**MATH 1332 – Functions, Data, and Applications**

**Instructor(s):** Mark Krasij, MS, MAT, MA

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**Office Hours:** W 1-5, or by appointment

**Course Description:** An exploration of interpreting data, using cooperative groups, spreadsheets and mathematical models. Topics include graphs, applications to economics and natural sciences, function concepts, counting principles, and basic probability and statistics.

**Goals:** This course is designed to prepare future elementary school teachers mathematically to teach math. It does this in two main ways: by teaching mathematics which is relevant (not identical) to the mathematics they will be teaching, and by modeling a mathematics classroom through problem-solving activities, cooperative groups, and holding students responsible for deciding (reasoning) what is correct.

**Philosophy:** There will be almost no lecturing in this course. To help you develop your intuitive reasoning and problem-solving skills, we will spend most of our class time working in small groups on problems from the course packet. An important part of learning to solve problems is being willing to struggle with a problem even after you get stuck, and this is one of the first things you will face this term. You may be surprised by how much you can do if you just keep at it!

 We will usually discuss the problems in a large group after most groups have finished them. Sometimes you will be asked to write up your ideas and solutions, but you are always expected to think about the problems, participate in solving them, and communicate your ideas with others. Communicating your ideas clearly to others is as important as developing them in the first place.

 Note that this is a mathematics content course, and not a pedagogy course. We hope that taking this course will help you be a better teacher. Students who come out of this course generally feel a lot more comfortable about teaching mathematics, and about being a mathematical authority in the classroom.

**Text Materials:** course-pack - available at Bird’s Copy Shop [208 S. East St. Arlington, TX. 76010; 817-459-1688]

**Cell Phone Policy:** Cell phones, ipads, laptops, etc. should always be off or silenced, and out of sight during class. Use of such electronic devices will negatively impact your grade. *If you have an exceptional circumstance which absolutely requires being ‘on call’ e.g. and need to have access to your cell phone I need to know about it beforehand.*

**Calculator Policy:** Allowed in class and on exams, but only “standard” calculators. No cell phones, ipads, laptops, etc.

**Grading Format:** A (90-100), B (80-89), C (70-79), D (60-69), F (0-59)

**Grades:** Exams (2) – 40% (20% each); Attendance and Participation – 20%; Written Work – 40%

**Exams:** These will be similar in nature to the problems we work in class, but short enough that you should be able to complete them in the time given. There will be a midterm and a final exam.

**Note: If an emergency comes up and you need to miss a scheduled exam, I need to know about it before the exam occurs (unless hospitalized, e.g.). Official documentation must be provided.**

**Attendance and Participation:** These are an important part of your grade because this course is more an experience than a set of material to be learned. Most of what I hope will happen for you in this course will take place inside the classroom, working in groups and talking with others.

 You may miss up to 3 days (excused or not) without penalty; after that it starts affecting your grade. Arriving late (after we have started class) or leaving early counts as half an absence. Each absence after the third (excused or unexcused) will take two percentage points off your final average (10% off your Attendance and Participation grade).

To get 100% credit for participation you must: (i) attend class regularly and not miss more than three class periods; (ii) always have a positive attitude in class; (iii) always work diligently with all of your group members and be focused on your work.

**Written Work:** Generally in the MATH 1330, 1331, 1332 courses there are two components: ‘write-ups’ (also called problem reports) and ‘reflections.’ In MATH 1332 these are often combined into one assignment.

A write-up is a detailed solution to a problem we discussed in class. These write-ups should be readable independently of any worksheet on which they are based, in good English and either legibly written or word-processed. They should include the following: (i) a statement of the problem; (ii) strategies you used to attack the problem; (iii) the solution you obtained, with an explanation of how you got it (and how you know it is complete); and (iv) a conclusion that says what we have learned from the problem.

 A reflection covers less concrete issues like “What does it mean to get stuck?” These essays, usually a page or two in length, will be graded more loosely, more on how much thought went into it than on organization and content.

 Typically, assignments will be due at the start of class a week after they have been assigned.

**Late Paper Policy:** Assignments must be passed in at the very beginning of class, or when I ask for them during class. Papers handed in after that (but before the end of the class period) lose up to 10%. Papers handed in after the class period lose up to 20%. Papers handed in the next day lose up to 30%, the next day 40%, and so on.

**Plagiarism:** All students must write their own papers, and cite sources if materials are borrowed. Penalty for plagiarism is an automatic grade of zero for the assignment and possible additional university penalties for all students involved. No two papers should be of the same form with a few words changed here and there. Each paper must be your own work.

**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 Friday, November 2nd, 4 pm will receive a W.

**Disability Accommodations:** UTArlington 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)** <http://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](http://www.uta.edu/disability).

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.

**Counseling and Psychological Services (CAPS)** [www.uta.edu/caps/](http://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.

**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](http://www.uta.edu/hr/eos/index.php).

**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](http://www.uta.edu/titleIX) or contact Ms. Michelle Willbanks, Title IX Coordinator at (817) 272-4585 or titleix@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/>. Faculty are encouraged to discuss plagiarism and share the following library tutorials <http://libguides.uta.edu/copyright/plagiarism> and <http://library.uta.edu/plagiarism/>

**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. Take a left or right out of the classroom, head to the corner of the building (where the exits are located). 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](http://www.uta.edu/studentsuccess/learning-center/utsi/tutoring/index.php), [major-based learning centers](http://www.uta.edu/universitycollege/resources/college-based-clinics-labs.php), developmental education, [advising and mentoring](http://www.uta.edu/universitycollege/resources/advising.php), personal counseling, and [federally funded programs](http://www.uta.edu/studentsuccess/learning-center/mcnair-scholars/index.php). 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/studentsuccess/success-programs/programs/resource-hotline.php>

**The** [**IDEAS Center**](https://www.uta.edu/ideas/) **(**2nd Floor of Central Library) offers **FREE** [tutoring](https://www.uta.edu/ideas/services/tutoring/index.php) to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

**Important Dates:**

Thursday, August 23rd First day of class

Monday, September 3rd Labor Day Holiday

Friday, September 7th Census Date

**Tuesday, October 16th Midterm Exam**

Friday, November 2nd Last day to drop a class (by 4 pm)

Wednesday, November 21st No classes scheduled

Thursday-Friday, November 22nd -23rd Thanksgiving Holidays

Tuesday, December 4th Last day of class

**Thursday, December 6th Final Exam 11am-1:30pm**

**Course Schedule:**

**(Goal is to be done with the given sections by the dates listed)**

**8/23 Conducting Surveys**

**8/28 Representative Sampling**

**8/30 Lying with Statistics**

**9/4 Representing Data Graphically**

**9/6 Handling Data (Exam Scores)**

**9/11 Measuring the “Middle”**

**9/13 Measuring the “Spread”**

**9/18 Types of Graphs**

**9/20 Scatterplots**

**9/25 Histograms**

**9/27 Using Variables**

**10/2 Introduction to Functions**

**10/4 Concavity**

**10/9 Formulae**

**10/11 Exam Review**

**10/16 Midterm Exam**

**10/18 Formulae, cont.**

**10/23 Formulae, cont.**

**10/25 Permutations**

**10/30 Combinations**

**11/1 Introduction to Probability**

**11/6 Joint Probability**

**11/8 Conditional Probability**

**11/13 Let’s Make a Deal**

**11/15 Gradesheets**

**11/20 Predicting the National Debt**

**11/27 Continuous Distributions**

**11/29 Normal Distribution**

**12/4 Review for Final Exam**

**12/6 Final Exam**

 “*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.” – Mark A Krasij.*

**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. Non-emergency number 817-272-3381.