MATH 361-01S/41R/71R
Mathematical Modeling of Science for Middle School I
COURSE SYLLABUS: Fall 2020
TR 11:00a-12:15 BA244 / MPLX216 / Navarro BC322 / Web-Enhanced

INSTRUCTOR INFORMATION

Instructor: Dr. R. Cavender Campbell   Office Location: Binnion 303B

Physical Office Hours: MW 9:15-11:15am & T 3:30-4:30pm, others by appointment

Virtual Office Hours: W 1:00-2:00pm via YouSeeU-Virtual Classroom in D2L

Office Phone: 903-468-8660

University Email Address: robert.campbell@tamuc.edu

Preferred Form of Communication**: Email**

Communication Response Time: Same or Next Business Day

COURSE INFORMATION

Textbook

Stewart, J., Redlin, L., & Watson, S. (2009). Precalculus: Mathematics for Calculus. Belmont, CA: Brooks/Cole Cengage Learning.

Course Description

MATH 361 – Mathematical Modeling of Science for Middle School I – Hours: 3
Mathematics will serve as the basis of the course and the following topics will be covered: Mathematical modeling, transformation of functions, data analysis skills, linear models, exponential growth and decay, logarithmic functions, logistic models, power and polynomial models, inverse and direct variation, periodic models and trigonometric functions.
Prerequisites: "C" or better in MATH 1351 or 351.

Course Format

This course will use a hybrid-flex course model. Class will be held at the assigned class time. The primary classroom has a limited capacity of 17 due to current public health measures. Students will be asked to indicate if they want to attend in person or virtually before the beginning of the semester. If more than 17 students will attend in person, a rotation will be established to ensure in person access for as many students as possible on as many class days as possible. Classes will be available live through the YouSeeU-Virtual Classroom in D2L. Any students unable to attend in person or not wanting to attend in person should attend class meetings in this way. Information about completing assessments, including quizzes and tests is discussed later in this syllabus.

The syllabus/schedule are subject to change.

Student Learning Outcomes

1. Students will demonstrate proficiency in the use of mathematics to structure their understanding of and investigate questions in the world around them.
2. Students will demonstrate proficiency in treating mathematical content at an appropriate level.
3. Students will demonstrate competence in the use of numerical, graphical, and algebraic representations.
4. Students will demonstrate the ability to interpret data, analyze graphical information, and communicate solutions in written and oral form.
5. Students will demonstrate proficiency in the use of mathematics to formulate and solve problems.
6. Students will demonstrate proficiency in using technology such as handheld calculators and computers to support their use of mathematics.

Student Assessment Outcomes

1. Critical Thinking: The above learning objectives will be assessed for critical thinking in labs and other classroom activities.
2. Written, Oral, & Visual Communication: Students will be assessed on written, oral, and visual communication skills on their quizzes, exams, labs, and lab jigsaw activities.
3. Empirical and quantitative reasoning: All assessments in this course will contain a quantitative reasoning and empirical computation component.

Course Learning Outcomes

1. Demonstrate an understanding of the connections between the geometric, graphic, numeric, and symbolic representations of various functions.
2. Recognize, analyze, describe, and represent data in various functions.
3. Understand the effects of transformations on graphs of functions.
4. Understand rates of change and how they apply to different physical scenarios and data.
5. Judiciously use appropriate technology to achieve these outcomes.

COURSE REQUIREMENTS

Students should complete assignments by the due dates and clearly communicate any mathematical ideas necessary to demonstrate understanding of the topics.

Instruction will include lectures and demonstrations along with group assignments and discovery style activities. Students should attend all class meetings (in-person or virtually) and communicate with the instructor should difficulty with the material arise.

Attendance at all scheduled classes is expected and will be tracked by the instructor. The student is responsible for ensuring they are counted present for the day by arriving punctually to the start of class. Students may attend in person or virtually through the YouSeeU-Virtual Classroom.

A graphing calculator (e.g.,TI-84) or a computer algebra system (e.g. Mathematica) is useful but not required for this course.

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GRADING

Final grades in this course will be based on a total points system:

A: 800 – 710   **B: 709 – 620**   **C: 619 – 530**   **D: 529 – 440**   **F: 439 – 0**

The instructor reserves the right to reward students for continuous hard work.

The grade will be composed of:
Teaching Videos (2) – 50 points each = 100 points
TEKS Write-Ups (2) – 20 points each = 40 points
Homework and Formative Assessments – 140 points
Quizzes (6) – 20 points each = 120 points
Tests (2) – 100 points each = 200 points
Final Exam – 200 points

Assessments

Teaching Videos: You will be assigned two topics within the course to record a video presentation of your teaching. The content of the presentation should promote depth in your understanding of the topics. Grading rubrics, examples, and instructions will be distributed. Your will record two videos worth up to 50 points each.

TEKS Write-ups: With each unit test you will identify related skills in the grades 4-8 mathematics TEKS for the content being tested. An explanation of the connections and a write-up of notable applications will be required. Each of the two write-ups will be worth 20 points.

Homework: Homework assignments will be for practice and an opportunity to demonstrate understanding of the material. I encourage you to discuss homework assignments with your classmates, but all work that you turn in must be your own. Any work violating the university's guidelines for academic honesty (e.g. plagiarism, cheating, copying, etc.) will receive a grade of zero. Assignments will be submitted through D2L.

Formative Assessments: There will be additional assignments given during the semester. Group assignments may be completed with group collaboration. The assignments will provide greater depth for certain concepts and techniques in Algebra. Individual assignments may also be included to help the instructor determine the direction of further instruction.

Homework and Formative assessments will count up to 140 points in the final grade.

Quizzes: There will be six quizzes worth 15 points each. Quizzes and tests will have similar problem types, but the shorter format will allow the professor to see the students' progress on individual concepts. Quizzes will be open notes and occur during class time. Students attending online will see quizzes through YouSeeU and work will be submitted via D2L.

Tests: You will take two tests each worth 100 points each. Each test combines material from several sections in the textbook. The exams will have objective, short answer, and free response style questions. Tests will take place during class time, students attending online will join a Zoom meeting with audio and video. The Zoom meeting invitation will be sent out by email and posted to D2L the week of a test.

Final Exam: You will take a <u>comprehensive</u> final exam worth 200 points. The format will be substantially the same as the unit exams. The final exam will be conducted in the same manner as the two tests.

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TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:
https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:
https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements

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

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

Please use email or visit the instructor during office hours. The instructor will make every effort to respond by the next business day at the latest. You can also visit with the instructor before or after class, but meetings during this time may be cut short to help all students.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here: https://community.brightspace.com/support/s/contactsupport

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COURSE POLICIES

Missed tests will not be made up, but documented absences will be accommodated through other means agreed upon with the instructor. Tests may be taken early if an approved absence is anticipated and a time arranged with the instructor. Tests and the Final Exam will be conducted both in the classroom and in a Zoom meeting. Students joining online must join with audio and video and the exam will distributed at class time. Students will remain in the Zoom meeting until they have completed their exam and turned it in via D2L.

A missed quiz can be made up during the professor's office hours until the next quiz or test. Should a documented need arise due to multiple absences it will be considered on a case-by-case basis.

Personal electronic devices and laptops will not be allowed during exams or quizzes. Causing a distraction or creating a barrier to learning for other students will be grounds for banning of device use, but typically devices will be allowed during classes. While assistance with your device is not allowed, certainly device use is necessary to participate in the course virtually.

Regular class meetings will be conducted in person and via the YouSeeU-Virtual Classroom inside D2L. Quizzes will be distributed both in person and via the Virtual Classroom. Tests and the Final Exam will take place in person and via Zoom. Students must join with audio and video for the exam to be distributed. The invitation to the test Zoom meeting will be sent out and posted to D2L prior to each test and the final exam.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: https://www.britannica.com/topic/netiquette

TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpages.

http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

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Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

Nondiscrimination Notice

Texas A&M University-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.

Campus 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 the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

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.

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Students with Disabilities-- 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- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

Website: Office of Student Disability Resources and Services

http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

COURSE OUTLINE / CALENDAR

8/25	Syllabus & Functions	
9/1	Transformations of Functions	
9/8	Polynomial Functions	September 8 Quiz 1
9/15	Rational Functions	September 17 Quiz 2
9/22	Exponential Functions	
9/29	Logarithmic Functions	September 29 Quiz 3
10/6	Test 1 & Trigonometry	**October 6 Test 1**
10/13	Unit Circle Trigonometry	
10/20	Right Triangle Trigonometry	October 22 Quiz 4
10/27	Polar Coordinates	October 29 Quiz 5
11/3	Parametric Equations	
11/10	Conic Sections	November 10 Quiz 6
11/17	Review & Test 2	**November 19 Test 2**
11/24	Vectors	**November 26 Thanksgiving**
12/1	Remaining Topics & Final Review	
12/8	Final Exam – 10:30am – 12:30pm	**December 8 Final Exam**

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