Course Description: Mathematics in Society provides an introduction to mathematical thinking emphasizing analysis of information for decision-making. (MATH 1332)

Instructor: Cheryl Janusa
Office Phone: (936) 468-1742
Email: janusace@sfasu.edu
Office: Bush Math building room 329

Office Hours: These hours have been set aside specifically to serve students.
- Tuesday and Thursday: 10:30 am – 12:20 pm
- Wednesday: 10:30 am – 11:50 am
Additional times are available by appointment; send me an email to request an appointment.

Class Meeting Times: Monday, Wednesday, Friday 8:00 am – 8:50 am and Tuesday, Thursday 8 am – 9:15 am
Location: Bush Math building room 212

Text and Materials:

Options for purchasing etext and use of My Lab Math:
- Online through Pearson: My Lab Math + E-Text has an option of 18 weeks for $79.99.
- Online through Pearson: My Lab Math + E-text option for up to 24 months for $129.99.

What is My Lab Math? My Lab Math is an online homework system through Pearson. All assignments will be completed through My Lab Math.

The My Lab Math course ID for our class is janusa00237

To join My Lab Math, you may search “My Lab Math” or use the following link: https://mlm.pearson.com/enrollment/janusace00237. After you open the link, Sign In if you have an account with Pearson or choose Create an Account.

The following video may be helpful for guiding you to register with Pearson MyLab Math, https://www.youtube.com/watch?v=td2LkwVrH4A

You have the option to use a free two-week access to the E-Text and MyLab Math. This is demonstrated in the video.

If you should have any technical problems, contact the technical support through MyLab Math.

Calculator: You may use any calculator. The recommended scientific calculator is TI-30XS Multiview (retails for under $20). or the TI-36. Calculators on cell phones, computers or tablets are not permitted during an exam.

Additional suggested supplies: 100 - 150 sheet note book or binder with paper, and pencils
Grading Policy: Your final grade will be determined as follows:

<table>
<thead>
<tr>
<th>Weights of Components</th>
<th>Final Average and Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Assignments – MyLab Math (MLM)</td>
<td>90% - 100% A</td>
</tr>
<tr>
<td>60% Exams (3 unit exams worth 20% each)</td>
<td>80% - 89.5% B</td>
</tr>
<tr>
<td>20% Final Exam (Comprehensive and required)</td>
<td>70% - 79.5% C</td>
</tr>
<tr>
<td>100% Final Course Grade</td>
<td>60% - 69.5% D</td>
</tr>
<tr>
<td></td>
<td>&lt; 59.5% F</td>
</tr>
</tbody>
</table>

- **Assignments** include online MyLab Math (MLM) homework, D2L assignments, in-class quizzes and activities.
  - Each section of the course has a homework assignment.
  - The due dates on the attached calendar are tentative. Each assignment is due at 11:59 pm on the due date. The due dates in MML will be updated as needed. Dates may be delayed from the tentative schedule if more time is needed to cover a topic.

- **Testing Policies**
  - **Exams** are scheduled far in advance so mark your calendar. A student will be allowed to take the exam **prior** to the scheduled time for one of the following reasons:
    - A medical excuse or extreme hardship such as a family emergency. The student must provide proper documentation and properly contact the Office of Students Rights and Responsibilities as stated in the SFA attendance policy, https://www.sfasu.edu/docs/policies/6.7.pdf.
    - Student participation in approved university-sponsored events. Faculty members sponsoring activities that require their students to be absent from other classes must submit proper notification to the provost and vice president of academic affairs for all attending students.
  - If you miss an exam for any reason, your final exam grade will replace your missed exam grade. If more than one exam is missed, the final exam grade will replace only one of the missed exams. The final exam grade will replace at most one exam grade.
  - You must bring and display either your SFASU Student ID or a valid driver’s license before being permitted to take each test and the final exam. The ID must display a clear facial picture of the student.
  - You may use your calculator on exams.
  - Students may not share calculators during an exam. Students may not use cell phone calculators, computers, or other non-approved devices during an exam.
  - The **final exam** is comprehensive and mandatory. The final exam is scheduled by the university and cannot be taken at a different time without permission of the Dean of the College of Sciences and Mathematics. The final exam grade will replace the lowest exam grade provided that the final exam grade is greater than the lowest exam grade. If a student misses an exam, there are no make-up exams.

**Attendance Policy:**
- Regular attendance is expected and necessary for your success. Attendance will not be formally factored into your course grade, but missing class generally results in a lower grade.
- Students missing classes for legitimate reasons other than University-sponsored trips may contact the Dean of Students Office in advance of the anticipated absence to request approval of the excused absence.
Additional Help:
- Visit the instructor during office hours or by appointment (see above).
- Free tutoring is available from the Academic Assistance and Resource Center (AARC). For more information, visit the AARC website at https://www.sfasu.edu/aarc.

General Policies and Information
- You earn your grade by communicating your understanding of the material through the homework and tests. Clearly communicating mathematics will be essential in this course.
- Any questions you have will likely be the same questions that other students want answered as well, so do not hesitate to ask questions as the material is presented. The purpose of attending class is for you to learn the material, not just a time for you to copy notes. Participating and being involved in class will help you be successful.
- Students are expected to respect the learning environment of their fellow students. Behavior that disrupts this environment will not be tolerated. Please do not eat during class.
- Bring all necessary materials to each class, be attentive to the task at hand, take notes, and be prepared to participate. You must make an additional commitment of doing work outside of class. Most importantly, ask for help when you need it.
- Resources and announcements for the course will be posted in D2L.
- Cell Phones: Your cell phone should be on silent and out of sight in class. If there is ever an issue that might cause your cell phone to ring or for you to need to be reached, please discuss this with me beforehand. Research shows that human brains cannot multitask complex, abstract information with cell phone usage, so this policy is designed for your benefit.

Cheating: 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.

See https://math.sfasu.edu/docs/syllabi/MATH1332Syllabus.pdf for elements common to all sections.
<table>
<thead>
<tr>
<th>Week of . . .</th>
<th>Topic (due date)</th>
</tr>
</thead>
</table>
| Aug 28 – Sep 1 | Course Introduction  
|              | 2.1 Sets (9/1)  
|              | 2.2 Subsets (9/4) |
| Sep 4 – Sep 8 | 2.3 Venn Diagrams (9/6)  
|              | 2.4 Set Equality (9/8)  
|              | 2.5 Application of Sets (9/11) |
| Sep 11 - 15 | 3.1 Statements and Logical Connectives (9/15)  
|              | 3.2 Truth Tables I (9/18) |
| Sep 18 - 22 | 3.3 Truth Tables II (9/20)  
|              | 3.4 Equivalent Statements (9/22)  
|              | 3.5 Symbolic Arguments (9/25) |
| Sep 25 - 29 | 3.6 Euler Diagram (9/27)  
|              | Catch-up and Practice  
|              | Exam 1: Chapters 2 Sets and 3 Logic *(Thursday, Sep-28)* |
| Oct 2 - 6 | 1.3 Problem Solving (10/4)  
|              | 10.1 Percent (10/6)  
|              | 10.2 Personal Loans and Simple Interest (10/9) |
| Oct 9 - 13 | 10.3 Compound Interest (10/11)  
|              | 10.4 Installment Buying (10/16) |
| Oct 16 - 20 | 10.5 Mortgages (10/20)  
|              | 10.6 Annuities and Sinking Funds (10/23) |
| Oct 23 - 27 | Catch-up and Practice  
|              | Exam 2: Chapter 10 Finance *(Tuesday, Oct-24)*  
|              | 11.1 Empirical and Theoretical Probability (10/30)  
|              | 11.3 Expected Value (11/1) |
| Oct 30 – Nov 3 | 11.4 Tree Diagrams (11/3)  
|              | 11.5 OR and AND Probability (11/6)  
|              | 11.6 Conditional Probability (11/8) |
| Nov 6 - 10 | 11.7 Counting Principle/ Permutations (11/10)  
|              | 11.8 Combinations (11/13) |
| Nov 13 - 17 | Catch-up and Practice  
|              | Exam 3: Chapter 11 Probability *(Tuesday Nov-14)*  
|              | 12.1 Sampling and Misuses of Statistics (11/17) |
| Nov 20 - 24 | *Thanksgiving Holiday* |
| Nov 27 – Dec 1 | 12.2 Frequency Distribution and Graphs (12/1)  
|              | 12.3 Measures of Central Tendency (12/4)  
|              | 12.4 Measures of Dispersion (12/6) |
| Dec 4 - 8 | 12.5 The Normal Curve (12/8)  
|              | Catch-up and Practice |
| **Monday, Dec 11** | **FINAL EXAM 8:00 am – 10:00 am**, comprehensive and mandatory |
**Course description:** Provides an introduction to mathematical thinking emphasizing analysis of information for decision-making.

**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.

By enrolling in MATH 1332 Math in Society 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>Set Theory and Logic modules</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>Differentiating, applying, and interpreting results from finance formulas</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>Decision-making using analysis based on Probability and Statistics</td>
</tr>
</tbody>
</table>

Outline of Suggested Topics: The following is a list of suggested topics. These topics can be augmented or diminished, as long as the objectives for the course are practiced. Decisions concerning order of presentation are left to individual instructors.

Course outline:

- Critical Thinking (Chapter 1) [CO: 1,2,3]
  - Inductive and Deductive Reasoning
  - Problem-Solving with Patterns
  - Problem-Solving Strategies
- Logic (Chapter 2) [CO: 1,2,3]
  - Logic, Statements, and Quantifiers
  - Truth Tables, Equivalent Statements and Tautologies
  - The Conditional and Biconditional
  - The Conditional and Related Statements
  - Arguments
- Set Theory (Chapter 3) [CO: 1,2,3]
  - Basic Properties of Sets
  - Complements, Subsets and Venn Diagrams
  - Set Operations
  - Infinite Sets
- Financial Mathematics (Chapter 11) [CO: 1,2,3]
  - Simple Interest
  - Compound Interest
  - Credit Cards and Consumer Loans
  - Stocks, Bonds and Mutual Funds
  - Home Ownership
- Counting and Probability (Chapter 12) [CO: 1,2,3]
  - The Counting Principle

Approximate time spent

<table>
<thead>
<tr>
<th>Course outline</th>
<th>Approximate time spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking (Chapter 1) [CO: 1,2,3]</td>
<td>16%</td>
</tr>
<tr>
<td>Logic (Chapter 2) [CO: 1,2,3]</td>
<td>16%</td>
</tr>
<tr>
<td>Set Theory (Chapter 3) [CO: 1,2,3]</td>
<td>16%</td>
</tr>
<tr>
<td>Financial Mathematics (Chapter 11) [CO: 1,2,3]</td>
<td>16%</td>
</tr>
<tr>
<td>Counting and Probability (Chapter 12) [CO: 1,2,3]</td>
<td>16%</td>
</tr>
</tbody>
</table>
Math 1332 – Math in Society
Syllabus Continuation

- Permutations and Combinations
- Probability and Odds
- Addition and Complement Rules
- Conditional Probability
- Expectations

- Statistics (Chapter 13) [CO: 1,2,3] 16%
  - Measures of Central Tendency
  - Measures of Dispersion
  - Measures of Relative Position
  - Normal Distributions
  - Linear Regression and Correlation

- 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 logic, sets, financial mathematics, counting, probability, and statistics. 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.

4%

Student Learning Outcomes (SLO): At the end of MTH 110, a student who has studied and learned the material should be able to:

1. Demonstrate understanding of elementary logic in order to make persuasive arguments, understand conflicting reports, identify faulty reasoning, detect bias, assess risk, suggest alternatives, and draw solid conclusions. [CO: 1,2,3]
2. Use sets as a tool for organizing information, recognize that relationships between and among sets provide the foundation for many valid arguments. [CO: 1,2,3]
3. Use counting techniques, estimation, proportional reasoning, percents, and unit conversions to more ably interpret numerical quantities that occur in everyday life. [CO: 1,2,3]
4. Demonstrate understanding of basic probability and how it is involved in virtually every decision we make – either explicitly or implicitly. [CO: 1,2,3]
5. Use statistics to critically evaluate and interpret statistical studies and corresponding reports. [CO: 1,2,3]
6. Use functions to model various relationships with enough precision to gain insight into how things work and to make reasonable predictions about the future. [CO: 1,2,3]

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
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
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
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
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). 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