SUBJECT DATASHEET

PRICING AND PRICE FORECASTING

BMEGT35M107

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
PRICING AND PRICE FORECASTING

ID (subject code) BMEGT35M107

Type of subject
Contact lessons

Course types and lessons

Type	*Lessons*
Lecture	4
Practice	0
Laboratory	0

Type of assessment
Mid-term grade

Number of credits
5

Subject Coordinator

Name	*Position*	*Contact details*
Dr. András Bethlendi	associate professor	bethlendi.andras@gtk.bme.hu

Educational organisational unit for the subject
Department of Finance

Subject website
edu.gtk.bme.hu

Language of the subject
angol – ENG

Curricular role of the subject, recommended number of terms
Programme: **Finance MSc (in English) from 2019/20/Term 1 AUTUMN start**
Subject Role: **Compulsory**
Recommended semester: **2**

Programme: **Finance MSc (in English) from 2019/20/Term 1 SPRING start**
Subject Role: **Compulsory**
Recommended semester: **1**

Direct prerequisites

Strong	None
Weak	None
Parallel	None
Exclusion	None

Validity of the Subject Description

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The course starts with the introduction to martingale theory in the relation to discounting, elaborating the difference between yield, forward and zero-coupon curves. Then the course turns to practical problems, the pricing of financial products with interest rate sensitivity such as bonds, swaps and futures. Besides, the curse highlights the problem of discount curve calibration and connects the optimization problem to duration and convexity. In practice, we call this kind of exercise as 'curve cooking'. The third part of the course gives insight into the different valuation adjustments (xVAs) used in the financial industry. Our primary goal is to familiarize students with the most important tools and to enable them to apply them individ-ually both in their studies and during their later work.

Academic results

Knowledge

1. • martingales,
2. • pricing of linear interest rate products,
3. • 'curve cooking',
4. • calculation of valuation adjustments

Skills

1. plan and organize independent learning,
2. • comprehend and use the professional literature of the topic,
3. • using methods learn they could perform calculations to support decision-making

Attitude

1. • is open to getting to know and adapting innovations in the financial field,
2. • collaborates with their instructors and others during the learning process,
3. • gains knowledge and information,
4. • uses the possibilities offered by IT tools.

Independence and responsibility

1. The audience
2. • is open to accept constructive criticism,
3. • collaborates with others to solve problems during the learning process,
4. • could make prudent financial decision,

Teaching methodology

Lectures, written and oral communication, use of IT tools and techniques, optional tasks alone and in groups.

Materials supporting learning

- 1. Az előadások prezentációinak anyaga, ami a félév során folyamatosan fog feltöltésre kerülni.
- 2. Hull, John C. Options futures and other derivatives
- 3. Baz, Jamil, and George Chacko.
- 4. Fujii, Masaaki, Yasufumi Shimada, and Akihiko Takahashi.
- 1. Material will be uploaded continously during the semester.
- 2. MateriHull, John C. Options futures and other derivatives
- 3. Baz, Jamil, and George Chacko.
- 4. Fujii, Masaaki, Yasufumi Shimada, and Akihiko Takahashi.

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

Assessment of the learning outcomes described under 2.2. is based on two written end-term tests.

Performance assessment methods

Based on written end-term tests and homework.

Percentage of performance assessments, conducted during the study period, within the rating

Percentage of exam elements within the rating

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	>90
Very good	86–90
Good	71–85
Satisfactory	61–70
Pass	50–60
Fail	<50

Retake and late completion

The written tests can be retaken in the exam period.

Coursework required for the completion of the subject

56

40

54

150

Approval and validity of subject requirements

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

Subject includes the topics detailed in the course syllabus to ensure learning outcomes listed under 2.2. can be achieved. Timing of the topics will be arranged by the calendar or other circumstances in each semester.

1 Martingales: concept, examples, basic features

2 Martingale Measures: arbitrage and martingale, complete markets

3 Linear interest rate products: bulding up discount rate (curve 'cooking'), pricing methodes,bonds, swaps

4 Valuation adjustments (xVAs)

5 Capital valuation adjustment

6 Funding adjustment

7 Credit adjustment

Additional lecturers

Dr. László Nagy nagy.laszlo@gtk.bme.hu

Approval and validity of subject requirements