MATH 1332  Mathematics in Society  Fall 2023

Name: Danielle Johnson
Department: Mathematics and Statistics  Phone: 936-468-1521
Email: drjohnson@sfasu.edu  Office: Math 349

Class meeting time and place:  Section 003 – TR 12:30-1:45 Math 204
  Section 004 – TR 11:00-12:15 Math 204

Office Hours:  These hours have been set aside to help students.  Additional times are available by appointment.

  Monday and Wednesday:  1 pm – 2:30 pm  Tuesday and Thursday:  2 pm – 3 pm

Contacting your instructor:  Other than visiting my office hours, the best way to contact me is through email.  When emailing me, remember to e-mail me directly at drjohnson@sfasu.edu.  Include your name, class number, and section number in every email.  Do not wait until the last minute to email me and expect an immediate response. I will respond to emails by the end of the next business day.

Course description:
  Provides an introduction to mathematical thinking emphasizing analysis of information for decision-making.

Text and Materials:

Online homework will be completed using an online homework system known as MyMathLab at www.mymathlab.com.  When you create your account, you will need an access code and a course ID.  The access code can be purchased at bookstores serving the college or the cheaper option is to purchase the access code directly through MyMathLab.  There is also a 14-day free trial available to assist students waiting on financial aid. The course ID depends on which section of the class you are enrolled in.  Please use the correct course ID as follows:

  Section 003 (12:30 TR): johnson32252
  Section 004 (11:00 TR): johnson39823

Fill-in-the-blank notes will be posted on d2l for each topic 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 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.

Course Requirements:
There will be a homework assignment through MyMathLab for each section of material that is covered in class.  These assignments will generally be due at midnight on Wednesdays at 11:59 pm.  (Check MyMathLab frequently for due dates.) You will have unlimited attempts on each problem in the homework.  MyMathLab assignments will not be accepted late.  Attempt all MyMathLab homework assignments well in advance of the due date so that any mathematical and/or technical problems can be cleared up ahead of time.

There will be four exams and a comprehensive final exam.
  Exam 1 – Thursday, September 14
  Exam 2 – Thursday, October 5
  Exam 3 – Thursday, November 2
  Exam 4 – Thursday, November 30
  Final Exam – Section 003 (12:30 TR) – Thursday, December 14 at 10:30 – 12:30
    Section 004 (11:00 TR) – Tuesday, December 12 at 10:30 – 12:30
Note that the in-class exam dates are subject to change, but the final is university scheduled and cannot be taken at a different time without permission from the Dean of the College of Sciences and Mathematics.

The final exam is comprehensive and mandatory. Your final exam grade can be used to replace a low or missing exam grade, except in the case of receiving a zero on an exam because of cheating on that exam. Therefore, there will be no make-up exams. If you miss an exam, your final exam grade will be substituted in place of the missing exam grade. Your final exam grade must count towards your overall average but could count twice towards your overall average if it replaces a lower exam grade or missing exam grade.

Grading Policy:

<table>
<thead>
<tr>
<th>Course Grade</th>
<th>90% - 100%</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Daily Average (from MML homework system)</td>
<td>80% - 89%</td>
<td>B</td>
</tr>
<tr>
<td>60% Tests (4 @ 15% each)</td>
<td>70% - 79%</td>
<td>C</td>
</tr>
<tr>
<td>20% Comprehensive Final Exam</td>
<td>60% - 69%</td>
<td>D</td>
</tr>
<tr>
<td>100% Final Course Grade</td>
<td>0% - 59%</td>
<td>F</td>
</tr>
</tbody>
</table>

Attendance Policy:

Attendance is expected and recorded for all students. Attendance will not be formally factored into your course grade, however, 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 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 of doing work outside of class - one to two hours every day. Most importantly, ask for help when you need it.

More information about absences can be found on the Dean of Student’s website: https://www.sfasu.edu/thehub/sos/notification-request

Testing, Grading, and Make-up Policies

- If you miss an exam for any reason, you will receive a zero for the missed exam. The zero exam grade will be replaced by your final exam grade. If more than one exam is missed, the final exam grade will replace only one of the missed exam grades.
- 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. I must be able to recognize you from the photo on the ID.
- You may use your (approved) calculator on exams.
- Students may not share calculators during an exam. Students may not use cell phone calculators or smart watches during an exam.
- Since you have a full semester to arrange any travel plans, they are not an excuse for missing the final exam.

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

Course contact hours and Study hours:

MTH 1332 is a 3 hour credit course. This means that you should spend at least 6 hours per week outside of class studying for this class. Studying should include, but is not limited to, completing assignments. Please refer to the excerpt from SFA Policy 5.4 below.

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.

**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. See https://www.sfasu.edu/docs/policies/10.4.pdf for more information.

**Note:** 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.

A few words about academic integrity—I may opt to ask for an in-person oral examination if I have any reason to suspect that work that you present is not your own. Possession of materials that can be used to cheat, whether or not they are used, is considered academic dishonesty. Consequences for academic dishonesty will be determined in accordance with university policy at the time of the violation.

**Withheld Grades Semester Grades 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 coursework 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 to compute the grade point average. 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 promptly 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

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)
- johCrisis Text Line: Text HELLO to 741-741

See https://math.sfasu.edu/docs/syllabi/MATH1332Syllabus.pdf for elements common to all sections.
# Tentative Course Schedule MTH 1332.003 and MTH 1332.004

<table>
<thead>
<tr>
<th>Week of . . .</th>
<th>Courses and Topics</th>
</tr>
</thead>
</table>
| 8/28-9/01    | Course Introduction, Section 2.1 – Set Concepts  
Section 2.2 – Subsets |
| 9/4-9/8      | Section 2.3 – Set Operations  
Section 2.4 – Equality of Sets and Venn Diagrams  
Section 2.5 – Applications of Sets |
| 9/11-9/15    | Section 3.1 – Statements and Logical Connectives  
**EXAM 1 over Sets: Thursday, Sept. 14th** |
| 9/18-9/22    | Section 3.2 – Truth Tables for Negation, Conjunction, and Disjunction  
Section 3.3 – Truth Table for the Conditional and the Biconditional |
| 9/25-9/29    | Section 3.3 – Truth Table for the Conditional and the Biconditional (cont)  
Section 3.4 – Equivalent Statements  
Section 3.5 – Symbolic Arguments  
Section 3.6 - Euler Diagrams and Syllogistic Arguments |
| 10/2-10/6    | Section 10.1 – Percent  
Review for exam over Logic  
**EXAM 2 over Logic: Thursday, Oct. 5th** |
| 10/9-10/13   | Section 10.2 – Personal Loans and Simple Interest  
Section 10.3 – Compound Interest  
Section 10.4 – Installment Buying |
| 10/16-10/20  | Section 10.4 – Installment Buying (cont)  
Section 10.5 – Buying a House with a Mortgage |
| 10/23-10/27  | Section 10.5 – Buying a House with a Mortgage (cont)  
Section 10.6 – Ordinary Annuities and Sinking Funds |
| 10/30 -11/3  | Section 11.1 – Probability  
Review for exam over Finance  
**EXAM 3 over Finance: Thursday, Nov. 2nd** |
| 11/6-11/10   | Section 11.2 – Odds  
Section 11.4 – Tree Diagrams  
Section 11.5 – OR and AND Problems |
| 11/13-11/17  | Section 11.6 – Conditional Probability  
Section 11.7, 11.8, 11.9 – Permutations and Combinations and Probability and Combinations |
| 11/27-12/1   | Section 12.3/4 – Measures of Central Tendency and Dispersion  
**EXAM 4 over Probability and Counting: Thursday, Nov. 30th** |
| 12/4-12/8    | **DEAD WEEK**  
Section 12.5 – The Normal Curve  
Review for Final exam |
| 12/11-12/15  | Final Exam:  
MTH 1332.003 (12:30 TR) Thursday, December 14 at 10:30 am – 12:30 pm  
MTH 1332.004 (11:00 TR– Tuesday, December 12 at 10:30 am – 12:30 pm |

*****Most weeks there will be homework due in MyMathLab on Wednesday nights at 11:59 pm.  
Please regularly check MyMathLab for due dates of the homework assignments.  **********
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: 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
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.

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.

sfasu.edu/math
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)**

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[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.

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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