Syllabus for Math Preparation

NOCR-GB.1002.01, Fall 2016

Dates to be Determined

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1. Objective

The objective of the workshop is to prepare incoming MBA students with the basic mathematical skills for first year MBA courses. Upon finishing the workshop, the students will have the ability to solve the types of the problems exemplified by those in the math skills self-assessment.

2. Handouts

The lectures are supplemented by a set of class handouts that contain sufficient information for the students to understand and review the concepts and examples discussed in the lectures, and to solve homework problems.

3. Computation

You will need a *scientific* calculator for the lectures and homework problems. The calculator should have the following buttons on it: x^2, $\sqrt{\ }$, x^{-1}, ^, ln, e^x.

4. Homework

Homework problems will be distributed after each session. The problems will not be collected or graded. Any student having questions about homework problems can contact me for additional help.

5. Schedule of Topics

The following topics will be covered in three sessions. Methodologies are illustrated with business examples.

Topic Number	Session Number	Topic Description
Topic 1	Session 1	Algebra Review 1. Laws of Exponents 2. Adding and Subtracting Rational Expressions 3. Quadratic Formula and Factoring 4. Summation Notation 5. Solving Systems of Equations 6. Solving Systems of Inequalities Functions and Linear Models 1. Rate of Change 2. Average Rate of Change
Topic 2	Session 1 Session 2	The Mathematics of Finance and Nonlinear Models 1. Simple Interest 2. Compound Interest 3. Exponential functions and logarithmic functions 4. Continuously Compounded Interest 5. Effective Rate 6. Logarithmic Rate of Return
Topic 3	Session 2	Introduction to the Derivative 1. Introduction to Limits 2. Definition of the Derivative The Shortcuts of Differentiation 1. Power Rule 2. Product Rule

		3. Quotient Rule **4. Chain Rule** **5. The derivative of exponential functions** **6. The derivative of logarithmic functions**
Topic 4	**Session 3**	**Applications of the Derivative: Optimization** **1. Critical Points** **2. First Derivative Test** **3. The Second Derivative** **4. The Second Derivative Test** **5. Convexity and Concavity** **6. Inflection Points**

6. Self Assessment Exam

There will be a self-assessment exam upon completion of the course.