MTH 138 – Spring 2018
College Algebra

Course Description
Mathematical models; solving equations; creating, interpreting and graphing functions. Particular focus is given to polynomial, exponential and logarithmic functions. Prerequisites: See General Course. For a more detailed course description, Student Learning Outcomes, and Exemplary Educational Objectives, go to http://www2.sfasu.edu/math/docs/syllabi/MTH138Syllabus.pdf

Course Prerequisites
A minimum math score of 250 on THEA, 21 on ACT, 500 on SAT or a C or better in MTH 099. The Department of Mathematics and Statistics strongly recommends a minimum math score of 270 on THEA, 21 on ACT, 500 on SAT or a C or better in MTH 099 before taking any credit-level mathematics course.

Course Time and Meeting Place
- MTH 128 Section 012 meets in Math 214 at 1pm-2:15pm MW

Instructor
- Stacia Prince
  Department of Mathematics and Statistics
- Office: Math 334
- TEL: (936) 468-6262
- Email: princes@sfasu.edu
- Office Hours: Anytime my door is open, by appointment or
  Monday: 2:30 pm - 4 pm
  Wednesday: 2:30 pm - 3:30 pm
  Thursday: 10 am – 11 am and 2:30 pm - 4 pm

Textbook
The required textbook for this course is Modeling, Functions, and Graphs: Algebra for College Students by Katherine Yoshiwara. The textbook is free and available online at https://yoshiwarabooks.org/mfg/

Course Objectives (CO)
1. Critical Thinking [CO 1]: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. Communication Skills [CO 2]: to include effective development, interpretation and expression of ideas through written, oral and visual communication.
3. Empirical and Quantitative Skills [CO 3]: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes (SLO)
At the end of MTH 138, a student who has studied and learned the material should be able to:
1. Employ independence of thought and innovation in order to obtain solutions to typical algebraic problems. [CO 1]
2. Create, manipulate, analyze and solve algebraic equations and expressions, especially linear, quadratic, polynomial, rational, exponential and logarithmic expressions. [CO 1,3]
3. Connect graphical properties with those of associated functions or equations, and use these connections to communicate graphical or physical properties in algebraic language. [CO 2,3]
4. Read, interpret, and communicate written mathematics, both in prose and in its graphical or visual forms. [CO 2]
5. Use functions to model and solve real-world problems. [CO 1,3]
Course Outline

- Making Mathematical Models [CO 1, 2, 3] (Amount of time spent: 5%)
- Linear Equations, Functions and Models [CO 1, 2, 3] 20%
  - Review of Coordinate Geometry
  - Graphs of Equations
  - Lines and Linear Modeling
  - Systems of Equations
- Quadratic Equations, Functions and Models [CO 1, 2, 3] (Amount of time spent: 20%)
  - Graphs of Quadratic Equations
  - Techniques for Solving and Optimizing Quadratic Equations
  - Applications of Quadratic Functions
- Functions [CO 1, 2, 3] (Amount of time spent: 20%)
  - Graphs of Functions
  - Algebra of Functions
  - Inverses of Functions
  - Special Functions
  - Polynomial Functions
  - Division of Polynomials and Factorization
  - [Rational Functions]
- Exponential and Logarithmic Functions and Models [CO 1, 2, 3] (Amount of time spent: 20%)
  - Exponential Functions
  - Logarithmic Functions
  - Logarithmic Identities and Equations
  - Exponential Equations and Applications
  - Modeling with Exponential and Logarithmic Functions
- Solving Equations [CO 1, 2, 3] (Amount of time spent: 10%)
  - Field Properties: Associativity, Commutativity, Identity, Inverses, Distributivity
  - Review Rules for Exponents
  - Incorporating Exponents and Logarithms in the Order of Operations
- Explicit instruction in Critical Thinking, Communication and Empirical and Quantitative Reasoning is in addition to implicit instruction, modeling and practice that occur daily in the discussion of college algebra. This explicit instruction includes explanation of solving mathematical problems by thinking critically, communicating logically ordered solutions with complete and correct notation, and applying empirical or quantitative skills as appropriate to the problem. (Amount of time spent: 5%).

Calculators

You will need a calculator for MTH 138. You may use your calculator on all homework assignments and exams unless calculator use is specifically prohibited. However, you should not rely on computers and calculators to such an extent that they keep you from developing your own skills. Technology should be used as an aid, but without a good understanding of the underlying mathematical concepts, the calculator will quite happily mislead you without your even knowing it. In general, technology is a good thing, but as with everything, sometimes too much of a good thing can lead to problems. **You may NOT use your cellphone or your iPod or a calculator.**

We will also make extensive use of Desmos (https://www.desmos.com). Desmos is free web-based graphing calculator. You will learn more about Desmos in class.

Calculators that include a solver such as the TI-89 or TI-Nspire and calculators that have a QWERTY keyboard will not be allowed on exams.
The Classroom
Any questions you ask in class will likely be ones that other students will want answered as well, so get over any hesitation you might have and ask questions as the material is presented. You will not be penalized for doing this, no matter how trivial or simple you think your questions might seem. Remember, the class is being held for you to learn the material, not just to give you a time to copy notes off of a blackboard, so be sure to get help when you need it and stay involved in your class.

Homework and Quizzes
Homework assignments from the textbook can be found on the calendar page. The vast majority of your homework will be submitted through WeBWorK, the MTH 138 online homework system (https://webwork.sfasu.edu/webwork2/MTH138-Spring18/). Your daily average is based on your grades from WeBWorK homework and any other daily quizzes or homework that are assigned for a grade. You will learn more about getting a WeBWorK account the first day of class.
In addition to weekly WeBWorK assignments, you will also have daily quizzes. These quizzes are very short and can usually be completed in a few minutes, provided you have read the material that you will be covering in the class the day of the quiz. You will need to read ahead of time.
Make-up quizzes and WeBWorK assignments are not permitted. However, we know that life sometimes get in the way. For this reason we will drop your lowest two quizzes and your lowest three WeBWorK assignments.

Grading and Exams
The will be three in-class exams and a final exam. Your course grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Date</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework and Quizzes</td>
<td>WeBWorK assignments and projects. Due dates are on the MTH 138 Calendar.</td>
<td>25%</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>Regular attendance is expected. More than two unexcused absences will result in a lower attendance grade. You are also required to meet with the instructor during the first three weeks of class.</td>
<td>5%</td>
</tr>
<tr>
<td>Exam I</td>
<td>Wednesday, February 7, 2018</td>
<td>20%</td>
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<tr>
<td>Exam II</td>
<td>Wednesday, March 7, 2018</td>
<td>20%</td>
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<tr>
<td>Exam III</td>
<td>Wednesday, April 18, 2018</td>
<td>20%</td>
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| Final Exam              | **Friday, May 11, 2018**
                      | **10:30am-12:30pm, MTH 214**            | 20%        |

Semester numerical scores will be converted into letter grades according to the following method.

<table>
<thead>
<tr>
<th>Range of numerical values</th>
<th>Corresponding Letter</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
</tr>
</tbody>
</table>

When we calculate your final grade at the end of the course, we will calculate a score on a 0-100 point scale using the scores that you have obtained during the course, and the grade breakdown given above. Your course grade will then be obtained using this table.

Resurrection Policy. If you score 70 or better on the final exam than your lowest midterm exam, we will replace your midterm grade with your final exam grade. The resurrection policy does not apply to your homework grade.
Exam Policy
You must bring and display either your SFASU Student ID or a valid driver’s license before you will be permitted to take each test and the final exam.
Exams are scheduled far in advance, and it is impossible to move the time or date. However, in rare cases where it is impossible for an individual to take the exam at the scheduled time, we will work with you to make other arrangements.
Exceptions for taking the exam out of sequence are the following:
1. A medical excuse. Please provide proper documentation according to university rules.
2. A University sponsored event such as an athletic tournament, a play, or a musical performance. Your coach or director must contact us in advance. Athletic practices and rehearsals do not fall into this category.
3. A religious holiday. Please send a short email explaining the situation.
4. Extreme hardship such as a family emergency. Please have the proper university office notify us.
The above are the only allowable excuses for taking the exam before the scheduled time. Under no circumstances do we give late exams. Since we can only accommodate a limited number of students taking the exam at an earlier time, please make sure that you fall into one of the above categories before you contact us. If you miss an exam due to illness or a family emergency, you will not be penalized. The missed exam will be replaced with the final exam grade. If you have a conflict with the final exam (other than another exam at the same time), you must contact the Registrar. Only the Registrar can schedule an out-of-sequence final exam.
Cell phone use is not permitted in or out of the classroom during all exams. If you bring your cell phone to the exam venue, please remember to turn it off. Violation of this policy will be considered as academic dishonesty and dealt with accordingly. You will not be permitted to use your cell phone as a calculator, so plan ahead.

Getting Help with Math 128
- Individual and group help is available at the Academic Assistance and Resource Center, which is located on the first floor of the Steen Library. (https://library.sfasu.edu/aarc/).
- Take advantage of office hours.

Add/Drop Policy
The Add/Drop Policy can be found at http://www.sfasu.edu/policies/add_drop.asp

Attendance Policy
Regular attendance is expected in Math 128. Attendance and Excused Absences Policy can be found at http://www.sfasu.edu/policies/class_attendance_excused_abs.asp

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.
Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Withheld Grades Semester Grades Policy (A-54)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.
**Students with Disabilities**
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Acceptable Student Behavior**
Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.