DEREE COLLEGE SYLLABUS FOR: MA 1000 LE MATHEMATICS FOR THE LIBERAL ARTS

US CREDITS: 3/0/3

(Updated FALL 2021)

PREREQUISITES:	NONE
CATALOG DESCRIPTION:	Fundamental mathematics knowledge for the liberal arts students. Topics include quantitative information in everyday life, financial management, probability, and statistics.
RATIONALE:	This course is designed for incoming students with majors in the liberal arts. It provides students with an appreciation of mathematics in the world around us and prepares them in the use of mathematics in everyday contemporary life. Students have the opportunity to develop the skills required to understand and interpret quantitative information that they encounter in the news and in their studies, and to make quantitatively-based decisions in their lives.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Interpret quantitative information provided by percentages, ratios, proportions, linear and quadratic equations. 2. Apply basic consumer mathematics in solving introductory problems of finance. 3. Apply set properties and Venn diagrams to understand and analyze survey data and information. 4. Demonstrate knowledge of fundamental probability concepts and apply basic statistical descriptive measures and graphical presentations for summarizing and interpreting data.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: ➢ Class lectures, interactive learning (class discussion, group work), video presentations, and practical problems solved in class. ➢ Exercises and primary source documents are assigned as formative homework, the solutions of which are reviewed in class. Computer software/online digital resources will be available both as a teaching aid and as a medium for solving problems. ➢ 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 course website, where instructors post lecture notes, course guidelines, assignment instructions, timely announcements, as well as additional resources.
ASSESSMENT:	**Summative:** First assessment: midterm exam — **40%** — Solving exercises and problems Second assessment: portfolio of student work — **10%** — Homework using online digital resources for problem-solving to promote critical thinking in applications of related topics Final assessment: final exam — **50%** — Solving exercises and problems The first assessment (midterm exam) tests Learning Outcomes 1, 2. The second assessment (portfolio) tests Learning Outcomes 1, 2, 3, 4. The final assessment (final exam) tests Learning Outcomes 1, 2, 3, 4. The final assessment is comprehensive. Average grading applies.

	The final grade for this module will be determined by averaging all summative assessment grades, based on the predetermined weights for each assessment. Students are not required to resit failed assessments in this module. Failure to pass the module results in module repeat.
INDICATIVE READING:	**REQUIRED READING:** Aufmann, R. N. et.al., *Mathematical Excursions*, 4th Ed., (2018), Cengage **RECOMMENDED READING:** Smith, Karl J., *The Nature of Mathematics*, 13th Ed., (2017), Cengage
INDICATIVE MATERIAL:	**REQUIRED MATERIAL: N/A** **RECOMMENDED MATERIAL:** • College Mathematics • Mathematics Magazine • American Mathematical Monthly
COMMUNICATION REQUIREMENTS:	Oral and written communication skills using academic / professional English.
SOFTWARE REQUIREMENTS:	Software associated with the course textbook's digital learning resources.
WWW RESOURCES:	https://www.khanacademy.org/math http://mathworld.wolfram.com http://quickmath.com http://merlot.org
INDICATIVE CONTENT:	**1. Basic Algebra** 1.1. Fractions and Operations 1.2. Percents, Ratios and Proportions 1.3. Linear Equations in One and Two Variables 1.4. Quadratic Equations **2. Mathematics of Finance** 2.1. Simple Interest 2.2. Compound Interest **3. Sets** 3.1. Sets and Operations 3.2. Venn Diagrams 3.3. Survey Problems Using Sets **4. Probability** 4.1. Tree Diagrams 4.2. The Multiplication Principle 4.3. Probability 4.4. Basic Laws of Probability **5. Statistics** 5.1. Frequency Distributions 5.2. Graphical Presentation of Data 5.3. Measures of Central Tendency 5.4. Measures of Variability