

MATH 1324
Mathematics for Business & Social Sciences

CRN: NA
Campus and Room: Room 204
Instructor: Dr. Le Minh Trung

Office Hours: By appointment

Semester: Summer 2019
Meeting Times: Tue, Fri: 9:45 – 11:45
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Course Description:

This course covers many important mathematical topics for students in the field of business, management, social science, and natural science. Topics include set theory, probability, matrices, linear programming, and an introduction to statistics.

Prerequisite: ESL Level 4
Credits: 3 (3 lecture hours)
Total Course Contact Hours: 48
Type of Instruction: Lecture
Instructional Methods: Face to Face

Academic Discipline/CTE Program Learning Outcomes

1. Formulate algebraic and/or transcendental equations using variables to represent relations.
2. Apply mathematics skills to solve application problems.
3. Construct, manipulate, and utilize mathematical functions.

Course Student Learning Outcomes (SLO)	Learning Objectives
1. Solve business / financial problems by the use of systems of equations, systems of inequalities, and matrices.	1.1: Be able to graph systems of linear equations in two variables. 1.2: Be able to solve systems of linear equations using Gauss-Jordan elimination. 1.3: Know how to add, subtract, and multiply matrices. 1.4: Be able to find the inverse of a square matrix. 1.5: Be able to graph systems of linear inequalities in two variables. 1.6: Be able to convert a business problem into a system of equations / inequalities. 1.7: Be able to calculate simple and compound interest; the future value of a given annuity; the monthly payment and the total interest for a given simple interest amortized loan.
2. Formulate and solve linear programming problems by graphing and the Simplex Method.	2.1: Know the graphical method for solving a linear programming problem. 2.2: Know the simplex method for solving standard maximization, standard minimization and non-standard problems.
3. Analyze information and make conclusions based on set data.	3.1: Be able to perform the basic set operations. 3.2: Be able to use the multiplication principle of counting. 3.3: Understand permutations and combinations. 3.4: Be able to use the basic counting techniques.
4. Comprehend, analyze, and synthesize statistical data in order to make predictions.	4.1: Understand conditional probability. 4.2: Be able to use Bayes' Formula. 4.3: Be able to find expected values. 4.4: Be able to find the standard deviation of a set of values. 4.5: Be able to find the binomial distribution and the normal distribution of a set of data.

Textbook:

Mathematics with Applications In the Management, Natural, and Social Sciences; 11th ed.; Margaret Lial, Thomas Hungerford, John Holcomb, Jr., Bernadette Mullins. ISBN-13: 978-0-321-93107-8 (2015).

Course Requirements and Expectations:

- All assignments of each week should be completed in **Moodle before 9:30 Friday of the next week. The system will not allow you to take the quiz after this deadline. This will result in 0 point** for the week's assignment.
- For Tests 1, 2, 3, 4 students have **maximum 90 minutes** to take on your computer outside class, in the week of the test.
- The projects are assigned to each student after the Midterm Exam. The projects must be submitted in **Excel format before 13:00 Friday, August 23, 2019.**

Students will complete a research project or case study designed to cultivate the following core objectives:

- **Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication.
- **Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
- The final exam may replace your lowest exam score, including a missed exam (grade zero). If you miss an exam for any reason, your final exam grade will substitute for the missed exam. This is allowed for only ONE exam. All other missed exams will result in a grade of zero.
- **Class Attendance - It is important that you come to class!** Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to attend all lecture and labs regularly. You are responsible for materials covered during your absences. Class attendance is checked each time you go to class. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. Students may be dropped from a course after accumulating absences in excess of six (6) hours of instruction. The six hours of class time would include any total classes missed or for excessive tardiness or leaving class early. Absences may be such things as court appearances, illnesses, funerals, transportation issues, hospital stays, etc.

Grading Scheme:

Item	Assignments	Projects	Test 1	Test 2	Test 3	Test 4	Mid-term Exam	Final Exam	Total
Percent	20%	6%	6%	6%	6%	6%	20%	30%	100%

The standard grading scale will be used:

Grade	A	B	C	D	F
Score	90 - 100	80 - 89	70 - 79	60 - 69	< 60

The passing grade of this course is C.

Late Assignment Policy: Late assignments will have score of **ZERO** for the assignments.

Make-up Exam Policy: Make-up exams will not be given unless the student has a verifiable, valid excuse that has been discussed with the instructor in advance.

Personal Communication Device Policy:

All personal communication devices (any device with communication capabilities including but not limited to cell phones, blackberries, pagers, cameras, palmtop computers, lap tops, PDA's, radios, headsets, portable fax machines, recorders, organizers, databanks, and electronic dictionaries or translators) must be muted or turned off during class. Such activity during class time is deemed to be disruptive to the academic process. Personal communication devices are to not be on the student desk during examinations. Usage of such devices during exams is expressly prohibited during examinations and will be considered cheating (see academic dishonesty policy at the end of this syllabus).

Course Calendar:

W	Date	Content	Assignments
1	Tuesday, June 4, 2019	Introduction to the course CHAPTER 2: GRAPHS, LINES AND INEQUALITIES 2.1. Graph 2.2. Equations of lines	Quiz 2.1 Quiz 2.2
	Friday, June 7, 2019	2.3. Linear models 2.4. Linear Inequalities	Quiz 2.3 Quiz 2.4
2	Tuesday, June 11, 2019	CHAPTER 5: MATHEMATICS OF FINANCE 5.1. Simple Interest and Discount 5.2. Compound Interest	Test 1 Quiz 5.1 Quiz 5.2
	Friday, June 14, 2019	5.3. Annuities, Future Value, and Sinking Funds 5.4. Annuities, Present Value, and Amortization	Quiz 5.3 Quiz 5.4
3	Tuesday, June 18, 2019	CHAPTER 6: SYSTEMS OF LINEAR EQUATIONS AND MATRICES 6.1: Systems of Two Linear Equations 6.2: Larger Systems of Linear Equations	Quiz 6.1 Quiz 6.2
	Friday, June 21, 2019	6.3: Applications of Systems of Linear Equations 6.4: Basic matrix operations	Quiz 6.3 Quiz 6.4
4	Tuesday, June 25, 2019	6.5: Matrix products and inverses 6.6: Applications of Matrices (omit Code Theory and Routing)	Quiz 6.5 Quiz 6.6
	Friday, June 28, 2019	Chapter 7: LINEAR PROGRAMMING 7.1. Graphing Linear Inequalities in two variables 7.2. Linear programming: the graphical method	Test 2 Quiz 7.1 Quiz 7.2
	Tuesday, July 2, 2019 Friday, July 5, 2019	IT Boot Camp. No classes.	
5	Tuesday, July 9, 2019	7.3. Applications of linear programming	Quiz 7.3
	Friday, July 12, 2019	7.4. The Simplex method: Maximization 7.5. Maximization Applications	Quiz 7.4 Quiz 7.5
6	Tuesday, July 16, 2019	7.6. The Simplex method: Duality and Minimization 7.7. The Simplex method: Non-standard Problems	Quiz 7.6 Quiz 7.7
	Friday, July 19, 2019	Chapter 7 Review Midterm Exam (Chapter 2, 5, 6 & 7) Midterm Exam Format	
7	Tuesday, July 23, 2019	Projects Assignment Chapter 8: SETS AND PROBABILITY 8.1. Sets 8.2. Applications of Venn Diagrams	Quiz 8.1 Quiz 8.2
	Friday, July 26, 2019	8.3. Introduction to Probability 8.4. Basic concepts of probability	Quiz 8.3 Quiz 8.4
8	Tuesday, July 30, 2019	8.5. Conditional Probability; Independent Events 8.6. Bayes's Formula	Quiz 8.5 Quiz 8.6
	Friday, August 2, 2019	Chapter 9: COUNTING, PROBABILITY DISTRIBUTIONS AND FURTHER TOPICS IN PROBABILITY 9.1: Probability Distributions and Expected Value 9.2: The Multiplication Principle, Permutations and Combinations	Test 3 Quiz 9.1 Quiz 9.2
9	Tuesday, August 6, 2019	9.3: Applications of Counting	Quiz 9.3
	Friday, August 9, 2019	9.4: Binomial Probability	Quiz 9.4
10	Tuesday, August 13, 2019	Chapter 8 & 9 Review	Test 4
	Friday, August 16, 2019	Chapter 10: INTRODUCTION TO STATISTICS 10.1: Frequency Distributions 10.2: Measures of Central Tendency	Quiz 10.1 Quiz 10.2
11	Tuesday, August 20, 2019	10.3: Measures of Variation 10.4: Normal Distributions and Boxplots	Quiz 10.3 Quiz 10.4
	Friday, August 23, 2019	Chapter 10 Review Final Exam (cover all chapters: 2, 5, 6, 7, 8, 9, 10)	

12	Tuesday, August 27, 2019	Solutions to Final Exam Project Presentation	
	Friday, August 30, 2019	Project Presentation (cont.) Summary of Tests and Assignments	

Academic Dishonesty Policy

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the SaigonTech Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by school officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes the following:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from SaigonTech.