MTH 138.501 – College Algebra – Online – Spring 2019

Name: Angela Dixon
Department: Mathematics and Statistics
Email: westal1@sfasu.edu
Phone: 936-468-1827
Office: Math 337

Class meeting time and place: Online course (www.mymathlab.com), Jan 22 – May 17
Office Hours: These hours have been set aside specifically to help students.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:45-1:15pm</td>
<td>1-2:15pm</td>
<td>None</td>
<td>1-2:15pm</td>
<td>11:45-12:45</td>
</tr>
</tbody>
</table>

Additional times are available by appointment.

Course description:
Mathematical models; solving equations; creating, interpreting, and graphing functions. Particular focus is given to polynomial, exponential, and logarithmic functions. Prerequisites: two years of high school algebra and one year of high school geometry and TSI complete/exempt status in mathematics.

Text and Materials:
The textbook is College Algebra, 12th edition by Lial, Hornsby, Schneider, Daniels. Chapters 1 thru 5 of the textbook will be covered in this course.

The majority of this course will be completed through My Math Lab at www.mymathlab.com. When you create your account, use the course ID dixon99692

You will need a calculator for this class. A scientific calculator with log capabilities will be sufficient. The calculator function of a cell phone will not be permitted during the midterm or final exam.

Course Requirements:
There will be two online exams, a face-to-face midterm, and a face-to-face final exam.

Online Exam 1 – complete by Friday, February 22
Midterm – Wednesday, March 13, 4-8 pm, Math Building 101
Online Exam 2 – complete by Wednesday, April 17
Final Exam – Wednesday, May 15, 4-8 pm, Math Building 101

The midterm and final exam are both face-to-face exams. They are both 2 hour exams and can be taken anytime between 4 and 8 pm on the above dates. You will need to show a valid student ID or driver’s license with a recognizable picture in order to take the exams. If you have a conflict with the dates and times above, or would like to take the exam at a proctored testing location other than SFA, let me know as soon as possible before the exam so that other arrangements can be made.

Grading Policy:
Your final grade will be determined as follows:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
<th>Grade Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Discussions, Skills Check, and Assessment [CO 1,2,3]</td>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>15%</td>
<td>MyMathLab Homework Assignments [CO 1,2,3]</td>
<td>80% - 90%</td>
<td>B</td>
</tr>
<tr>
<td>15%</td>
<td>MyMathLab Quizzes [CO 1,2,3]</td>
<td>70% - 80%</td>
<td>C</td>
</tr>
<tr>
<td>10%</td>
<td>Online Exam 1 [CO 1,2,3]</td>
<td>60% - 70%</td>
<td>D</td>
</tr>
<tr>
<td>20%</td>
<td>Midterm [CO 1,2,3]</td>
<td>0% - 60%</td>
<td>F</td>
</tr>
<tr>
<td>10%</td>
<td>Online Exam 2 [CO 1,2,3]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td>Final Exam [CO 1,2,3]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>Final Course Grade</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussions, assignments, quizzes, and exams will not be accepted late. Attempt all work well ahead of the due dates so that any mathematical and/or technical problems can be cleared up ahead of time.
**Course Calendar:**
Below is a tentative calendar for the course. It shows the topics covered along with the corresponding sections from the textbook. For each section, you must complete a **MyMathLab Lesson** containing video instruction about the topic. Once you have mastered the lesson, you will then complete a **MyMathLab online homework assignment** for each section of the textbook, along with **MyMathLab online quizzes** covering two or three sections each. You are also expected to **complete an assessment assignment, a skills check/review, and five discussions** throughout the semester. See the Frequently Asked Questions document for more information.

See the Schedule of Due Dates for specific due dates.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/Exam</th>
<th>Sections in Textbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and Skills Review</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Linear Equations and Modeling</td>
<td>1.1, 1.2</td>
</tr>
<tr>
<td>3</td>
<td>Quadratic Equations and the Quadratic Formula</td>
<td>1.4, 1.5</td>
</tr>
<tr>
<td>4</td>
<td>Equations Involving Radicals, Fractions and Absolute Values Functions</td>
<td>1.6/1.8, 2.3</td>
</tr>
<tr>
<td>5</td>
<td>Online Exam 1 (MyMathLab)</td>
<td>1.1 - 2.3</td>
</tr>
<tr>
<td>6</td>
<td>Graphs of Functions</td>
<td>2.4, 2.5/3.6, 2.6</td>
</tr>
<tr>
<td>7</td>
<td>Transformations and Algebra of Functions</td>
<td>2.7, 2.8</td>
</tr>
<tr>
<td>8</td>
<td>Midterm (Math Building 101)</td>
<td>1.1 - 3.1</td>
</tr>
<tr>
<td>9</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Quadratic Models and Polynomials of Higher Degree Rational Functions</td>
<td>3.1, 3.4, 3.5</td>
</tr>
<tr>
<td>11</td>
<td>Inverse Functions Exponential Functions</td>
<td>4.1, 4.2</td>
</tr>
<tr>
<td>12</td>
<td>Logarithm Functions</td>
<td>4.3, 4.4</td>
</tr>
<tr>
<td>13</td>
<td>Online Exam 2 (MyMathLab)</td>
<td>3.1 – 4.4</td>
</tr>
<tr>
<td>14</td>
<td>Solving Exponential and Logarithm Equations</td>
<td>4.5, 4.6</td>
</tr>
<tr>
<td>15</td>
<td>Solving Systems of Equations</td>
<td>5.1</td>
</tr>
<tr>
<td>16</td>
<td>Review for Final Exam</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Final Exam (Math Building 101)</td>
<td>1.1 – 5.1</td>
</tr>
</tbody>
</table>
Additional Help:
Free tutoring is available from the AARC. They offer Learning Teams, one-on-one tutoring, and the Math Walk-in Table. The hours for the Walk-in Table will be 1pm to 8pm Monday, Tuesday, Wednesday, and Thursday as well as 4pm to 8pm on Sundays. Sign-ups for Learning Teams begin soon (check AARC website for more information). If you need help signing up, the AARC staff (first floor of library, right-hand side) will be happy to assist. You can find more information on the AARC website, www.sfasu.edu/aarc.

General Education Core Curriculum (Assessment):
At one point during the semester, you will receive an assignment that fulfills both the requirements of this course and the needs of Stephen F. Austin State University's Core Curriculum Assessment Plan with the Texas Higher Education Coordinating Board. When you complete this one assignment, you need to upload the assignment to both your standard course dropbox determined by your Instructor and the “Core Curriculum” dropbox. The Core Curriculum dropbox will be identified by the Objective for which work is being collected. (Examples: Critical Thinking, Teamwork, Social Responsibility Empirical & Quantitative Skills, Personal Responsibility, Communication Skills-Written, Communication Skills-Written & Visual, and Communication Skills- Oral & Visual.) Please note that this only applies to the approved assignment. All other assignments should be submitted according to regular class operations.

When you complete the assignment mentioned above, you will upload the assignment to both the MTH 138 dropbox and the Empirical and Qualitative Skills dropbox.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Date Due in D2L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empirical and Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>MTH 138 Exponential/Log Models: Radioactivity</td>
<td>Monday May 6, 2019</td>
</tr>
</tbody>
</table>

The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;
2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

See [http://www2.sfasu.edu/math/docs/syllabi/MTH138Syllabus.pdf](http://www2.sfasu.edu/math/docs/syllabi/MTH138Syllabus.pdf) for elements common to all sections.
Course description: Topics include mathematical models; solving equations; creating, interpreting and graphing functions. Particular focus is given to polynomial, exponential and logarithmic functions.

Core 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

Credit hours: 3

The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

Course Prerequisites and Corequisites: See general course prerequisites.

General Education Core Curriculum: This course has been selected to be part of SFA’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives. Assessment of these objectives at SFA will be based on student work from all core curriculum courses. This student work will be collected in D2L, the assessment management system selected by SFA to collect student work for core assessment.

The chart below indicates the core objectives identified by SFA to be assessed in this course. The instructor of each section of the course will provide the assignment(s) that will be used to assess the objectives as well as the date(s) by which the assignments must be completed and uploaded in D2L.
Course outline:

- Making Mathematical Models [CO 1, 2, 3]  5%
- Linear Equations, Functions and Models [CO 1, 2, 3]
  - Review of Coordinate Geometry  20%
  - Graphs of Equations
  - Lines and Linear Modeling
  - Systems of Equations
- Quadratic Equations, Functions and Models [CO 1, 2, 3]  20%
  - Graphs of Quadratic Equations
  - Techniques for Solving and Optimizing Quadratic Equations
  - Applications of Quadratic Functions
- Functions [CO 1, 2, 3]  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]  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]  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.  5%

Academic Integrity
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.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.

Definition of Academic Dishonesty (SFA policy 4.1):
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:

- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help other student(s) in an act of cheating or plagiarism.
Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:

- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one's paper or presentation without giving the author credit.

Withheld Grades Semester Grades (SFA Policy 5.5)
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. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

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.

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 10.4). 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.

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]

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

Date of document: 01/11/2019

sfasu.edu/math