



**Math 372.71W: Mathematical Structures
(Algebraic Reasoning for Middle School Math Majors)
COURSE SYLLABUS: Fall 2018, 3 semester credit hours**

Instructor: Dr. Pamela S. Webster
Office Location: Binnion 315
Office Hours: T/R 10:45am – 12:15pm;
 W 10am – noon; and by appointment
Office Phone: 903-886-5950 **Office Fax:** 903-886-5945
University Email Address: Pamela.Webster@tamuc.edu

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

Text & Supplement: *Fostering Algebraic Thinking: A Guide for Teachers Grade 6 - 10*, by Mark Driscoll. Published by Heinemann.

Supplies Needed: Basic calculator and a three-ring binder or folder for handouts. You may also want a ruler (metric and standard), stapler, and colored pencils.

In addition, you'll want to purchase or create your own set of **Algebra Tiles**. Just at a glance, you can purchase a student set of Algebra Tiles at the ETA Hand2Mind website for \$2.25 at this link: <https://www.hand2mind.com/item/algebra-tiles-plastic-student-set/5136> or I'm sure you can find them at other online sources. You can also cut out a set of foam algebra tiles in the Math Skills Center, Binnion 328, on the Commerce campus, if you have the appropriate construction paper colors, or you can purchase foam from a math education faculty member.

Please also use only pencils (no pens) on all exams.

The content for the course will be posted in your MyLeo account. To access the course, you will go into MyLeo and the "Apps" and look for the app for "MyLeo Online (D2L Brightspace)". You should see directions to choose your course from the course grid that looks like:



Once you have chosen the Math 372 course, you will be able to see each week's module under the content options.

Calculators: A graphing calculator is recommended during this course. **I highly recommend a TI-83 or TI-84** be used throughout the course. If you chose to use a different calculator, please note that the instructor *will not be a good resource for you to be able to use your calculator.*

Course Description: A study of the algebraic processes, polynomials, equations, inequalities, functions, graphs, and mathematics of finance. (Note: Students should already have substantial skill in many of these areas. The course focuses on underlying concepts and multiple techniques of explaining the concepts; also, extended problem-solving.) Prerequisites: "C" or better in MATH 1351 or 351 or MATH 2414 or 192.

Student Learning Outcomes: Upon successful completion of this course, students will:

- Demonstrate a developed understanding of mathematics
- Make connections of ideas within and between mathematical concepts
- Possess the ability to think algebraically and explain such thinking
- Demonstrate the manipulation of numbers and develop creation of formulas
- Display proficiency in solving problems algebraically
- Demonstrate and Explain the appropriate use of algebraic manipulatives to teach algebraic concepts

COURSE REQUIREMENTS

Instructional Methods / Activities Assessments

Instructional Methods: Instruction will include lectures, demonstrations and models, and some group and individual work, based on the time available throughout the semester. Hands-on activities and several types of manipulatives will be used throughout. Whenever asked, students will need to take pictures or video their own work with hands-on activities and manipulatives. This course will be taught as an online course using posted lecture videos with activities mixed throughout. In particular, students will be expected to work on projects and activities that deal with statistical software (Excel) and real world applications of the material learned.

Attendance: Due to the delivery method for this course, there is no attendance grade as such. Instead, students will be required to perform certain tasks, such as watch videos, to show their activity level in the course. These “daily tasks” will be reflected in your Daily Work grade.

Daily Work: Homework will be assigned most “class periods”. **It is extremely important for you to work all homework in order to be prepared for the exams.** We will also be working on certain supplemental assignments which will often have to be completed individually, after I have begun the activity with you in the course. The total number of assignments that are completed and turned in (punctually) by the student will be reflected in the Daily Work grade. A grade will be taken on select problems from each homework assignment. **In general, late work will not be accepted.** A missed homework assignment

or two, due to legitimate “absence”, will not adversely affect your grade as long as you have kept up with all other assignments. **Quizzes:** Both individual and group quizzes may be given occasionally. **In general, NO make-up quizzes will be given.** This class covers enough material that there is no time to be missed/away from the online course that is a “good time”, and each quiz will be over material to be emphasized on exams. Quizzes will be averaged into your Daily Work grade.

Any assignments that are not completed directly and/or uploaded into D2L should be emailed to Pamela.Webster@tamuc.edu with the subject line “Math 372 _____”, where the _____ indicates the title of the assignment. An example would be “Math 372 Locker Problem”.

In addition, please ensure that your name is written on all homework pages so that, when printed so that I can grade them, your name is still attached to the work.

Special Class Activities/Projects/Reflections: Special projects will be assigned for students to work on outside of the D2L online class. These projects will vary in their scope and should be completed neatly and punctually. In addition, you will be expected to keep a record of your reflections on the class and its material, as well as your reactions and future uses for the material. Each time you need to do a reflection, a prompt will be given to the class in that week’s module. You will need to keep up with your completed reflections in an email to me with the subject line “Math 372 Reflection # __ Due ____”. The reflections must be turned in when requested or they will not be graded. In general, late projects and reflections will not be accepted without a documented university excuse. Further information about the projects and reflections will be communicated to you during the semester. Regular attendance on the D2L online class site will assist students with being able to participate in these activities and projects.

Tests: Tests will be given after a complete chapter or subject area. These exams will be announced at least a week in advance. **NOTE: TWO OF THESE EXAMS ARE FACE TO FACE, AS NOTED IN THE ONLINE CLASS SCHEDULE! (ONE IS A DEMONSTRATION TEST THAT REQUIRES THE STUDENT TO VIDEO THEMSELVES USING MANIPULATIVES AND SUBMIT THE VIDEO.)** Although you are not required to come to the Commerce campus to take your exams, you ARE required to confirm the testing center where you will be testing. All testing centers **MUST be verified** and approved by the instructor **IN ADVANCE**, or the exams will not be shared with that testing center. The Academic Testing Center on the Commerce campus is located in Ferguson (Social Sciences) 308, and requires students to bring a **PICTURE ID** with them in order to receive an exam. Please note that while you are welcome to make testing arrangements with outside, approved, testing sites, those sites often require students to make appointments in advance and will often charge a testing fee to people who are not directly affiliated with their facility.

When testing, **CELL PHONES and other electronic devices must be turned off and stored out of the student's reach.** The only electronic device allowed during tests and quizzes is an approved stand-alone calculator, and only with the instructor's consent. Note: Calculators that solve problems for students, including but not limited to the TI-NSpire, TI-89, m Casio Prizm, Casio Touch, or higher, are **NOT** allowed to be used for exams.

There will be TWO "chapter" exams which may consist of a variety of problems and short answer questions, plus ONE "demonstration" exam which will require the student to record themselves working particular problems using manipulatives and to submit that video. However, students should expect the bulk of the questions on each test to be problem solving. Partial credit may be given on exams IF all work is neatly shown so that I can easily determine the student's mistakes. When pictures are drawn, students should be careful that figures are clearly marked and easily understood. Explanations should be explicit and understandable to the audience given. Items should NOT need interpretation if full credit is to be given.

Tentative test dates (although not in stone) are: week of September 24th and October 22nd; and the week of November 19th. NOTE: EXAM 3 is to be completed by the beginning of Thanksgiving week. THE UNIVERSITY IS OPEN THROUGH THAT TUESDAY! PLAN to be AVAILABLE to turn in this exam ON TIME!!

Replacing a Low Test Grade: I realize that at times throughout the semester, emergency situations may arise that affect a student's performance on an exam or even prevent a student from attempting a test. However, in general, **make-up exams will NOT be given unless confirmed ahead of time and accompanied by a documented, University excused absence.** Therefore, I am willing to replace the student's ONE lowest exam grade with the student's grade on the corresponding portion of the final exam, provided the grade on that section of the final exam is higher. This provision will only be applied to ONE exam, so students should make every effort to attempt and be well-prepared for all exams.

Final: Our final is a comprehensive exam. The final exam will need to be completed ON OR BEFORE **Wednesday, December 12th**, in order to allow testing centers time to return the exams to me for grading. I will also setup a time in Commerce when I will be available to personally administer the exam face to face, most likely in the late afternoon or evening of December 12th. **NOTE: THIS FINAL EXAM IS FACE TO FACE, AS NOTED IN THE ONLINE CLASS SCHEDULE! Do not expect a makeup exam for the final, outside of times we discuss in class.**

Grading Policy:

<u>Section:</u>	<u>Total:</u>
Daily Work (Homework, Quizzes, etc.)	15%
Projects/Reflections	20%
Tests (a total of 3 exams)	40%
Comprehensive Final	25%

Grading Scale: Grades will be assigned using the standard scale:

A = 90-100+, B = 80-89, C = 70-79, D = 60-69, F = 59 or below

<h2 style="text-align: center;">TECHNOLOGY REQUIREMENTS</h2>

Calculator: A TI-83 or TI-84 calculator (or equivalent) is RECOMMENDED for this course.

Internet access is REQUIRED. Projects, etc., will be given online. In-depth information about accessing the course through MyLeo using D2L is given below.

Email access is REQUIRED. Please utilize your A&M-Commerce email address, or make me aware of your alternate email address. As mentioned above, any assignments that are not to be loaded through D2L should be emailed to me directly using a subject line that begins with "Math 372 ____". In addition, please ensure that your name is written on all homework pages so that, when printed so that I can grade them, your name is still attached to the work.

Word processing and Spreadsheet software is REQUIRED. (Microsoft Word and Excel preferred/compatibility required)

Video camera/camera access required. Students will be expected to upload pictures and/or videos of themselves using certain manipulatives and strategies throughout the semester. NOTE: One of the exams is a required video submission.

A scanner or scan app MUST be used for uploading homework; **NOT** the camera on your phone or tablet. Homework and other documents should be loaded as .pdf files, NOT as .jpg files. This allows for an easy upload and download and clean documents (no black outlines/edges, etc.) I have personal experience with the free app Cam Scanner, but there are several apps available. As long as it will load to MyLeo as a .pdf and there aren't a lot of dark edges or shadows, you should be okay.

Technology Requirements:

Due to the use of D2L in MyLeo for homework and content delivery, all students will need to be able to access the Internet, whether through their own computer or access to a computer lab on campus. In addition, email access is required. Please utilize your A&M-Commerce email address, or make me aware of your alternate email address. In addition, a calculator is highly recommended. (See above.) Other electronic devices such as Cell Phones, Bluetooth headsets, iPods, iPads, Laptops, e-Cigarettes, and other devices as determined by the instructor and/or department, are NOT allowed to be used in this course.

Official Requirements for accessing MyLeo Online are given as follows:

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or point release of that major version) and the previous major version of iOS (the latest minor or point release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.
 - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.
- Running the browser check will ensure your internet browser is supported.
 - Pop-ups are allowed.
 - JavaScript is enabled.
 - Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader](https://get.adobe.com/reader/) <https://get.adobe.com/reader/>
 - [Adobe Flash Player](https://get.adobe.com/flashplayer/) (version 17 or later) <https://get.adobe.com/flashplayer/>
 - [Adobe Shockwave Player](https://get.adobe.com/shockwave/) <https://get.adobe.com/shockwave/>
 - [Apple Quick Time](http://www.apple.com/quicktime/download/) <http://www.apple.com/quicktime/download/>
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

[ACCESS AND NAVIGATION](#)

- You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.
- **Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

[COMMUNICATION AND SUPPORT](#)

Brightspace Support

Need Help?

Student Support:

- If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

- If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words “[click here](#)” to submit an issue via email.



System Maintenance

- D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

myLeo Support

- Your myLeo email address is required to send and receive all student correspondence. Please email helpdesk@tamuc.edu or call us at 903-468-6000 with any questions about setting up your myLeo email account. You may also access information at myLeo. <https://leo.tamuc.edu>

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement:

Students will be expected to interact with the instructor(s) in class or via electronic means in an appropriate manner. All instructor contact information is listed on this syllabus and should be used. Please use email to facilitate a quick response.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures:

Getting Help Outside of Office Hours: The Math Skills Center, located in Binnion 328, is open Monday and Wednesday, 8am – 8pm; Tuesday and Thursday, 8am – 6pm; Friday, 8am – noon. For information on which tutors would be best to help, and when they are working, feel free to see me or the bulletin board outside the lab. Mach III/TRIO Services, located in the Halladay Student Services building, Room 300, is available to students who meet certain criteria, such as being a first-generation college student, etc. Contact TRIO at 903-886-5833. The Academic Success Center offers tutoring in the library, as well as Supplemental Instruction. Their hours can be found on the university web site.

Comments: I will do my best to make a quality presentation each “class” and, in return, I expect that you will do your best to learn the material presented in “class” and in the text. This course will be taught as hands-on as possible, and student participation is necessary daily. It is important that you be actively engaged in any group activities. Questions are welcome in the “classroom”, and I will gladly schedule outside help sessions/Skype/personalized video explanations if necessary. I know that together, these efforts can contribute significantly to your education in this class

As stated in the Student Handbook, academic dishonesty in the class will not be tolerated. If any materials or equipment are found to be available to the student at any time which is considered inappropriate by the instructor, the very fact that the materials are inappropriately available to the student is grounds for an accusation of academic dishonesty. The instructor reserves the right to fail the student for the assignment or the course, as well as report the student to the Academic Dean and/or the Dean of Students, and the Committee for Academic Retention in Teacher Education. The above committee and deans have the ability to terminate a student's participation in the teacher education program. They also have the ability to terminate the student's enrollment in the University. The instructor considers this an extremely serious matter. Please make sure you are not in a situation that could be viewed negatively.

I find that a majority of students are honest in doing their school work. However, we must take measures to protect the academic integrity of the classroom. **I have a NO TOLERANCE policy for cheating and if you are caught cheating, you will probably fail that portion of the course, as well as possibly the entire course.** Cheating in this course is defined as (but not limited to) the following:

- Giving or receiving answers during an exam or quiz.
- Viewing the exam or quiz answers of nearby classmates.
- Having notes/practice work/etc. available during quizzes or tests.
- Possession or access to test items before the test is given.
- Deception in getting an excused absence to obtain the undeserved opportunity to make-up work.
- Use of cell phones or text messaging technology/other devices during exams or quizzes. **You may not use the calculator on your cell phones.**
- Improper citations in written works, or using another person's ideas and words as your own without giving proper credit.
- **Any** method, no matter how well rationalized or accepted, which gives an unfair advantage and/or improves a person's grade by any means other than study and skillful performances on exams and/or other assignments.

Students found guilty of an act of academic dishonesty in this course will be subject to receiving an "F" in this course, as well as the below-mentioned disciplinary actions, as deemed appropriate.

Specific additional disciplinary action for these offenses may include any combination of the following:

Point deduction of an assignment
 Failure of an assignment
 A grade of zero for an assignment
 Failure of this course
 Referral to the Academic Integrity Committee or department head for further action

Referral to the Dean of the College of Science and Engineering, and other Deans as appropriate

Referral to the University Discipline Committee

Supplemental Instructions: Throughout the course of your work in this class, you will be given additional written instructions that govern the look, content and scope of your projects. These supplemental instructions have the same force as the syllabus for grading purposes.

University Specific Procedures:

Student Conduct:

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*). All students are expected to exercise self-discipline and respect for the rights of others at all times. Behavioral disruptions that interfere with the business of the “classroom” or with an individual’s ability to learn may be referred to the Dean of Students. Courtesy to others is important. That means respecting the opinions of others, and in general, doing your part to make this a positive learning environment for all students.

ADA Statement

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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu

[Student Disability Resources & Services](#)

Anti-Discrimination

A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Mission for College of Science and Engineering: Innovation and Discovery
Mission for the Department of Mathematics: Discovering the Keys to Success

Concealed Carry Statement:

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to:

(<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE/CALENDAR

Topics Covered (tentative schedule):

- Week #1 (**Aug. 27 – Aug. 31**)- Syllabus, Intro to the course, Algebraic vs. Arithmetic thinking, Locker Problem
- Week #2 (**Sept. 3 – Sept. 7**)- LABOR DAY & Continue Algebraic thinking, Recognizing patterns
- Week #3 (**Sept. 10 – Sept. 14**)- Sequences (Geometric and Arithmetic)
- Week #4 (**Sept. 17 – Sept. 21**)- Series and Infinite Sequences and Series
- Week #5 (**Sept. 24 – Sept. 28**)- Review for Exam 1 and **Exam 1**
- Week #6 (**Oct. 1 – Oct. 5**)- Graphing and representing functions
- Week #7 (**Oct. 8 – Oct. 12**)- Balance Logic (Bug Collections)
- Week #8 (**Oct. 15 – Oct. 19**)- Integer Arithmetic and Polynomial Operations
- Week #9 (**Oct. 22 – Oct. 26**)- Review for Exam 2 and **Exam 2**
- Week #10 (**Oct. 29 – Nov. 2**)- Algebra Tiles & Factoring using Algeblocks
- Week #11 (**Nov. 5 – Nov. 9**)- Solving Equations using Algeblocks
- Week #12 (**Nov. 12 – Nov. 16**)- Wrap up & Exam 3 (Demonstrating the use of Algeblocks/Algebra Tiles) ****NOTE: THIS EXAM IS DUE BEFORE THE THANKSGIVING HOLIDAY BEGINS****
- Week #13 (**Nov. 19 – Nov. 23**)- Group Operations & Exam 3 Submitted & THANKSGIVING
- Week #14 (**Nov. 26 – Nov. 30**)- Modular Arithmetic
- Week #15 (**Dec. 3 – Dec. 7**)- REVIEW WEEK
- Week #16 (**Dec. 10 – Dec. 14**)- Final Exam **(ON OR BEFORE Wednesday, December 12th)** – NOTE: SPECIAL DATES AND TIMES!!)

Remaining enrolled in this course constitutes acceptance of all policies contained in this syllabus.

Any changes to this syllabus will be communicated directly to you in class by the instructor.

You are responsible for being aware of any such changes.

Good luck and work hard!!