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

Class Meeting Times: Monday, Wednesday and Friday 8:00 am – 8:50 am and Tuesday and Thursday: 8:00 am – 9:15 am
Location: Bush Math building room 208

Instructor: Cheryl Janusa
Email: janusace@sfasu.edu
Office: Bush Math building room 329
Office Phone: (936) 468-1742
Office Hours: These hours have been set aside specifically to serve students.
Tuesday and Thursday: 9:20 am – 11:00 am and 1:50 pm – 2:40 pm
Additional times are available by appointment.

Text and Materials:

Two recommended methods for purchasing:
- Bookstore: MyLab Math + Electronic Text book ISBN 9780135834954 ($92.84)
- Online through Pearson: MyLab Math + E-Text has an option of 18 weeks for $70.

What is MyLab Math? MyLab Math is a online homework system through Pearson. All assignments will be completed through MyLab Math.

The course ID for our class is janusa23085
To join MyLab Math, you may search “MyLab Math” or use the following link:
https://mlm.pearson.com/northamerica/mymathlab/students/get-registered/index.html

The following video may be helpful for guiding you to register with Pearson MyLab Math,
https://www.youtube.com/watch?v=zl83P4NRrsE

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

<table>
<thead>
<tr>
<th>Course Grade</th>
<th>Grade Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>15% Assignments –MyLab Math (MLM)</td>
<td>90% - 100% A</td>
</tr>
<tr>
<td>5% Class work and quizzes</td>
<td>80% - 89.5% B</td>
</tr>
<tr>
<td>60% Exams (4 unit exams worth 15% each)</td>
<td>70% - 79.5% C</td>
</tr>
<tr>
<td>20% Final Exam (Comprehensive and required)</td>
<td>60% - 69.5% D</td>
</tr>
<tr>
<td>100% Final Course Grade</td>
<td>&lt; 59.5% F</td>
</tr>
</tbody>
</table>

Additional suggested supplies: 100 - 150 sheet note book or binder with paper, and pencils
• Assignments include online MyLab Math (MLM), homework, D2L assignments, in-class quizzes and activities.
  o Each section of the course has a homework assignment.
  o 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
  o 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, http://www.sfasu.edu/policies/class-attendance-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.
  o 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.
  o 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.
  o You may use your calculator on exams. The calculator memory must be cleared prior to taking the exam.
  o Students may not share calculators during an exam. Students may not use cell phone calculators, computers, or other non-approved devices during an exam.
  o 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 in-class activities, quizzes, etc, could lower your assignment grade.

• The SFA attendance policy is available at the following link: www.sfasu.edu/policies/class-attendance-6.7.pdf.

• You may notify all your professors using the following link for the absence notification https://cm.maxient.com/reportingform.php?SFASStateUniv&layout_id=5.

  Note: an absence notification does not excuse a student from an exam or online homework assignment.

Additional Help:
• Visit the instructor during office hours (see above).

• Free tutoring is available from the Academic Assistance and Resource Center (AARC). For more information, visit the AARC website at 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.

SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support student’s mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

**SFASU Counseling Services:** [www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)  
3rd Floor Rusk Building 936-468-2401

**SFASU Human Services Counseling Clinic:** [www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)  
Human Services Room 202 936-468-1041

**Crisis Resources:**  
Burke 24-hour crisis line: 1(800) 392-8343  
Suicide Prevention Lifeline: 1(800) 273-TALK (8255)  
Crisis Text Line: Text HELLO to 741-741

Academic integrity is a responsibility of all university faculty and students. Please read the complete policy at [https://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf](https://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf).

See [http://www3.sfasu.edu/math/docs/syllabi/MATH1332Syllabus.pdf](http://www3.sfasu.edu/math/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 23 - 27  | Course Introduction  
2.1 Sets (8/25)  
2.2 Subsets (8/27)  
2.3 Venn Diagrams (8/29) |
| Aug 30 – Sep 3 | 2.4 Set Equality (9/01)  
2.5 Application of Sets (9/03)  
Review/ Catch-up |
| Sep 6 - 10   | Practice  
Exam 1: Chapter 2 Sets (Tuesday, September 7)  
3.1 Statements and Logical Connectives (9/10)  
3.2 Truth Tables I (9/12) |
| Sep 13 - 17  | 3.3 Truth Tables II (9/15)  
3.4 Equivalent Statements (9/17)  
3.5 Symbolic Arguments (9/19) |
| Sep 20 - 24  | 3.6 Euler Diagram (9/22)  
Review/ Catch-up/ Practice  
Exam 2: Chapter 3 Logic (Thursday, September 23) |
| Sep 27 – Oct 1 | 1.3 Problem Solving (9/29)  
10.1 Percent (10/1)  
10.2 Personal Loans and Simple Interest (10/3) |
| Oct 4 - 8    | 10.3 Compound Interest (10/6)  
10.4 Installment Buying (10/10) |
| Oct 11 - 15  | 10.5 Mortgages (10/13)  
10.6 Annuities and Sinking Funds (10/15)  
Review/ Catch-up |
| Oct 18 - 22  | Practice  
Exam 3: Chapter 10 Finance (Tuesday, October 19)  
11.1 Empirical and Theoretical Probability (10/22)  
11.3 Expected Value (10/24)  
11.4 Tree Diagrams (10/25) |
| Oct 25 - 29  | 11.5 OR and AND Probability (10/27)  
11.6 Conditional Probability (10/29)  
11.7 Counting Principle/ Permutations (10/31) |
| Nov 1 - 5    | 11.8 Combinations (11/02)  
Review/Catch-up and Practice  
Exam 4: Chapter 11 Probability (Thursday, November 4) |
| Nov 8 - 12   | 12.1 Sampling and Misuses of Statistics (11/10)  
12.2 Frequency Distribution and Graphs (11/12)  
12.3 Measures of Central Tendency (11/14) |
| Nov 15 - 19  | 12.4 Measures of Dispersion (11/17)  
12.5 The Normal Curve (11/19)  
Catch-up (Last day to drop a course Nov 19) |
| Nov 22 - 26  | Thanksgiving Holiday |
| Nov 29 – Dec 3 | Review/Practice for final |
| Tues, Dec 7, 8 am | **FINAL EXAM**, 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 through 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: Approximate time spent

- Critical Thinking (Chapter 1) [CO: 1,2,3] 16%
  - Inductive and Deductive Reasoning
  - Problem-Solving with Patterns
  - Problem-Solving Strategies
- Logic (Chapter 2) [CO: 1,2,3] 16%
  - 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] 16%
  - Basic Properties of Sets
  - Complements, Subsets and Venn Diagrams
  - Set Operations
  - Infinite Sets
- Financial Mathematics (Chapter 11) [CO: 1,2,3] 16%
  - 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] 16%
  - The Counting Principle
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.

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)
Ordinarly, 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

sfasu.edu/math
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.

SFASU Mental Health Statement: SFASU values students’ mental health and the role it plays in academic and overall student success. 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:
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
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. 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 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.