TEXAS A&M UNIVERSITY MATH 365 Structure of Mathematics I

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Emails: In all correspondence, please include your name, your course number, and your section number in the subject line. Please check your TAMU email daily, as I frequently send the class emails.

Web Site: http://www.math.tamu.edu/~sherry.scarborough/
Dr. Sherry’s Office Hours: Mondays 3–4pm, Tuesdays 1:30–3pm, Thursdays 10:30am - noon


Supplies: For all class days, you will need to bring your class notes (found in your Math 365 link on at http://elearning.tamu.edu/), your TAMU student ID, and a #2 pencil.

Course Description: (Credit 3) Informal logic, sets, relations, functions, whole numbers, numeration systems, binary operations, integers, elementary number theory, modular systems, rational numbers and the system of real numbers. Designed primarily for elementary teacher certification. Others must have consent of instructor.

Prerequisites: Must have completed University Core Curriculum mathematics requirements with a grade of C of better.

Class Times:
Math 365-501 MWF 1:50 – 2:40pm Blocker 117

Tentative Exam Schedule: You must bring your TAMU student ID to all exams.
- Exam I (Chapters 1 – 3): Wednesday, February 13
- Exam II (Chapters 4 – 5): Wednesday, March 6
- Exam III (Chapters 6 – 7): Wednesday, April 10

Comprehensive Final Exam Schedule: You must bring your TAMU student ID to all exams, including the final.
Math 365: Tuesday May 7th from 3:30 – 5:30pm in BLOC 117

Grading: You will be expected to show all of your work on all problems for full credit, unless it is stated otherwise. Three in-class exams (20% each) are 60% of your grade, your quizzes 15%, and your comprehensive final 25%. Due to confidentiality, grades will not be discussed via phone or email, only in person. At the end of the semester you will receive the grade you earned. Grade cutoffs are: A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, D: 60 – 69%, F: 0 – 59%

Grade Disputes: Once you leave class with any graded paper you accept its grade, unless there is a totaling error. All grade disputes must be dealt with at the time you receive them. If the grade was not totaled correctly, you have one week from when the paper was first returned to the class to have the correction made.

Quizzes: Quizzes will be given in lecture or out of class, usually once or twice a week, and may or may not be announced ahead of time. Quizzes may be given at any time during the class, so make sure you arrive on time and stay the whole time for each class. If you miss a quiz, you must have written proof of a University approved excused absence AND contact me NO LATER than the second working day after the quiz to schedule a make-up. At the end of the semester, two of your lowest quiz grades will be dropped, excluding your note card grade. The note card assignment is due on or before your Math 365 class on Wednesday, January 30th. Information regarding the note card assignment can be found at http://www.math.tamu.edu/~scarboro/365spring2013welcome.pdf.
Homework Problems: Homework (assessments, connections, and reviews) problems can be found at the end of each text section. I STRONGLY recommend you keep a spiral notebook in which you work the homework problems before the next class. Working these problems is essential to your learning and will help you to be fully prepared for your quizzes and exams.

Calculator Policy: Calculators are NOT allowed.

Cell Phone Policy: No texting, no ringing phones, and no vibrating phones during class or office hours.

Make-Up Policy: No make-up examinations or assignments will be given without a university approved excused absence (See the Texas A&M University Student Rules). An absence for a non-acute medical service or regular check-up does not constitute an excused absence. To be excused you must notify me (acknowledged email or written) prior to date of absence if such notification is feasible. Consistent with Texas A&M Student Rules, students are required to notify their instructor NO LATER than the end of the second school day after missing an examination or assignment. If no such notice is given, the rights to a make-up are forfeited. For injury or illness too severe or contagious to attend class, you must provide confirmation of a visit to a health care professional affirming date and time of visit. The Texas A&M University Explanatory Statement for Absence from Class Form will NOT be accepted. It is the student's responsibility to contact his/her instructor to schedule a makeup!

Attendance: Attendance is required in this course. If you miss class, you must have an official University excused absence (with written proof) in order to hand-copy my notes during office hours.

Policies: Policies pertaining to absences, scholastic dishonesty and final examinations are identical to TAMU regulations. Students with an official excused absence are permitted to make up work only for the dates of the absence. All other assigned work, even that assigned on the excused date, is due as assigned.

Late Policy: No late work will be accepted.

Copyright: All exams, printed handouts, class notes, assignments, and quizzes are protected by U.S. Copyright Laws. No multiple copies can be made without my written permission. No exams, quizzes, or assignments may be shared with anyone outside of this class. Class notes, online material, exams, quizzes, handouts, or subsets thereof may NOT be posted on Facebook, Twitter, Yahoo!Answers, YouTube, blogs, wikis, forums, videos, podcasts, or any other social media.

Plagiarism: As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. Class notes, online material, exams, quizzes, handouts, or subsets thereof may NOT be posted on Facebook, Twitter, Yahoo!Answers, YouTube, blogs, wikis, forums, videos, podcasts, or any other social media.

Academic Integrity Statement: Aggie Honor Code: “An Aggie does not lie, cheat, or steal or tolerate those who do.” You are an Aggie and so am I! Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit http://aggiehonor.tamu.edu/. Students may work together on the recommended text homework problems. Individual quizzes and examinations are to be taken individually. You may not discuss the contents of an exam until they are returned, to do so violates the Aggie Honor Code. The final exam contents are confidential forever since the final exam is property of the mathematics department and will not be returned.
Aggie Honor Code Violations (cheating): All Aggie Honor Code and copyright violations will be reported. Violations include copying someone else’s work, acquiring answers from an unauthorized source, allowing someone to copy your work, continue writing on an exam or quiz after time is called, violating copyright laws, having someone else do your assignments, posting class material on any social media, etc. Common sanctions include getting a zero for the assignment, getting an F for the course, not being allowed to drop the course, getting a star by your grade on your transcript indicating academic dishonesty, not graduating with honors, getting expelled, dismissed, or suspended from the university, and/or completing an Honor Council Academic Integrity Development Program course, etc.

Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information, visit http://disability.tamu.edu.

Personal Requests: You are always welcome to come to my office hours; you do not need an appointment. I encourage you to come, ask questions, as often as you would like. Students who come to office hours can get personal attention and help. If you smoke, please ‘air out’ some before visiting. As a courtesy to all, please turn your cell phones and pagers off during all classes and office hours. Thanks!

Please Note: While it is critical that you attain the correct answer to a question, you must show correctly, precisely, and accurately its solution (all the steps, labels, explanations, equal signs, models, etc.) in an orderly, clear, concise manner. Where appropriate circle your final answer. You are responsible for your own learning.

Emergencies: On-campus phones: 9-911 Off-campus and cell phones: 911

Help:
- Me! Please actively participate with me and let me know your problems, your questions, and your concerns
- Your classmates! Form study groups and work on the recommended homework problems together
- Bookmark my Math 365 web page so you will know where to find all important information http://www.math.tamu.edu/~sherry.scarborough/365topics.html
- Read my class notes and skim the book before class
- Attend all classes and ask questions
- Streaming Videos: Our streaming videos allow you to watch and listen to math problems being solved and can be found on my Math 365 web page.
- Work all your recommended text homework
- Work all of the old exams and old review problems that are posted on my Math 365 web page before looking at the solutions
- Attend my office hours and ask me for help with homework problems or mathematical concepts.
- Keep up with the material in the course
- Get a personal tutor (a list is available outside Blocker 602)
- Contact the Learning Skills Center (845-4427)
- Contact tutoring@aggieculture.tamu.edu
- Contact Services for Students with Disabilities, if needed, at 845-1637
Goals: Students who participate in this course should improve their ability to:
- Develop the particular mathematical knowledge and skills needed for teaching mathematics;
- Understand some mathematical theory regarding elementary and middle school mathematics;
- Appropriately represent the mathematics they are expected to teach, in multiple ways;
- Develop and explain their own mathematical thinking (verbally, pictorially, and in writing); and
- Analyze and evaluate the mathematical reasoning of others.
- Note this is a mathematics-content course and NOT a teaching-methods course.

Learning Outcomes: (with thanks to Angie Allen)
- Implement a variety of problem-solving strategies in order to solve mathematical problems
- Explore patterns in order to understand sequences such as arithmetic, geometric, and recursive sequences
- Apply rules of logic and reasoning, such as truth tables, to analyze statements and conditionals as well as to determine the validity of arguments
- Gain an appreciation for our base ten numeration system by demonstrating knowledge of a variety of ancient numeration systems such as the Babylonian and Mayan systems
- Understand sets including their properties and operations
- Demonstrate knowledge of whole numbers including their properties and operation algorithms (base ten as well as other bases)
- Apply mental mathematics and computational estimation strategies to solve mathematical problems
- Solve word problems by constructing systems of equations
- Understand properties and applications of equations, functions, and relations
- Demonstrate knowledge of whole numbers including their properties and operations
- Demonstrate knowledge of integers including their properties and operations
- Understand the additive identity and the multiplicative identity
- Demonstrate knowledge of the definition of subtraction, multiplication and division
- Understand the Closure, Commutative, Associative, and Distributive Properties
- Demonstrate knowledge of the definition of less than
- Understand and prove why one cannot divide by zero
- Investigate and apply various theorems and algorithms involving integers such as the Fundamental Theorem of Arithmetic and the Euclidean Algorithm
- Demonstrate knowledge of rational numbers including their properties and operations
- Demonstrate knowledge of the rules of exponents, roots and radicals
- Demonstrate knowledge of decimals as well as their operations
- Apply ratios and proportional reasoning to solve mathematical problems
- Understand and apply rules of percents to solve mathematical problems

Tentative Schedule:
- **Week 1**: Introduction, Sections 1.1 – 1.3
- **Week 2**: Sections 2.1 – 2.3
- **Week 3**: Sections 3.1 – 3.2
- **Week 4**: Sections 3.3 – 3.5
- **Week 5**: Review, Exam I (Chapters 1 – 3), Section 4.1
- **Week 6**: Sections 4.2 – 4.3
- **Week 7**: Sections 5.1 – 5.2
- **Week 8**: Review, Exam II (Chapters 4 – 5), Section 6.1
- **SPRING BREAK**
- **Week 9**: Sections 6.2 – 6.3
- **Week 10**: Sections 6.4, 7.1
- **Week 11**: Sections 7.2 – 7.4
- **Week 12**: Review, Exam III (Chapters 6 – 7), Section 8.1
- **Week 13**: Sections 8.2 – 8.3
- **Week 14**: Sections 8.4 – 8.5
- **Week 15**: Review for Comprehensive Final Exam