Fundamental identities of trigonometric functions, sum difference, and double-angle identities, power-reducing, half-angle, and other identities, solving trigonometric identities
Week 14	Apr 24 Apr 26	Parametric equations Polar coordinates, polar equations,
Week 15	May 1 May 3	Graphing in polar coordinates Review
Final	**May 10**	**(Thursday) Final Exam: 2 – 4:30 PM**