



To: Incoming MBA Students, Part-Time Program
From: Dr. Shreevardhan Lele, Assistant Dean of Academic Affairs (MBA Programs)
Re: Optional Online Pre-Skills course: *Mathematics for Management*
Date: May 28, 2019

The Smith MBA program begins with intensely quantitative required courses. In order to ensure that you are able to maximize your learning during this part of the program, it is essential to enter the program with well-developed pre-skills in basic business mathematics.

Business math skills are needed for several required and elective courses in the MBA program. In the early part of the program, courses such as *Managerial Economics*, *Data Driven Decision Making* and *Corporate Finance* require, and assume of *all* students, a thorough familiarity with basic math.

If your math skills are either (a) under-developed or (b) have become rusty due to disuse, it is strongly recommend that you take the online pre-skills course *Mathematics for Management*.

Mathematics for Management consists of 5 sections: Algebra, Calculus, Statistics, Probability and Finance. Topics covered in each section are shown below:

Algebra

Functions, solving equations in one and two variables, linear inequalities, rules of exponents, order of operations, graphing straight lines, quadratic and polynomial functions, power functions, inverse functions, index numbers, logarithms and demand elasticity

Calculus

Derivative, rules for derivatives of polynomial and simple functions, second derivatives, maximizing and minimizing a function, convex and concave functions, inflection points

Statistics

Descriptive statistics, measures of central location, variability, skewness, histograms, correlation and covariance, using Excel to generate histograms and compute summary descriptive statistics

Probability

Basic rules of probability, probabilities of unions and intersections of events, mutually exclusive events, conditional probability, independent events, mean and variance of a random variable, the probability density function, normal random variable

Finance

Net present value (NPV), internal rate of return (IRR), payback, future value, annuities, perpetuities, compound interest, bond pricing, compound annual growth rate (CAGR)

According to Harvard Business School Publishing, students with little prior exposure to the math concepts reviewed in the course may take approximately 20 hours to complete the course.

For Technical Help

Please call the Harvard Business Publishing Technical Support Group at 800-810-8858 (outside U.S. and Canada, call +1-617-783-7700); or email techhelp@hbsp.harvard.edu.