



## Financial Mathematics - Online

Financial Mathematics is a building block to learners in the field of finance. The topics expose the user to fundamental concepts such as cash flows, present value, future value, yield and probability that form the basis for further advanced learning.

This is an online self study course that can be globally accessed 24/7 from any internet enabled computer. Access is for 91 days. Certificates with earned credits will be awarded upon successful completion.

También, se ofrece este curso en Español. Llamada para más información.

### Targeted Audience

Portfolio managers, institutional sales staff, research analysts, back office professionals, financial analysts, cash/money managers, auditors, and compliance staff.

### Advance Preparation

No advance preparation required.

### Learning Objectives

Students will be able to:

- . Evaluate cash flows at various points in time
- . Gain an insight into basic financial measures such as current yield, yield-to-maturity, and total return analysis
- . Analyze the mechanics of bond pricing and issues involved therein
- . Understand the concepts of volatility and correlation in financial asset prices

**Level: Basic**

**icb Credits: 14.75**

**icpas Credits: 3**

## **Detailed Outline**

### **Basic Financial Measures**

**Topics covered include:**

- . The various yield measures
- . The concept of net present value for evaluating investment proposals
- . The concept of duration, modified duration and convexity and their calculations
- . The concept of basis point value

Duration: 2 hours

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### **Time Value of Money**

**Topics covered include:**

- . The concept and importance of time value of money
- . The various methods to calculate the future and the present value of cash flows
- . The concept of future and present value of an annuity
- . The concept of amortization

Duration: 1.5 hours

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### **Bond Pricing**

**Topics covered include:**

- . The calculation of price of a option free bond
- . The price determination process when settlement date falls between two coupon periods
- . The different types of yield and the formula to calculate them
- . The price volatility characteristics of option free bonds

Duration: 1 hour

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### **Yield Curve Analysis**

**Topics covered include:**

- . The concept of yield curve and its types
- . The various theories under yield curve analysis
- . The types of interest rates and its computation
- . The applications of yield curve analysis

Duration: 1 hour

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### **Probability Distributions and Their Properties**

### **Measuring Volatility**

**Topics covered include:**

- . The concept of probability distributions
- . The different types of probability distributions
- . The properties of each of the distributions

Duration: 1 hour

**Topics covered include:**

- . The basic statistical measures and methods to compute them
- . Normal distribution and establishing the relationship between standard deviation and confidence level through a normal distribution function
- . The concept of volatility and its characteristics
- . The measures of risk exposures and the characteristics of financial asset price movements
- . The estimation of volatility using historical and implied volatility models

Duration: 1 hour

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**Correlation and Regression Analysis****Topics covered include:**

- . The concept of correlation and coefficient of correlation
- . The different types of correlation
- . The methods of measuring correlation
- . The concept of regression analysis
- . The methods of computing regression lines
- . The significance of standard error and the coefficient of determination

Duration: 1 hour

**JOB AIDS**

- . Measurement Tools

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**Language Options**

También, se ofrece este curso en Español. Llamada para más información.

For more information regarding administrative policies such as complaints and refunds, please contact our offices at 212-641-6616.