Course Description:
The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

Course Format:
This course follows a face-to-face format in which class lecture will be face-to-face on Tuesdays and Thursdays. Students should be punctual, prepared, and attentive; they should take notes and participate in class.

Text and Materials:
The textbook is *Finite Mathematics with Applications in the Management, Natural, and Social Sciences*, 12th Edition, by Lial, Hungerford, Holcomb, and Mullins. Chapters 1 through 9 will be covered in this course.

Homework will be completed using an online system known as MyMathLab at www.mymathlab.com. When you create your account, use the correct course ID:

Section 005 (MWF 12:00pm-12:50pm): segura39888

Fill-in-the-blank notes will be posted on d2l for each section that we cover. You are responsible for printing them and bringing them to class.

You will need a calculator for this class. A scientific calculator with log capabilities will be sufficient. A graphing calculator may be used but is not required. The TI-30XS Multiview is a good calculator that is fairly cheap.

Attendance Policy:
Attendance is expected and recorded for all students. Missing classes will significantly reduce the instruction you receive, and will therefore naturally decrease your semester grade.

You must make a commitment to attend every class, to arrive on time and to stay the entire time. Bring all the necessary materials to each class, be attentive to the task at hand, take notes, and be prepared to participate in class discussions. You must make an additional commitment to doing work outside of class - one to two hours every day. Most importantly, ask for help when you need it.
Additional Help:

Free tutoring is available from the AARC. They offer Learning Teams, one-on-one tutoring, and the Math Walk-in Table. For more information, visit the AARC website at www.sfasu.edu/aarc.

Walk-In Tables at the AARC
A great place to prepare and study for your classes! Each walk-in table has designated hours in which it is open, during which time you can stay for as long as you need. Tutors for the walk-in tables can answer questions, direct you in problem solving, review concepts, or just be available if you have a question while studying. **This service requires no appointment and can be used as often as you like.**

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

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% - 100%</td>
<td>MyMathLab Homework Average</td>
<td>A</td>
</tr>
<tr>
<td>80% - 90%</td>
<td>Tests (3 @ 20% each)</td>
<td>B</td>
</tr>
<tr>
<td>70% - 80%</td>
<td>Comprehensive Final Exam</td>
<td>C</td>
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<tr>
<td>60% - 70%</td>
<td></td>
<td>D</td>
</tr>
<tr>
<td>0% - 60%</td>
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<td>F</td>
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</table>

There will be three exams and a final exam. Each exam will be given in person during class time on the dates listed below. The final exam is comprehensive and mandatory. Your final exam grade can be used to replace one low or missing exam grade. **Therefore, there will be no make-up exams.**

Exam 1 – Friday, Sep 22nd
Exam 2 – Friday, Oct 20th
Exam 3 – Friday, Nov 17th
Final Exam - Section 005 (MWF 12:00pm-12:50pm) : Monday, December 11th 1:00pm-3:00pm

Please note that the dates for our in-class exams are subject to change, but the final is university scheduled and cannot be taken at a different time without the permission of the Dean of the College of Sciences and Mathematics.

**MyMathLab homework assignments will not be accepted late.** Attempt all MyMathLab assignments well in advance of the due date so that any mathematical and/or technical problems can be cleared up ahead of time.

Grades can be accessed through Desire2Learn (D2L). You should check your posted grades often and communicate with any questions. You must check your grades prior to final exam week. Unless you email prior to finals week, you indicate that you agree with the grades posted. **Do not contact the instructor during final exam week to make up an assignment or to be allowed extra credit.**

Academic Integrity:

If your professor suspects academic dishonesty has taken place, the professor holds the right to ask the student to complete the assignment orally at the time of the professor’s choosing to confirm the student’s work is truly their work. 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.

See [https://math.sfasu.edu/docs/syllabi/MATH1324Syllabus.pdf](https://math.sfasu.edu/docs/syllabi/MATH1324Syllabus.pdf) for elements common to all sections.
<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Syllabus/MyMathLab Set Up</td>
<td>1R</td>
<td>1.1 Linear Functions</td>
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<tr>
<td>8/28 – 9/1</td>
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<tr>
<td>Week 2</td>
<td>1.2 Linear Applications</td>
<td>1.2 Linear Applications</td>
<td>1.3 Systems of Equations</td>
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<td>9/4 – 9/8</td>
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<tr>
<td>Week 3</td>
<td>1.3 Systems of Equations</td>
<td>2R Quadratic Equations</td>
<td>2.1 Quadratic Functions</td>
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<td>9/11 – 9/15</td>
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<tr>
<td>Week 4</td>
<td>2.1 Quadratic Functions</td>
<td>Review</td>
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<tr>
<td>9/18 – 9/22</td>
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<td>Exam 1 – Friday Sept 22\textsuperscript{nd}</td>
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<td>Week 5</td>
<td>2.2 Polynomial Functions</td>
<td>2.3 Rational Functions</td>
<td>3.1 Exponential Functions</td>
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<td>9/25 – 9/29</td>
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<td>Week 6</td>
<td>3.1 Exponential Functions</td>
<td>3.2 Logarithmic Functions</td>
<td>3.2 Logarithmic Functions</td>
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<td>10/2 – 10/6</td>
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<tr>
<td>Week 7</td>
<td>3.3 Solving Exp and Log Functions</td>
<td>3.3 Solving Exp and Log Functions</td>
<td>3.4 Exp and Log Applications</td>
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<td>10/9 – 10/13</td>
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<tr>
<td>Week 8</td>
<td>3.4 Exp and Log Applications</td>
<td>Review</td>
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<tr>
<td>10/16 – 10/20</td>
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<td>Exam 2 – Friday, Oct 20\textsuperscript{th}</td>
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<tr>
<td>Week 9</td>
<td>4.1 Interest</td>
<td>4.1 Interest</td>
<td>4.2 Annuities</td>
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<td>10/23 – 10/27</td>
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<tr>
<td>Week 10</td>
<td>4.2 Annuities</td>
<td>5.1 Matrices</td>
<td>5.1 Matrices</td>
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<td>10/30 – 11/3</td>
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<tr>
<td>Week 11</td>
<td>5.2 Simplex Method</td>
<td>5.2 Simplex Method</td>
<td>5.2 Simplex Method</td>
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<td>11/6 – 11/10</td>
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<tr>
<td>Week 12</td>
<td>5.2 Simplex Method</td>
<td>Review</td>
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<tr>
<td>11/13 – 11/17</td>
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<td>Exam 3 – Friday, Nov 17\textsuperscript{th}</td>
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<tr>
<td>Thanksgiving Break</td>
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<tr>
<td>Week 13</td>
<td>6.1 Basic Probability</td>
<td>6.2 Expected Value and Probability Distributions</td>
<td>6.3 Probability Analysis with Matrices</td>
</tr>
<tr>
<td>11/27 – 12/1</td>
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<tr>
<td>Week 14</td>
<td>Review</td>
<td>Review</td>
<td></td>
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<tr>
<td>12/4 – 12/8</td>
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</tr>
<tr>
<td>FINALS WEEK</td>
<td>Section 005 (MWF 12:00-12:50)</td>
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<tr>
<td>12/11 – 12/15</td>
<td></td>
<td></td>
<td>Monday, December 11\textsuperscript{th} 1:00pm to 3:00pm</td>
</tr>
</tbody>
</table>
Course description: Mathematical functions and graphs, linear systems of equations, matrices, linear programming, mathematics of finance; applications.

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
   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.

By enrolling in MATH 1324 Finite Mathematics you are also enrolling in a Core Curriculum Course that fulfills the Mathematics Core Objective requirement.

The chart below indicates: (a) The core objectives that are required to be taught in this course per the Texas Higher Education Coordinating Board (THECB), (b) How the required core objectives will be addressed.
Core Curriculum Objective Table

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>How the Core Objective Will be Addressed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>Probability Analysis with Matrices</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas though written, oral, and visual communication.</td>
<td>Analysis of the Simplex Method in Maximization Applications</td>
</tr>
<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>Exponential and Logarithmic Applications</td>
</tr>
</tbody>
</table>

Course outline:

- Functions [CO: 1,2,3]
  - Linear Functions, including systems of linear equations
  - Quadratic Functions including Maxima and Minima
  - Polynomial Functions
  - Rational Functions
  - Logarithmic Functions and solutions to logarithmic equations
  - Applications (e.g. break-even analysis, supply and demand)
- Mathematics of Finance [CO: 1,2,3]
  - Simple Interest
  - Compound Interest
  - Annuities
    - Ordinary Annuities, Future and Present Value
    - Loans and Amortization
- Matrices and Linear Programming
  - Operations of Matrices
  - Simplex Method
- Probability Analysis
  - Basic Probability
  - Expected Value
  - Probability Analysis with Matrices

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 functions, matrices, linear programming and the mathematics of finance. 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.

Approximate time spent
- 35%
- 15%
- 25%
- 20%
- 5%
Math 143 – Finite Mathematics
Syllabus Continuation

Student Learning Outcomes (SLO): At the end of MTH 1324, a student who has studied and learned the material should be able to:

1. Use linear functions and quadratic functions in business applications. [CO: 1,2,3]
2. Use matrices to solve systems of linear equations. [CO: 1, 3]
3. Use matrices to solve linear programming problems. [CO: 1, 3]
4. Use exponential functions and logarithmic functions and to solve equations using these functions. [CO: 1, 2, 3]
5. Solve simple interest and compound interest problems including annuities. [CO: 2, 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.

Academic Integrity
The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

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. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

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.

Student Wellness and Well-Being

sfasu.edu/math
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
**The Dean of Students Office** (Rusk Building, 3rd floor lobby)
[www.sfasu.edu/deanofstudents](http://www.sfasu.edu/deanofstudents)
936.468.7249
dos@sfasu.edu

**SFA Human Services Counseling Clinic** Human Services, Room 202
[www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)
936.468.1041

**The Health and Wellness Hub** “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education
[www.sfasu.edu/thehub](http://www.sfasu.edu/thehub)
936.468.4008
thehub@sfasu.edu

**Crisis Resources:**
- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- Crisis Text Line: Text HELLO to 741-741

**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](http://www.sfasu.edu/math)). 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.

*Date of document: 08/23/2023*