DEREE COLLEGE SYLLABUS FOR: MA 1108 LE COLLEGE ALGEBRA

US CREDITS: 3/0/3

(SPRING 2018)

PREREQUISITES:	Placement test or MA1022 Intermediate Mathematics
CATALOG DESCRIPTION:	Linear, Quadratic, Polynomial, Rational, Exponential and Logarithmic Functions and their Graphs. Asymptotes and Continuity via Limits. Solution of Systems of Linear Equations. Matrices and Matrix Algebra. Determinants. Sequences and Series.
RATIONALE:	This course is intended for incoming students. The purpose of this course is to introduce and reinforce basic college algebra techniques. The course focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate, who should be able to apply simple mathematical methods to the solution of real-world problems.
LEARNING OUTCOMES:	1. Demonstrate knowledge of the concept of a function and its properties. 2. Illustrate ability to work with linear, quadratic, polynomial and rational functions and sketch their graphs. 3. Show ability to discuss asymptotes of rational functions and continuity of functions via limits. 4. Demonstrate knowledge of composite functions and inverse functions. 5. Illustrate ability to work with the exponential and the logarithmic functions, apply their properties and sketch their graphs. 6. Demonstrate knowledge of the concept of matrix and perform matrix algebra. 7. Show ability to solve systems of linear equations using matrices and determinants. 8. Demonstrate knowledge of the concepts of arithmetic and geometric sequences and evaluate arithmetic and geometric sums.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: ➢ Class lectures, class discussion, and practical problems solved in class. Furthermore interactive learning, group work and online presentations may be used. ➢ Exercises and primary source documents are assigned as homework, the solutions of which are reviewed in class. ➢ Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture material. ➢ Use of the blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.
ASSESSMENT:	Summative: In-class Examination 1 — **30%** In-class Examination 2 — **30%** Final Examination — **40%** Examination 1 is a 1-hour in-class examination. Learning outcomes: 1, 2, 3 Examination 2 is a 1-hour in class examination. Learning outcomes: 4, 5, 6 The final examination is a 2-hour comprehensive examination. Learning outcomes: (1, 2, 3, 4, 5, 6), 7, 8
INDICATIVE READING:	**REQUIRED READING:** Ron Larson, College Algebra, Cengage, © 2018, e-book.

	RECOMMENDED READING: • Instructor hand-outs. • Barnett, R. E., Ziegler, M. R., Byleen, K. E. and Sobecki, D. Precalculus, McGraw Hill. • Spiegel, M. R. and Moyer, R. E. Schaum's Outline of College Algebra, McGraw Hill, © 2010 Edition. • Library reserved material.
INDICATIVE MATERIAL: *(e.g. audiovisual, digital material, etc.)*	**REQUIRED MATERIAL:** **RECOMMENDED MATERIAL:** • College Mathematics • Mathematics Magazine • American Mathematical Monthly
COMMUNICATION REQUIREMENTS:	Verbal presentation skills using academic / professional English.
SOFTWARE REQUIREMENTS:	Any software distributed with the course textbook.
WWW RESOURCES:	www.wolframalpha.com www.quickmath.com www.sosmath.com
INDICATIVE CONTENT:	**1. Linear and Quadratic Functions** 1.1. Functions and their Properties 1.2. Linear Functions and their Properties 1.3. Quadratic Functions and their Properties 1.4. Graphs of Linear and Quadratic Functions 1.5. Applications of Linear and Quadratic Functions **2. Polynomial and Rational Functions** 2.1. Polynomial Functions 2.2. Properties of Rational Functions 2.3. The Graph of a Rational Function. Asymptotes via Limits 2.4. Continuity of Functions via Limits 2.5. Applications of Polynomial and Rational Functions **3. Exponential and Logarithmic Functions** 3.1. Composite and Inverse Functions 3.2. Exponential Functions and Properties 3.3. Logarithmic Functions and Properties 3.4. Exponential and Logarithmic Equations 3.5. Applications of Exponential and Logarithmic Functions **4. Systems of Linear Equations** 4.1. Matrix Algebra and Operations 4.2. Systems of Linear Equations: Matrices 4.3. Determinants **5. Sequences and Series** 5.1. Arithmetic and Geometric Sequences 5.2. Arithmetic and Geometric Series