



SUBJECT DATASHEET

DERIVATIVES AND REAL OPTIONS

BMEGT35M122

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name

DERIVATIVES AND REAL OPTIONS

ID (subject code) BMEGT35M122

Type of subject

Contact lessons

Course types and lessons

<i>Type</i>	<i>Lessons</i>
Lecture	2
Practice	0
Laboratory	0

Type of assessment

mid-term
grade

Number of credits

3

Subject Coordinator

<i>Name</i>	<i>Position</i>	<i>Contact details</i>
Dr. Andrea Toto	senior lecturer	toto.andrea@gtk.bme.hu

Educational organisational unit for the subject

Department of Finance

Subject website

<https://edu.gtk.bme.hu/>

Language of the subject

angol – ENG

Curricular role of the subject, recommended number of terms

Direct prerequisites

Strong None

Weak None

Parallel None

Exclusion None

Validity of the Subject Description

Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 580269/9/2025 registration number. Valid from: 26.03.2025.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

In the last 40 years, derivatives have become increasingly important in finance and investments. Futures and options are actively traded on many exchanges throughout the world. Many different types of forward contracts, swaps, options, and other derivatives are entered into by financial institutions, fund managers, and corporate treasurers in the over-the counter market. Derivatives are added to bond issues, used in executive compensation plans, embedded in capital investment opportunities, used to transfer risks in mortgages from the original lenders to investors, and so on. The markets for these versatile instruments have grown enormously and have generated a profusion of innovative products and ideas, not to mention periodic crises. Derivatives have become one of the most important tools of modern finance, from both the academic and the practical standpoint. Objectives: This course is designed • to introduce Finance students to the theoretical and practical aspects of financial futures, options, and other derivatives. The subject matter requires relatively greater use of quantitative methods and theoretical reasoning than many other business courses, and some students may find it challenging. • to develop own intuition. The main objective of this course is to understand the principles of how these important instruments and markets work, to help students gain the intuition and to provide the necessary skills for pricing and hedging of derivative securities, and for using them for investment, risk management, and prediction purposes. • The agenda partly covers the CFA Program Curriculum Volume 5, Level I-II-III.

Academic results

Knowledge

1. The audience will be familiar with:
2. derivatives and their characteristics;
3. options, futures, swaps contracts and their valuation;
4. credit derivatives markets and instruments;
5. real options.

Skills

1. define characteristics of options, futures, and other derivatives based on market data;
2. understand and process market information and special literature relating to the topic;
3. valuing option, futures and swap contracts,
4. use different strategies with derivatives,
5. perform calculations to support decision-making.

Attitude

1. are open to getting to know and adapting derivatives,
2. collaborate with their instructors and others during the learning process,
3. gain knowledge and information,
4. use the possibilities offered by IT tools

Independence and responsibility

1. are open to accept constructive criticism,
2. collaborate with others to solve problems during the learning process,
3. could make responsible investment decisions,
4. understand the importance and weight of responsibility and can assess the consequences of decisions.

Teaching methodology

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

Materials supporting learning

- Kötelező/ Obligatory:
- Slideshows of the lectures which will be uploaded continuously during the semester.
- Zvi Bodie-Alex Kane-Alan J. Marcus, Investments, 11th Edition, MacGrawHill, 2018
- Ajánlott/Recommended:
- John C. Hull, Options, Futures and Other Derivatives, 9th edition, Pearson, 2015

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

Assessment of the learning outcomes described under 2.2. is based on an end-term exam. The mandatory ho-mework affects the outcome (35%). Final grade is a weighted average of: mandatory homework (35%) and end-term exam (65%).

Performance assessment methods

A. Detailed description of mid-term performance assessments: Condition for valid exam: The summarizing study performance test's result should reach the 40% mini-mum level at least. Homework can only be validated in the total scores if this condition is fulfilled.-
The

complex written assessment of knowledge and skill competencies of the subject is based on one end-term tests during the semester. The tests focus on practical adaptation of the knowledge students gained in the learning process, which does not exclude testing theoretical knowledge. The parts of the learning material for the tests are selected by the lecturer of the subject. Working time for test writing is 90 minutes. B. Detailed description of examination performance assessments: The written final exam test: Duration: 90 minutes The assessment of knowledge and skill competencies of the subject is based on the written final exam test. The tests focuses on the practical adaptation of the knowledge students gained in the learning process, which does not exclude testing the theoretical knowledge. The sections of the learning material for the exam test are selected by the lecturer of the subject.

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

- Mandatory homework : 35
- Summarizing study performance tests : 65

Percentage of exam elements within the rating

- ester-end written exam: 65

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	90
Very good	80-90
Good	70–80
Satisfactory	60-70
Pass	50-60
Fail	<50

Retake and late completion

There will be one retake test possibility if the first test did not reach the expected 40%.

Coursework required for the completion of the subject

participation on contact lessons	24
mandatory homework	10
preparing for the exam	56
Total	90

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 03.03.2025.

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 may be affected by calendar or other circumstances in each semester

- 1 Types of Derivative Instruments and Their Characteristics
- 2 Options Markets: The Option Contract, Option Strategies, Option-Like Securities
- 3 Option Valuation
- 4 Mechanics of Futures Markets
- 5 Determination of Forward and Futures Prices
- 6 Futures, Swaps and Risk Management 1: Foreign Exchange Futures, Stock-Index Futures
- 7 Futures, Swaps and Risk Management 2: Interest Rate Futures, Commodity Futures Pricing
- 8 Swaps 1: Mechanics of Interest Rate Swaps
- 9 Swaps 2: Swap Pricing
- 10 Credit Derivatives Markets and Instruments: CDS, CDO
- 11 Real Options
- 12 End-Term Exam

Additional lecturers

Approval and validity of subject requirements