Lincoln University

MATH 15 – FINITE MATHEMATICS

COURSE SYLLABUS
Spring, 2020

Instructor:	Professor Len Filane, Ph.D.
Lecture Schedule:	Mo: 12.30 – 3.15 pm
Credits:	3 units / 45 lecture hours
Level:	Introductory (I)
Office Hours:	Mo. 4.15-5.15 pm, the teacher's lounge, main bldg., 4th fl.
	e-mail: lfilane@lincolnuca.edu
Textbooks:	1. Finite Mathematics and Calculus with Applications, 10th Ed. By M. Lial, R. Greenwell, N. Ritchey
	2. Elementary Linear Algebra. Howard Anton 10th Ed. Wiley.

Prerequisites: College Algebra

Last Revision:	Jan. 14, 2020

DISCLAIMER

This syllabus may be changed or updated at the instructor's discretion.

CATALOG DESCRIPTION

Topics include matrix theory, linear systems, linear programming, probability, decision theory, and game theory. Also applied calculus is covered. (3 units)
Prerequisite: Math 10 or Math 15.

COURSE LEARNING OUTCOMES[1]

	COURSE OUTCOME	PROGRAM LO	Institutional LO	Assessment Activities

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[1] Detailed description of learning outcomes and information about the assessment procedure are available at the Center for Teaching and Learning website (ctl.lincolnuca.edu).

1	Students are expected to learn the basic concepts and techniques of Finite Mathematics. The emphasis of the course will be on the application of the Finite Mathematics techniques.	PLO 1	ILO 1a, ILO 2a, ILO 3a	Homework, Class assignments, class participation, Quizzes, Exams
2	Students are expected to develop logic, application and interpretation of the most commonly Finite Mathematics techniques used in business and social sciences. The class does not require previous knowledge of any complicated mathematical techniques, but requires intermediate algebra, common sense and practical logic.	PLO2	ILO 1a, ILO 6a	Homework, Class assignments, class participation, Quizzes, Exams
3	Confidently communicate using and mathematics terminology.	PLO 3		Homework, Class assignments, class participation, Quizzes, Exams
4	Be able to choose an appropriate mathematical analysis for the type of data they plan to analyze, select an appropriate model, conduct and interpret the analysis, and write down the results.	PLO 4	ILO 1a, ILO 2a, ILO 5a	Homework, Class assignments, class participation, Quizzes, Exams

INSTRUCTIONAL METHOD

Lectures, demonstration of the solutions for problems by the instructor, solving problems in class independently and in groups, class discussions, "student teaching", at-the-board students' demonstrations of the solutions, frequent discussions of the homework.
 Students are strongly encouraged to use additional resources, such as the Internet, the library, etc.
Assignments and projects require students to actively use resources of the library. Detailed guide to business resources of the library as well as the description of Lincoln University approach to information literacy are available at the Center for Teaching and Learning website (ctl.lincolnuca.edu).

LECTURE CONTENT
-Algebra Reference
-Linear Functions
-System of Linear Equations and Matrices
-Linear Programming
-Mathematics of Finance
-Probability
-Statistics
-Nonlinear functions
-The Derivative
-Applications of the derivative
-Integration

ACADEMIC HONESTY & INTEGRITY HONOR CODE

The faculty, administration, and staff reinforce academic honesty and principles of academic honor. Independent learning is vital to the requirements of honesty and integrity in the performance of academic assignments, both in the classroom and outside. Students should avoid academic dishonesty in all of its forms, including plagiarism, cheating, and other forms of academic misconduct. The University reserves the right to determine what constitutes a violation of academic honesty and integrity.

ASSESSMENT

TWO-FOUR CLASS POP QUIZZES
HOMEWORK
CLASS WORK/PARTICIPATION
MIDTERM EXAM
FINAL EXAM

CALCULATION OF FINAL GRADES:

Homework: 7%
Quizzes   :   20%
Midterm Exam: 23%
Final Exam   :   35%

Class Participation: 15%

GRADING SCALE: (Should follow Department and/or College Template)

Grade	A	B	C	D	F
GPA Points	4.0	3.0	2.0	1.0	0
%	90-100	80-89	70-79	60-69	less than 60

<u>Re-taking or making up of the quizzes and exams will not be offered.</u>

CLASS WORK /CLASS PARTICIPATION:

Your goal should be to demonstrate the grasp of the concepts, ability to solve problems and critical thinking skills in analyzing them. You should strive to ask relevant questions, volunteer relevant answers, as well as volunteer to solve problems on the board, and actively participate in class discussions.

If you were tardy or missed a class you did not participate in class work. It may be reflected in your grade for class work.

Class time is for learning only. A student must refrain from discussing any issue that is not directly related to the process of learning and concept understanding.

Issues related to grades for tests or teaching methodology should be raised only outside of class time.

Class work is graded on a scale of 0-10.

HOMEWORK

Written HW is graded on the scale 0-10. Since its impossible for me to exactly predict the rate of covering the material, I will give homework every class, as we move forward. I will collect homework on selected days only. Bring your current homework to every class. Your homework must be stapled, be neat and legible. Avoid submitting "dog ears"! Keep your HW in a ring-binder. If you write chaotically I would not be able to follow your work, hence I will not be able to grade it. HW that does not meet the above outlined requirements will be rejected and awarded zero points.

Show your work in detail. If you do not show all the work required to complete the homework problems, I will reduce your homework credit. Just showing the answer will not be accepted for any credit.

All homework is to be done by the enrolled student and must be your own work. Any attempt to copy or re-use homework or share the same work between the students will result in zero credit. No late homework will be accepted. I will not accept any HW after my announcement of the end of the collection process. If you know that you will be absent in class, please email your scanned homework to me prior to the beginning of the current class. If you have a question or an issue regarding your HW, then the best way to resolve it is after the class hours.

Do not copy the solutions from the instructor's solution manual or online. If you do it, you will be guilty of plagiarism which is a violation of the student conduct code, and may result in you being disciplined, suspended from class or expelled from the school.

UNIVERSITY ATTENDANCE POLICY:
Lincoln University uses the class method of teaching, which assumes that each student has something to contribute and something to gain by attending class. It further assumes that there is much more instruction absorbed in the classroom than can be tested on examinations. Therefore, students are expected to attend all regularly scheduled class meetings and should exhibit good faith in this regard.

INSTRUCTOR's ATTENDANCE POLICY:
Attendance is mandatory. I frown on tardiness. If you are frequently late to class, please review your schedule and make the necessary adjustments. Late arrivals are disruptive to class, they adversely affect the performance of all, including your instructor.

If you are late to a quiz or exam you will not be allowed to take it.

UNIVERSITY ACADEMIC INTEGRITY STATEMENT:
Students are responsible for proper conduct and integrity in all of their scholastic work. They must follow a professor's instructions when completing tests, homework, and laboratory reports, and must ask for clarification if the instructions are not clear.

COURSE SCHEDULE

WEEK 1 Polynomials, equations, inequalities, Exponents, radicals, logarithms	**WEEK 9** Simple and Compound interest. Future value of an annuity.
WEEK 2 Slopes and equations of lines, least squares lines	**WEEK 10** Probability. Venn diagrams. Bayes' Theorem
WEEK 3 Systems of linear equations. Matrices	**WEEK 11** Counting principles. Binomial probability.
WEEK 4 Matrices. Solutions of linear systems **QUIZZ 1**	**WEEK 12** Frequency distributions. Standard deviation. Normal distribution.
WEEK 5 Euclidian Vector Spaces. General Vector Spaces.	**WEEK 13** Limits, continuity, derivatives
WEEK 6 Eigenvalues and Eigenvectors. Inner Product spaces. Diagonalization and Quadratic Forms	**WEEK 14** Antiderivatives, definite integral
WEEK 7 Linear Transformations.	**WEEK 15** **Review**

WEEK 8 **MIDTERM EXAM** Solving linear programming problems. Maximization and minimization.	