# KentVision Code and title of the module

ECON8240 Advanced Topics in Financial Economics

# Division and School/Department or partner institution responsible for the module

Division of Human and Social Sciences, School of Economics

# The level of the module

Level 7

# The number of credits and the ECTS value which the module represents

15 credits (7.5 ECTS)

# Which term(s) the module is to be taught in (or other teaching pattern)

Autumn or Spring

# Delivery of the module

* 1. **Mode of study**

In person

* 1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

# Prerequisite and co-requisite modules and/or any module restrictions

None

# The course(s) of study to which the module contributes

* 1. **The module is compulsory for the following courses**

MSc Financial Economics

* 1. **The module is optional for the following courses**

MSc Economics

# A synopsis of the curriculum

The aim of this module is to study the theoretical foundations of the contemporary financial economics practice. The module consists of two main parts. In the first part, starting with the brief introduction to the probability theory and the stochastic calculus, we study the martingale asset pricing, which is a revolutionary idea in the derivative pricing. Because financial derivatives are often convoluted, it is difficult to evaluate their risk-premium explicitly. What is surprising in the martingale asset pricing is that it tells how to construct a hypothetical (but theoretically consistent) probability density, under which there is no risk-premium explicitly on any derivative prices. It rather takes into account the risk-premium implicitly by modifying the probability density. The other key issues we study include the Feynman-Kac stochastic representation and some practically important stochastic processes. In the second part, we study real options, which quite often arise in actual business scenes and real life. The examples of real options range from large scale capital investments to suicide. It turns out that when a decision is irreversible and the future is uncertain, the value of information is a homomorphism to financial options. As an informal prerequisite, the students are expected to be familiar with the reality of the actual financial markets, while they are not required more than high-school level math. The module emphasises the intuitions rather than rigorous math and offers some heuristics when they are useful.

# Contact Hours

Private Study: 120

Contact Hours: 30

Total: 150

# Learning and teaching methods

This module will be delivered via lectures and seminars.

# The intended subject specific learning outcomes

On successfully completing the module students will be able to:

12.1 Apply stochastic calculus and basic probability theory to analyse the risk-return profile of financial products

12.2 Comprehensively understand martingale asset pricing method and its key elements

12.3 Understand stochastic optimization and its application to the pricing of financial derivatives

12.4 Understand the leading bond pricing methodologies.

1. **The intended generic learning outcomes**

On successfully completing the module students will be able to:

13.1 Understand real world problems in light of statistics/probability theory and basic mathematics

13.2 Profoundly understand the trade-offs between risk and return

13.3 Write simple computer programmes to solves real world problems quantitatively.

1. **Assessment Strategy**
   1. **Main assessment methods**

Online Test x 2 (10% each)

Examination (2 hours): 80%

* 1. **How the assessment methods outlined above fit with the course assessment strategy?**

Online assessment based on single-solution questions offers practical training suitable to the analytical nature of the module. This is in accordance with the learning outcomes of the Financial Economics course and allows students to assess their knowledge before the heavier weighted final exams. Students can measure their progress through the online assessments and seek additional help as required.

* 1. **Reassessment methods**

100% Exam

# Mapping of Learning Outcomes

Map of module learning outcomes (sections 12 & 13) to learning and teaching methods (section 11) and methods of assessment (section 14).

* 1. **Module learning outcomes against learning and teaching methods**

| **Module learning outcome** | 12.1 | 12.2 | 12.3 | 12.4 | 13.1 | 13.2 | 13.3 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Lectures** | **x** | **x** | **x** | **x** |  | **x** |  |
| **Seminars** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

* 1. **Module learning outcomes against assessment methods**

| **Module learning outcome** | 12.1 | 12.2 | 12.3 | 12.4 | 13.1 | 13.2 | 12.3 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Online Test 1** | **x** | **x** |  |  | **x** | **x** | **x** |
| **Online Test2** | **x** |  | **x** | **x** | **x** | **x** | **x** |
| **Exam** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

# Reading list

The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

# Inclusive module design

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

**MODULE RECORD**

**All revisions for this module are recorded in the table below for student and staff information.**

| **Date approved** | **New/ Material/ Major/ Minor revision** | **Start date of delivery of this version** | **Applies to new cohorts and/ or existing students (for revised modules)** | **Sections revised (if applicable)** |
| --- | --- | --- | --- | --- |
| 20.06.2018 | Major | January 2020 | 8, 9, 10, 11 | No |
| 15.03.2021 | Minor | September 2020 | 13a, 14 | No |
| 17.11.2022 | Minor | September 2023 | 7, 8 | No |
| 27.10.23 | Major | September 2024 | New | 12,13, 14 |