Co-funded by the Erasmus+ Programme of the European Union

Reforming Master Programmes in Finance in Armenia and Moldova / REFINE

An Erasmus+ Capacity Building Project (2017-2020)

THE COURSE INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT OVERVIEW

University- Armenian State University of Economics

Teacher- Edgar Aghabekyan

BASIC INFORMATION

TITLE OF THE COURSE	**Investment analysis and portfolio management**
TEACHERS	Edgar Aghabekyan
YEAR OF THE COURSE	1st
SEMESTER OF THE COURSE	2st
LANGUAGE	Armenian
NUMBER OF ECTS CREDITS	5

LEARNING OUTCOMES

- research the investment environment, different types of financial investment instruments and financial institutions;
- analyse and evaluate the investment purposes, the efficiency of key stages of the investment process;
- calculate the risk and expected return of various financial instruments and investment portfolios;
- implement in practice the quantitative methods of investment decision making;
- apply the principles of portfolio theory in the process of investment portfolio management;
- analyse and evaluate the fair value of stocks and bonds, explain the main factors affecting the values;
- use financial derivatives in the investment management process
- distinguish between active and passive investment strategies; apply those strategies in practice;
- assess the efficiency of portfolio management;
- use Excel's software skills during investment analysis and portfolio management calculations and researches.

SYLLABUS OF THE COURSE

WEEK	TOPIC
1-2	Investors and investment process
3-6	Portfolio theory and practice
7-8	Analysis and Management of Bonds
9-10	Analysis and Management of Common Stocks
11-12	Using Financial Derivatives in Portfolio Management
13-14	Portfolio Performance Evaluation

1-2 Weeks
Topic 1. Investors and investment process

- The Investment environment
- Asset Classes and financial Instruments
- Trading process and strategies
- Individual and institutional investors
- Investment management process
- The Efficient Market Hypothesis
- Behavioural Finance and Technical Analysis

1.1. The Investment environment

- Real and financial assets
- Financial markets

1.2.Asset Classes and financial Instruments

- The Money Market instruments
- The Bonds
- Equity Securities
- Stock and Bond Market Indexes
- Derivatives

1.3.Trading process and strategies

- Types of Markets
- The Rise of Electronic Trading
- New Trading Strategies
- Trading Costs
- Buying on Margin
- Short Sales
- Regulation of Securities Markets

1.4. Individual and institutional investors

- Banks
- Insurance companies
- Investment funds
- Pension funds
- Individual investors

1.5. Investment management process

- Setting of investment policy
- Analysis and evaluation of investment vehicles
- Formation of diversified investment portfolio
- Portfolio revision
- Measurement and evaluation of portfolio performance

1.6. The Efficient Market Hypothesis

- Random Walks and the Efficient Market hypothesis
- Implications of the EMH
- Event Studies
- Are Markets Efficient?
- The Issues
- The Magnitude Issue
- The Selection Bias Issue
- The Lucky Event Issue
- Weak-Form Tests: Patterns in Stock Returns, Mutual Fund and Analyst Performance

1.7. Behavioural Finance and Technical Analysis

- The Behavioural Critique
- Technical Analysis and Behavioural Finance
- Trends and Corrections
- Momentum and Moving Averages
- Relative Strength, Breadth, Sentiment Indicators

3-6 Weeks

Topic 2. Portfolio theory and practice

- Quantitative methods of investment analysis
- Capital Allocation to Risky Assets
- Optimal Risky Portfolios
- Index Models
- The Capital Asset Pricing Model
- Arbitrage Pricing Theory and Multifactor Models of Risk and Return

2.1. Quantitative methods of investment analysis

- Determinants of the level of Interest Rates,
- Real and Nominal Rates of Interest
- Taxes and the Real Rate of Interest
- Comparing Rates of Return for Different Holding Periods
- Risk and Risk Premiums
- Time Series Analysis of Past Rates of Return
- The Normal Distribution
- Deviations from Normality and Risk Measures
- Historic Returns on Risky Portfolios
- Investment risk, Variance and standard deviation
- Relationship between risk and return
- Covariance, Correlation and Coefficient of determination
- Relationship between the returns on stock and market portfolio
- Characteristic line and Beta factor
- Residual variance.

2.2. Capital Allocation to Risky Assets

- Risk and Risk Aversion
- Capital Allocation across Risky and Risk-Free Portfolios
- The Risk-Free Asset
- Portfolios of One Risky Asset and a Risk-Free Asset
- Risk Tolerance and Asset Allocation
- Passive Strategies: The Capital Market Line

2.3. Optimal Risky Portfolios

- Diversification and Portfolio Risk
- Portfolios of Two Risky Assets
- Asset Allocation with Stocks, Bonds, and Bills
- The Markowitz Portfolio Optimization Model

2.4. Index Models

- A Single-Factor Security Market
- The Input List of the Markowitz Model
- Normality of Returns and Systematic Risk
- The Single-Index Model
- The Regression Equation of the Single-Index Model
- The Expected Return–Beta Relationship, Risk and Covariance in the Single-Index Model
- The Set of Estimates Needed for the Single-Index Model
- The Index Model and Diversification
- Estimating the Single-Index Model
- The Estimate of Alpha, The Estimate of Beta, Firm-Specific Risk, Correlation and Covariance Matrix
- Portfolio Construction and the Single-Index Model
- Alpha and Security Analysis
- The Index Portfolio as an Investment Asset
- The Optimal Risky Portfolio in the Single-Index Model
- The Information Ratio
- Summary of Optimization Procedure
- Practical Aspects of Portfolio Management with the Index Model

2.5. The Capital Asset Pricing Model

- The Capital Asset Pricing Model
- The Risk Premium of the Market Portfolio
- Expected Returns on Individual Securities
- The Security Market Line
- Assumptions and Extensions of the CAPM
- Labor Income and Nontraded Assets
- A Multiperiod Model and Hedge Portfolios
- A Consumption-Based CAPM
- Liquidity and the CAPM
- The CAPM- the Academic World and the Investment Industry.

2.6. Arbitrage Pricing Theory and Multifactor Models of Risk and Return

- Multifactor Models: An Overview. Factor Models of Security Returns
- Arbitrage Pricing Theory
- Arbitrage, Risk Arbitrage, and Equilibrium
- Well-Diversified Portfolios
- Diversification and Residual Risk in Practice
- Executing Arbitrage
- The No-Arbitrage Equation of the APT
- The APT, the CAPM, and the Index Model
- A Multifactor APT
- The Fama-French (FF) Three-Factor Model.

7-8 Weeks
Topic 3. Analysis and Management of Bonds

- Bond Prices and Yields
- The Term Structure of Interest Rates
- Bond Portfolio Management Strategies

3.1. Bond Prices and Yields

- Bond Characteristics
- Accrued Interest and Quoted Bond Prices
- Bond Pricing
- Bond Pricing between Coupon Dates
- Yield to Maturity
- Yield to Call
- Realized Compound Return versus Yield to Maturity
- Bond Prices over Time
- Yield to Maturity versus Holding-Period Return
- Zero-Coupon Bonds and Treasury Strips
- After-Tax Returns
- Default Risk and Bond Pricing
- Determinants of Bond Safety
- Yield to Maturity and Default Risk
- Credit Default Swaps
- Credit Risk and Collateralized Debt Obligations,

3.2. The Term Structure of Interest Rates

- The Yield Curve
- The Yield Curve and Future Interest Rates
- The Yield Curve under Certainty
- Holding-Period Returns
- Forward Rates
- Interest Rate Uncertainty and Forward Rates
- Theories of the Term Structure
- Interpreting the Term Structure
- Forward Rates as Forward Contracts

3.3. Bond Portfolio Management Strategies

- Interest Rate Risk
- Interest Rate Sensitivity
- Duration
- Convexity
- Passive Bond Management

- Buy-and-Hold Strategy
- Indexing Strategy Immunization
- Cash Flow Matching and Dedication

- Active Bond Management
- Sources of Potential Profit
- Interest Rate Anticipation
- Valuation Analysis
- Credit Analysis
- Yield Spread Analysis
- Core-Pus Management
- Matched –funding management
- Dedicated Portfolios
- Immunization Strategies
- Horizon Matching
- Contingent Immunization

9-10 Weeks
Topic 4. Analysis and Management of Common Stocks

- Macroeconomic and Industry Analysis
- Financial Statement Analysis
- Equity Valuation Models

4.1. Macroeconomic and Industry Analysis

- Macro market analysis
- Economic Activity and Security Markets
- Economic Series and Stock Prices
- The Cyclical Indicator Approach
- Monetary Variables
- The Economy and Stock Prices
- Money Supply and the Economy
- Money Supply and Stock Prices
- Monetary Policy and Stock Returns
- Inflation, Interest Rates, and Security Prices
- Industry Analysis
- Cross-Sectional Industry Performance
- Industry Performance over Time
- Performance of the Companies within an Industry
- Differences in Industry Risk
- The business cycle and industry sectors
- Structural economic changes and alternative industries, industry life cycle analysis
- Analysis of industry competition
- Global industry analysis

4.2. Financial Statement Analysis

- The Major Financial Statements
- Measuring Firm Performance
- Profitability Measures
- Ratio Analysis
- Market Price Ratios: Growth versus Value
- Comparability Problems

4.3. Equity Valuation Models

- Valuation by Comparable
- Limitations of Book Value
- Intrinsic Value versus Market Price
- Dividend Discount Models
- The Constant-Growth DDM
- Stock Prices and Investment Opportunities
- Life Cycles and Multistage Growth Models
- Multistage Growth Models
- The Price–Earnings Ratio and Growth Opportunities
- P/E Ratios and Stock Risk
- Pitfalls in P/E Analysis
- Combining P/E Analysis and the DDM
- Other Comparative Valuation Ratios
- Free Cash Flow Valuation Approaches
- Comparing the Valuation Models
- The Problem with DCF Models

11-12 Weeks
Topic 5. Using Financial Derivatives in Portfolio Management

- An Introduction to Derivative Markets and Securities
- Forward and Futures Contracts
- Option Contracts
- Swap Contracts, Convertible Securities, and Other Embedded Derivatives

5.1. An Introduction to Derivative Markets and Securities

- The Language and Structure of Forward and Futures Markets
- The Language and Structure of Option Markets
- The Basic Nature of Derivative Investing
- Basic Payoff and Profit Diagrams for Forward Contracts
- Basic Payoff and Profit Diagrams for Call and Put Options
- Put-Call-Spot Parity
- Creating Synthetic Securities Using Put-Call Parity
- Restructuring Asset Portfolios with Forward Contracts
- Protecting Portfolio Value with Put Options
- An Alternative Way to Pay for a Protective Put

5.2. Forward and Futures Contracts

- Futures Contract Mechanics
- Comparing Forward and Futures Contracts
- Hedging with forwards and futures
- Hedging and the Basis
- Understanding Basis Risk
- Calculating the Optimal Hedge Ratio
- Valuing Forwards and Futures
- The Relationship between Spot and Forward Prices
- Interest Rate Forwards and Futures
- Long-Term Interest Rate Futures
- Short-Term Interest Rate Futures
- Stock Index Futures
- Currency Forwards and Futures,

5.3. Option Contracts

- Option Market Conventions
- Price Quotations for Exchange-Traded Options
- The fundamentals of option valuation
- The Binomial Option Pricing Model
- The Black-Scholes Valuation Model
- Estimating Volatility
- Call Option Valuation
- Put Option Valuation
- Hedge Ratios and the Black-Scholes Formula
- Portfolio Insurance
- Option Pricing and Portfolio Theory
- Hedging Bets on Mispriced Options
- Option trading strategies

5.4. Swap Contracts, Convertible Securities, and Other Embedded Derivatives

- Forward-Based Interest Rate Contracts
- Option-Based Interest Rate Contracts
- Swap contracting extensions
- Equity Index-Linked Swaps
- Credit-Related Swaps
- Warrants
- Convertible Securities
- Other embedded derivatives,

13-14 Weeks
Topic 6. Portfolio Performance Evaluation

- Monitoring and revision of the portfolio
- Portfolio performance measures

6.1. Monitoring and revision of the portfolio

- Portfolio revision
- Investor's portfolio monitoring
- Rebalancing a portfolio
- Constant proportion portfolio
- Constant Beta portfolio
- Indexing

6.2. Portfolio performance measures

- Early performance measurement techniques
- Composite portfolio performance measures
- Average Rates of Return
- Adjusting Returns for Risk
- The M 2 Measure of Performance
- Treynor Portfolio Performance Measure
- Sharpe Portfolio Performance Measure
- Jensen Portfolio Performance Measure
- The Information Ratio Performance Measure
- Comparing the Composite Performance Measures
- Application of portfolio Performance Measures
- Components of Investment Performance
- Performance Measurement with Downside Risk, Holdings-Based Performance Measurement
- Performance Attribution Analysis
- Measuring Market Timing Skills
- Factors that affect use of performance measures
- Evaluation of bond portfolio performance
- Returns-Based Bond Performance Measurement
- Bond Performance Attribution
- Reporting investment performance
- Time-Weighted and Money-Weighted Returns

TEACHING METHODOLOGY

- **Lectures**

Several topics will be covered through the lectures. The detailed outline of the topics covered is presented in the course schedule.

- **Self-study**

Students should study the given lecture material, the slides, the references and the recommended literature. This will allow the student to master the lecture material in greater depth and fulfill the assigned tasks.

- **Written homework and practice assignments execution**

Practice sessions covering homework exercises from books, essays writing and presentations, individual and group simulation games and assignments.

- **Discussions**

During the course situational discussions are organized, which helps not only to perceive the theoretical material, but also to gain practical skills.

- Tutorial consultations

The lecturer should actively participate in the discussions, give advice to students during practical lessons, individual and group assignments.

LABOUR MARKET RELEVANCE

- Ability to work in an international context
- Capacity for applying knowledge in practice
- Concern for quality
- Research skills
- Ability to work autonomously
- Capacity for analysis and synthesis
- Critical and self-critical abilities
- Decision-making
- Applying spreadsheet software (Excel)
- Performance Management
- Risk analysis and management
- Reconciling Financial Statements
- Understanding of Profit and Loss
- Financial analysis and reporting
- Asset management skills in local and international markets

ASSESSMENT AND GRADING

- 30% - Class participation, Homework
- 20% - Essay writing and presentation, Individual, Group Simulation Games and Presentation
- 50%- Final Examination

REFERENCES

- Frank Reilly, Keith Brown, Investment Analysis and Portfolio Management, South-Western College Pub; 10th edition.
- Zvi Bodie, Alex Kane, Alan J. Marcus, Investments, McGraw-Hill/Irwin; 10th edition.
- Investments (6th Edition), by William Sharpe, Gordon J. Alexander, Jeffrey W Bailey
- Fundamentals of Investments (3rd Edition), by Gordon J. Alexander, William F.
- The Theory and Practice of Investment Management: Asset Allocation, Valuation, Portfolio Construction, and Strategies Hardcover by Frank J. Fabozzi, Harry M. Markowitz Sharpe, Jeffery V. Bailey

COURSE ASSIGNMENTS

- **Individual assignment -The Individual Simulation Game**
- Students invest in Armenian financial instruments
- Students form an index portfolio based on a stock index
- Essay writing
- **Individual assignment – project or case study**
- Analysis of Investment Legal Restrictions of Financial Institutions
- Analysis of financial institutions with at least 5 years' assets and potential structure
- **Group assignment –The Group Simulation Game**
- Students invest in international markets

Investment analysis and portfolio management

THANK FOR ATTENTION

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