

# 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 Course Details

[https://sisweb.ucd.ie/usis/w\\_sm\\_web\\_inf\\_viewer\\_banner.show\\_module?p\\_subj=MST&p\\_...](https://sisweb.ucd.ie/usis/w_sm_web_inf_viewer_banner.show_module?p_subj=MST&p_...)

## Host Institution Campus

UC Dublin

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Mathematical Studies

**Course Last Reviewed**

2018-2019

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