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# Reforming Master Programmes in Finance in Armenia and Moldova/REFINE

An Erasmus+ Capacity Building Project (2017-2020)

**Topic: Course Package “Investment portfolio management”**

**Speaker: Svetlana Bilooaia, PhD, Associate Professor, AESM**



# General information about the course



<b>Title of the course</b>	<b>“Investment portfolio management”</b>
<b>Name of the teacher</b>	Svetlana Biloochaia
<b>Novelty of the course (please select as appropriate)</b>	This course is an updated and revised version of a course which already existed in the curriculum
<b>Year of the course in the curriculum</b>	1 <sup>st</sup> year
<b>Semester of the course in the curriculum</b>	2 <sup>nd</sup> semester
<b>Language of instruction of the course</b>	English
<b>Number of ECTS credits</b>	5
<b>Total number of hours</b>	150
<b>Hours for individual activity</b>	102
<b>Number of class hours</b>	48
<b>Number of lectures hours</b>	32
<b>Number of seminars hours</b>	16

# This course provides as a result of learning the following outcomes:



- Understand the main concepts of modern portfolio theories and their implications for portfolio construction and management as well as risk management practices.
- Understand the rationale for the asset allocation decision, securities selection and market timing.
- Understand and apply main portfolio management and risk concepts and techniques. Comprehend and measure the effect of portfolio diversification.
- Understand the basic mathematical and statistical methods commonly used to value financial securities, apply different models and methods for equities, bonds and derivatives evaluation and measure of portfolio performance.
- Understand and use various techniques regarding technical analysis and fundamental analysis.

# SYLLABUS OF THE COURSE



WEEK	TOPIC
1	<b>Topic 1. Investment portfolio fundamentals</b>
1	<b>Topic 2. Investment risk and return</b>
1	<b>Topic 3. Basic theories of investment portfolio construction</b>
1	<b>Topic 4. Evaluation of shares</b>
1	<b>Topic 5. Evaluation of bonds</b>
2	<b>Topic 6. Derivative securities analysis</b>
2	<b>Topic 7. Strategies of investment portfolio management</b>
2	<b>Topic 8. Evaluation of the investment portfolio performance</b>
3	<b>Topic 9. Fundamental analysis in investment portfolio management</b>
3	<b>Topic 10. Technical analysis in portfolio management</b>

# Units of content and indicative allocation of hours



Nr.	Units of content	Hours		
		Lectures	Seminars	Individual work
1.	Topic 1. Investment portfolio fundamentals	2	1	10
2.	Topic 2. Investment risk and return	4	2	11
3.	Topic 3. Basic theories of investment portfolio construction	3	1	11
4.	Topic 4. Evaluation of shares	3	2	10
5.	Topic 5. Evaluation of bonds	4	2	10
6.	Topic 6. Derivative securities analysis	3	2	11
7.	Topic 7. Strategies of investment portfolio management	3	1	9
8.	Topic 8. Evaluation of the investment portfolio performance	4	2	9
9.	Topic 9. Fundamental analysis in investment portfolio management	3	2	10
10.	Topic 10. Technical analysis in portfolio management	3	1	11
	<b>Total</b>	<b>32</b>	<b>16</b>	<b>102</b>

# SYLLABUS OF THE COURSE



Week	Day/Hour	Hour 1	Hour 2	Hour 3	Hour 4
Week 1	Day 1	Topic 1	Topic 1	Topic 2	Topic 2
	Day 2	Topic 2	Topic 2	Topic 3	Topic 1
	Day 3	Topic 3	Topic 3	Topic 2	Topic 2
	Day 4	Topic 4	Topic 4	Topic 4	Topic 3
	Day 5	Topic 5	Topic 5	Topic 5	Topic 5
Week 2	Day 6	Topic 6	Topic 6	Topic 4	Topic 4
	Day 7	Topic 6	Topic 7	Topic 5	Topic 5
	Day 8	Topic 7	Topic 7	Topic 6	Topic 6
	Day 9	Topic 8	Topic 8	Topic 8	Topic 7
	Day 10	Topic 8	Topic 9	Topic 8	Topic 8
Week 3	Day 11	Topic 9	Topic 9	Topic 10	Topic 9
	Day 12	Topic 10	Topic 10	Topic 9	Topic 10

Legend:

Lecture

Seminar

# WEEK 1



## DAY 1

### Lecture

#### *Topic 1. Investment portfolio fundamentals*

1.1. The concepts of investment portfolio and its management.

1.2. Investment vehicles for portfolio construction.

1.3. Steps in portfolio management process.

#### *Topic 2. Investment risk and return*

2.1. Investment risk fundamentals, classification, features of management.

2.2. General concepts of investment return.

2.3. Methods of investment risks evaluation.

# WEEK 1

## DAY 2

### Lecture

#### ***Topic 2. Investment risk and return***

2.1. Investment risk fundamentals, classification, features of management.

2.2. General concepts of investment return.

#### **2.3. Methods of investment risks evaluation.**

#### ***Topic 3. Basic theories of investment portfolio construction***

#### **3.1. Markowitz portfolio theory.**

3.2. Capital Asset Pricing Model (CAPM).

3.3. Arbitrage Pricing Theory (APT).

3.4. Market efficiency theory.

### **Seminar (Topic 1)**

#### ***Questions for discussion, reporting and problems solution:***

- investment portfolio definition, classifications, types of financial instruments for investing;
- types of investors, the influence of investor's risk tolerance, time frame and investment objectives on investment portfolio design;
- main steps in investment portfolio formation.





# WEEK 1



## DAY 3

### Lecture

#### ***Topic 3. Basic theories of investment portfolio construction***

3.1. Markowitz portfolio theory.

**3.2. Capital Asset Pricing Model (CAPM).**

**3.3. Arbitrage Pricing Theory (APT).**

**3.4. Market efficiency theory.**

### **Seminar (Topic 2)**

#### ***Questions for discussion, reporting and problems solution:***

- fundamentals of investment risk, the scopes of risk management process, the main activities included in risk management framework;
- the main methods of return calculation;
- measures of risk based on such indicators as: standard deviation, variance, beta, covariance, correlation etc.

# WEEK 1



## DAY 4

### Lecture

#### *Topic 4. Evaluation of shares*

#### 4.1. Fundamentals of shares assessment, the main methods of equity estimation.

#### 4.2. Equity valuation based on discounted cash flow analysis.

#### 4.3. Relative valuation techniques.

### Seminar (Topic 3)

#### *Questions for discussion, reporting and problems solution:*

- fundamentals of Markowitz portfolio theory, indifference curves, efficient frontier, Capital Market Line;
- the evolution of the main theories regarding portfolio investments,
- Capital asset pricing model, CML, SML etc.
- The efficient-market hypothesis.

# WEEK 1

## DAY 5

### Lecture

#### *Topic 5. Evaluation of bonds*

#### 5.1. Fundamentals of fixed income securities estimation.

#### 5.2. Bond's value determination.

#### 5.3. Estimation of bond's *yield*.

#### 5.4. Duration of a bond.



# WEEK 2



## DAY 6

### Lecture

#### *Topic 6. Derivative securities analysis*

#### 6.1. Derivatives fundamentals, scopes of their application in investment portfolio management.

#### 6.2. Futures contracts basic valuation concepts and strategies.

6.3. The fundamentals of option valuation, main option strategies.

### Seminar (Topic 4)

#### *Questions for discussion, reporting and problems solution:*

- the fundamentals of shares evaluation, intrinsic value estimation;
- methods of equity estimation (discounted cash flow method (e.g. dividend discount models), free cash flow to equity);
- Price-earnings (P/E) ratio; Price-sales (P/S) ratio; Price-book value (P/B) ratio; Price-cash flow (P/CF) ratio etc.;
- the features of preferential share valuation.

# WEEK 2

## DAY 7

### Lecture

#### ***Topic 6. Derivative securities analysis***

6.1. Derivatives fundamentals, scopes of their application in investment portfolio management.

6.2. Futures contracts basic valuation concepts and strategies.

**6.3. The fundamentals of option valuation, main option strategies.**

#### ***Topic 7. Strategies of investment portfolio management***

**7.1. Investment portfolio strategies: fundamentals, classifications, features.**

7.2. Equity portfolio management strategies.

7.3. Bond portfolio management strategies.

### **Seminar (topic 5)**

#### ***Questions for discussion, reporting and problems solution:***

- coupon bonds valuation, consols, zero-coupon bonds pricing;
- yield to maturity, current yield, yield-to-call, realized compound yield, effective annual rate of bonds;
- fundamentals of duration, modified duration, effective duration etc.



# WEEK 2



## DAY 8

### Lecture

#### ***Topic 7. Strategies of investment portfolio management***

7.1. Investment portfolio strategies: fundamentals, classifications, features.

**7.2. Equity portfolio management strategies.**

**7.3. Bond portfolio management strategies.**

### Seminar (topic 6)

#### ***Questions for discussion, reporting and problems solution:***

- features and scopes of derivatives application in portfolio management;
- valuation concepts of futures, options contracts;
- main strategies with derivatives and their underlying assets.

# WEEK 2



## DAY 9

### Lecture

#### *Topic 8. Evaluation of the investment portfolio' performance*

##### 8.1. Portfolio performance: concept and influence factors.

##### 8.2. The measurement and evaluation of investment performance.

##### 8.3. Composite portfolio performance measures.

### Seminar (topic 7)

#### *Questions for discussion, reporting and problems solution:*

- the strategies of investment portfolio formation;
- active and passive investing peculiarities: essence, techniques, key benefits, risks;
- analysis of perspectives of using different strategies for bonds and equities portfolios (“buy and hold”, index matching, cash flow matching, immunization, laddering etc.).

# WEEK 2



## DAY 10

### Lecture

#### ***Topic 8. Evaluation of the investment portfolio' performance***

- 8.1. Portfolio performance: concept and influence factors.
- 8.2. The measurement and evaluation of investment performance.
- 8.3. Composite portfolio performance measures.**

#### ***Topic 9. Fundamental analysis in investment portfolio management***

##### **9.1. The concept of fundamental analysis.**

- 9.2. Macroeconomic analysis.
- 9.3. Industry analysis.
- 9.4. Fundamental analysis at the company level.

### **Seminar (topic 8)**

#### ***Questions for discussion, reporting and problems solution:***

- fundamentals of performance estimation;
- features of performance estimation against benchmark;
- risk-adjusted performance appraisal measures, composite portfolio performance measures Treynor index, Sharpe Index, Jensen index etc.



# WEEK 3



## DAY 11

### Lecture

#### ***Topic 9. Fundamental analysis in investment portfolio management***

9.1. The concept of fundamental analysis.

#### **9.2. Macroeconomic analysis.**

#### **9.3. Industry analysis.**

#### **9.4. Fundamental analysis at the company level.**

#### ***Topic 10. Technical analysis in portfolio management***

#### **10.1. The essence of technical analysis, its principles and assumptions.**

10.2. Types of Charts utilized in technical analysis and their features.

10.3. Technical Indicators (Moving Average, Bollinger Bands, RSI etc.)

10.4. Elliott Wave Theory and Fibonacci sequence.

### **Seminar (topic 9)**

#### ***Questions for discussion, reporting and problems solution:***

- concept of fundamental analysis, its factors, indicators and methods;
- the features of fundamental analysis at macroeconomic and microeconomic levels.

# WEEK 3



## DAY 12

### Lecture

#### ***Topic 10. Technical analysis in portfolio management***

10.1. The essence of technical analysis, its principles and assumptions.

**10.2. Types of Charts utilized in technical analysis and their features.**

**10.3. Technical Indicators (Moving Average, Bollinger Bands, RSI etc.)**

**10.4. Elliott Wave Theory and Fibonacci sequence.**

### **Seminar (topic 9)**

#### ***Questions for discussion, reporting and problems solution:***

- the features or fundamental analysis at macroeconomic and microeconomic levels, industry analysis.

### **Seminar (topic 10)**

#### ***Questions for discussion, reporting and problems solution:***

- fundamentals of technical analysis, its key assumptions and instruments;
- trendline, patterns, indicators (moving average, bollinger bands, oscillators, RSI etc.), sense of Elliott Wave Theory and Fibonacci sequence.

# Teaching methodology of the course



## *Teaching techniques and methods:*

- Forms of organization: group.
- Course involves utilisation of ***student-centred*** learning approach, including: Problem-based learning method, case study, discussion, seminar, essay elaboration, lectures, debate, panels, brainstorming, one-minute paper etc.
- Teaching aids: projector, computer, etc.

All lectures are sent to students on the group's e-mail from the lecturer's e-mail in the day before lesson presentation.

Materials for student's individual work are sent to personal student's mail.

Each week professor has two hours for individual students' consultation.

At the beginning of the course students are informed about lecturer's office hours, which depend from the lecturer's schedule of lectures/seminars and are specified each academic year.

# Labour market relevance of the course



The *purpose* of the *Investment Portfolio Management* course is to train specialists in the field of investment and capital market with the necessary skills and competencies in order to build a solid foundation for the development of a successful career in accordance with the requirements of potential employers; meetings with potential employers are organized regularly by the Faculty of Finance, ASEM.

# Labour market relevance of the course



Having studied the course of *Investment Portfolio Management* master students demanded the labour market of the Republic of Moldova by such employers as:

- financial investment companies;
- investment advisory companies;
- national and international investment projects;
- regulated market operators and multilateral trading systems;
- commercial and central banks;
- Ministry of Finance; non-banking financial institutions; Central Depository;
- companies qualified in the valuation of securities;
- registry companies; insurance companies;
- financial departments of public institutions and private companies;
- central and local public administration entities;
- educational institutions, etc.

as specialists in: consulting and investment assistance; training and management of investment portfolios; developing and implementing business plans for investment projects; executing orders on financial instruments both on behalf of clients and on their own, including on Forex markets; intermediation on the underwriting / placement of financial instruments; valuation of financial securities; servicing state debt contracted through state securities; capital investments from the Ministry of Finance and companies in the real sector of the economy, as well as investment experts and auditors, financial analysts, heads and officials of the central and local public administration, managers in economic and financial units, teaching staff in education, etc.

# Course assignments

## Assignment 1



### To elaborate an essay

For this individual work, students can choose a question from any Topic.

Student's investigation has to comprise 6-8 pages, including 2-3 pages where are described main theoretical aspects regarding the question, next pages have to comprise actual facts, as well as figures, schemes, tables elaborated by the student, which must be made based on up to date information, statistical data etc., with an explanation of student's views on a particular subject or issue, resulted in conclusions and recommendations and bibliography.

Students who chose questions from the same topic can form groups and work in teams.

***The essay must be presented to the audience during seminar.***

# Course assignments

## Assignment 1



### Essay

Essay writing allows an author to learn: clear and correctly formulate ideas, organize information, use the basic theoretical concepts, allocate causal relations, illustrate the experience of relevant examples to argue their conclusions.

The essay makes it clear to the lecturer how the student was able to present his thoughts, how he described his conclusions and recommendations etc.

# Course assignments

## Assignment 2



### Case study

To elaborate, taking in consideration own risk tolerance, the optimal risk/return investment portfolio, using:

- existed investments alternatives in the Republic of Moldova, with time frame – 1 year (e.g. 2018),

or

- investments alternatives from sites <https://www.nasdaq.com/>, <https://www.bloomberg.com/europe> etc., with time frame – period of lessons.

Investment portfolio has to comprise at least 3 financial instruments with different share\weight (bonds, equities etc.).

Indicators have to be calculated in case study, are: return of each financial instrument from portfolio, portfolio return, some risks indicators (standard deviation, variance etc.), Sharp index etc.

Students also have to describe and analyse in case study the main financial and non-financial risks of financial instruments from portfolio.



# ASSESSMENT AND GRADING



<p><i>Current performance</i></p>	<p>The current evaluation includes the assessment of case studies and reports, students' work on seminars, demonstrated knowledge of the topic's content.</p>	
<p><i>Final assessment</i></p>	<p>The final assessment is carried out in written form and consists of different types of topics: multiple choice tests, open questions, integration questions and problems.</p>	
<p><i>General mark/grade (share part expressed in %)</i></p>	<p><b>Current performance (formative assessment)</b> Including: 20% case study, 10% essey elaboration and presentation, 30% students' work on seminars, demonstrated knowledge of the topic's content</p>	<p><b>60%</b></p>
	<p><b>Examination mark (final evaluation)</b></p>	<p><b>40%</b></p>

# References



## **Legal framework:**

1. Law RM on investments in the entrepreneurship activity Nr. 81-XV from 18.03.2003 ,Monitorul Oficial al Republicii Moldova Nr. 64-66 din 23.04.2003
2. Law on the capital market no. 171 from 11.07.2012, Monitorul Oficial al R.Moldova Nr. 193-197 from 14.09.2012
3. Law on Joint Stock companies no. 1134-XIII from 02.04.97, Monitorul Oficial al R. Moldova nr.1-4/1 din 01.01.2008
4. Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (*MiFID II*).

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**Thank you for your attention!**

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