

COURSE DETAIL

FINANCIAL MATHEMATICS

Country

Ireland

Host Institution

University College Dublin

Program(s)

University College Dublin

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics

UCEAP Course Number

102

UCEAP Course Suffix**UCEAP Official Title**

FINANCIAL MATHEMATICS

UCEAP Transcript Title

FINANCIAL MATH

UCEAP Quarter Units

4.00

UCEAP Semester Units

2.70

Course Description

This course introduces financial and commodity derivatives markets and their most commonly traded securities. Securities such as forwards, futures, and options have been traded on exchanges, as well as "over the counter," for decades. The emphasis of this course is on the pricing of such derivative securities. The course starts by looking at future and forward contracts to understand their properties and differences and determine how to value them. After a detailed study of the different types of options, the valuation method of binomial trees (based on the Cox, Ross, and Rubenstein paper of 1979) is discussed. The course then studies the model of a share price evolution introduced by Black, Scholes, and Merton in 1973, and derives the Black-Scholes model for valuing European call and put options on a non-dividend-paying stock. A brief introduction to probability theory is also provided in the course.

Language(s) of Instruction

English

Host Institution Course Number

MST30030

Host Institution Course Title

FINANCIAL MATHEMATICS

Host Institution Campus

UC Dublin

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematical Studies

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