Math 1351 -A
Finite Mathematics
Instructor: Ali Najm
Office: Math House 214
Phone: 713.525.3855
Email: najma@stthom.edu

Office Hours: MW 1:30PM – 2:30PM
           TTH 11:00AM – 1:00PM

Term and year: Spring 2018

Class Days and Times: MW 12:10PM – 1:25 PM
Location: Strake # 101

Course Description: Topics includes logic, set theory, graph theory, counting, probability, mathematical finance, descriptive and inferential statistics.

Finite Mathematics is designed to develop the student ability to recognize and be able to solve real world problems using concepts of probability, statistics and financial mathematic, among other concepts.


Student learning objectives:

- Students will use inductive and deductive reasoning, aided by graphs, charts and Venn diagrams to answer questions about the relationships between sets of objects or people.
- Students will analyze statements using the rules of logic and apply the formal rules of logic to determine the validity of arguments stated in everyday language.
- Students will calculate simple and compound interest in order to solve problems in consumer finance.
- Students will calculate basic experimental and theoretical probability and apply their results to common daily issues.
- Students will analyze data by choosing an appropriate representation, finding the mean, median and mode and standard deviation and interpreting the results.

Grade Determination:
Grades will be based on class participation and activities, homework, two semester tests and a comprehensive final exam.

<table>
<thead>
<tr>
<th>Classroom Activities, Quiz and Participation</th>
<th>10%</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Test 1</td>
<td>25%</td>
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<tr>
<td>Test 2</td>
<td>25%</td>
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<tr>
<td>Final</td>
<td>30%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Class Participation Attendance in class is mandatory. Emergencies happen, so all students will be given 2 excused absences for personal issues. Excessive absences beyond that will be excused only for documented extreme circumstances. However, students who are not able to attend class often cannot finish successfully, so it is a student’s responsibility to drop the course before the deadline if they are unable to complete the course.

Homework and Classroom Activities: Homework will be assigned weekly and should be written up completely. It will be due at the beginning of class in the following week. Classroom activities will include quizzes. Quizzes may or may not be announced ahead of time and they are connected to the homework due that day, others will be participation in the daily interactive learning. There will be no makeups for activities.
Attendance: Attendance is mandatory and will be recorded daily.

Calculators: You may use any calculator on homework and exams for which a calculator is allowed. You will need one that does exponents and basic probability functions. A non-graphing scientific calculator is sufficient. I have a TI 30 XX, TI 83 which meets all my needs for this class.

Exams: Exams will be in class on the date announced. There are no make-up exams; however your grade on the final will replace a missed test grade. There will be a review session prior to each exam. Final exam is comprehensive and will be given on the date specified in the spring semester final exam schedule. Calculators will be permitted on exams.

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
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<tr>
<td>A-</td>
<td>90-92.9</td>
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<tr>
<td>B+</td>
<td>87-89.9</td>
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<tr>
<td>B</td>
<td>83-86.9</td>
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<tr>
<td>B-</td>
<td>80-82.9</td>
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<tr>
<td>C+</td>
<td>77-79.9</td>
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<tr>
<td>C</td>
<td>73-76.9</td>
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<tr>
<td>C-</td>
<td>70-72.9</td>
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<tr>
<td>D+</td>
<td>67-69.9</td>
</tr>
<tr>
<td>D</td>
<td>60-66.9</td>
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<tr>
<td>F</td>
<td>&lt;60</td>
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Accommodations: The University of St. Thomas provides reasonable accommodations to students who request academic accommodation due to a disability that imposes impairment in the learning environment. Disabilities may be defined by the following:

- Learning disabilities
- Health impairments
- Physical limitations
- Psychiatric conditions

The University abides by the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008 (ADAA), Section 504 of the Rehabilitation Act of 1973 and other legal mandates. To receive accommodations students must provide information to validate that a disability exists. Each student’s situation is individually assessed and reviewed.

For more information, please contact the Counseling & Disability Service office.

Blackboard Resources: You may find the login for blackboard on your My StThom page. Use your CELT login ID and password to access blackboard. Course syllabus, calendar, reminders and announcements will be found in Blackboard.

Academic Honesty: Ethical conduct is essential to a community of scholars and students searching for truth. Anything less than total commitment to honesty and honorable conduct undermines the efforts of the entire community. Academic integrity lies at the very heart of any institution of higher learning. Students and faculty are expected to commit to a code that exemplifies each individual's honor and integrity. Any conduct that violates this standard and betrays the respect of others is a matter of grave concern and, accordingly, is deemed unacceptable.

Classroom Conduct Policy: No disruptive behaviors. Technologies are allowed as long as they are not distracting or interfering with another student's learning. Be kind and respectful to each other.

Instructional Outline:

**Chapter 1 Problem Solving: Strategies and Principles**
1.1 Problem Solving
1.2 Inductive and Deductive Reasoning

**Chapter 2 Set Theory**
2.1 The Language of Sets
2.2 Comparing Sets
2.3 Set Operations
2.4 Survey Problems

**Chapter 3 Logic: The Study of What’s True or False**
3.1 Statements, Connectives and Quantifiers
3.2 Truth Tables
3.3 The Conditional and Biconditional
3.4 Verifying Arguments

TEST 1
Chapter 4 Graph Theory (Networks): The Mathematics of Relationships
4.1 Graphs, Puzzles and Map Coloring.
4.2 The Traveling Salesman Problem.

Chapter 8 Consumer Mathematics
8.1 Percent, Taxes and Inflation
8.2 Interest
8.3 Consumer Loans
8.4 Annuities
8.5 Amortized Loans
8.6 Annual Percentage Rate

Chapter 11 Voting: Using Mathematics to Make Choices
11. 1 Voting Methods
11.2 Defects in Voting Methods
11.3 Weighted Voting Systems

TEST 2

Chapter 12 Counting: Just How Many Are There?
12.1 Introduction to Counting Methods
12.2 The Fundamental Counting Principles
12.3 Permutations and Combinations

Chapter 13 Probability: What Are the Chances?
13.1 The Basics of Probability Theory
13.2 Complements and Unions of Events
13.3 Conditional Probability and Intersections of Events*
13.4 Expected Value
13.5 The Binomial Experiments

Chapter 14 Descriptive Statistics
14.1 Organizing and Visualizing Data
14.2 Measures of Central Tendency
14.3 Measures of Dispersion
14.4 The Normal Distribution*
14.5 Linear Correlation*
Sections with a * will be covered if time permits.

Final Exam.

Important Dates:
- Feb 2 - Last day to drop the course without academic penalty.
- Feb 14 – Exam 1
- March 21 – Exam 2
- April 2 - Last day to drop the course and receive W (Withdraw)
- Final Exam – May 7 - 15