

Syllabus of the course « Economics and Corporate Finance »

Approved by
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Master's programme
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ECTS	3
Contact hours	32
Self-study	82
Year	Master, 1st year
Teaching format	Without online course support

I. COURSE AIM, LEARNING OUTCOMES AND PREREQUISITES

“Economics and Corporate Finance” is a two-month intensive course in financial management. The course builds basic conceptual and analytical framework focused on the financial analysis. It is specially designed for the 1st year Master Program “Management” students who need to study or to revise the basic concepts in order to take advanced courses on Finance and Management.

The objective of this course is to introduce the students to the world of finance. This course will introduce students to frameworks and tools to measure value; both for corporate and personal assets. It will also help students in decision-making, again at both the corporate and personal levels.

This course is intended to provide a framework for analyzing the major types of financial decisions made by economic agents. It is devoted to the fundamental principles of valuation and financial management. Students will learn and apply the concepts of time value of money and risk to understand the major determinants of value creation. This course consists of both theory and real world examples to demonstrate how to value any asset.

Goals to achieve:

- To teach and review the fundamental methods and skills of finance vital for understanding valuation of any asset, personal or corporate
- To prepare students to make sound personal and professional decisions
- To provide students with a basic level of knowledge to enable them better understand the role of finance in debates over corporate and public policy
- To prepare students to take more advanced courses in finance

On completing the course, students:

should demonstrate the knowledge of the basic theoretical concepts of financial management and money management principles, the basics of asset management, as well as the composition and structure of the sources of their funding, have knowledge of the company as a participant of the financial market, have knowledge of the external financial environment of the company, the structure of the financial market, the functions of financial institutions.

be able to search for the information needed to carry out specific economic analysis; to make management decisions; be able to justify the choice and analyze the necessary economic and financial information and data, able to evaluate the company policy in financial management.

have skills to analyze the main factors affecting the value of the company, the different approaches to the justification of the strategic financial decisions; critical reflection on empirical processes in the economy and the financial sector, theoretical and applied methods of analysis; have the skills to

analyze the effectiveness of investment projects studied methods (including applying the theory of real options); participation in the development of design solutions in the field of professional activities, preparation of proposals and measures for the implementation of the developed projects and programs; analysis of the main factors of corporate value, different approaches to the justification of the strategic and operational financial solutions and asset management.

To successfully complete this course the students should have the following knowledge and competences:

- Basic economics and financial terminology in English
- Foundations of financial calculations in MS Excel.

II. COURSE CONTENT

PART 1. FUNDAMENTAL CONCEPTS OF FINANCE.

Financial system: concept, functions, elements. Financial instruments, markets and institutions: concept, types and role in the functioning of the financial system. The efficiency of the financial system and economic growth. Current trends in the financial system: globalization, securitization and financial engineering.

An Overview of Financial Management: concept features. Goals, objectives and objects of financial management. Investment and financial decisions of the company. The separation of ownership and management functions. Theory of shareholder value and stakeholder influence.

Financial and real assets. The financial model of the firm. Profit and cash flow. Free cash flow and shareholder value.

PART 2. FIXED INCOME SECURITIES.

The time value of money. The perfect capital market assumption, the absence of arbitrage and the capital market equilibrium. Factors that determine the level of interest rates. Spot and forward interest rates. Term structure of interest rates. Shape of the curve of interest rates, the main empirical facts. Fundamentals of the theory of interest rates: the expectations hypothesis, market segmentation hypothesis, the hypothesis of liquidity preference.

Risk-free asset pricing. Discounted cash flows and the present value of assets. Special cases of determining the present value of cash flows: annuity, perpetuity, increasing rents and a growing annuity. Using the concept of time value of money in the valuation of debt capital instruments. Pricing coupon and zero-coupon bonds in the absence of risk. Current yield and yield to maturity. Bonds traded with a premium and a discount. Value of the bond over time.

PART 3. STOCKS AND OPTIONS.

The concept of uncertainty and risk in the modern theory of finance. Return on investment in assets. Uncertainty and the arbitrage pricing theory. The measurement of risk. Foundations of modern portfolio theory. Diversification. Systematic and non-systematic risks.

Uncertainty and capital market equilibrium. Capital asset pricing model. Assumptions of the model and the equilibrium condition. Beta as a measure of systematic risk of the asset. Line market securities. Portfolio beta. Empirical studies of CAPM consistency and its criticism. Multifactor asset pricing models as a generalization of equilibrium analysis.

Arbitrage theory of asset pricing. Fama and French three-factor model FF3F: a review and empirical study.

Information efficiency of capital markets: the concept, empirical studies and criticism.

Using the concept of risk and return trade-off in the evaluation of the fundamental value of equity instruments. Gordon model. Features estimate the expected growth rate of dividends.

Two-stage model estimates of the fundamental value of the shares. Price-to-earnings ratio (P/E) in the assessment of the fundamental value of the shares.

Introduction to financial options and their application in finance. Call and put options. Hedge portfolio. One- and multi-period binomial option pricing model. The Black-Scholes option pricing model.

PART 4. PROJECTS AND THEIR VALUATION.

Investment policy. Applying the basic financial concepts to investment choice. The assumption of the independence of financial and investment decisions in the investment analysis. Free cash flow, the company's value and investment decisions of the firm.

Evaluating the effectiveness of investment projects. Accounting and economic indicators in the evaluation of investment decisions: main concepts, advantages, disadvantages. The net present value of the investment: NPV. Methods of project analysis: internal rate of return (IRR), profitability index (PI), payback period (PBP) and the discounted payback period of the project (DPBP). Disadvantages and limitations of the listed above methods.

Elements of real options theory. Types of real options. An option to increase or decrease in the project, the option to eliminate the project, the option to delay the project. Simulation of real options using a decision tree.

PART 5. CAPITAL STRUCTURE.

Business risks of the corporation. Operational and financial risk. Financial and operational leverage. Review of the company financing sources. Equity, debt and hybrid financing instruments: concept, types, features of attraction and use. Overview of empirical observations and facts corporate finance.

Company's capital structure and the characteristics of financial claims. Modigliani-Miller theorem in the absence of taxes in the economy: the maintenance and proof. Theorem role in the modern theory of corporate finance. Introduction of imperfections in financial markets: the role of corporate taxes in the management of its capital structure.

The correlation between financial and investment decisions of the firm. Analysis of the company's cost of capital. Methods for valuation the cost of its own and borrowed capital. Cost of capital and financial leverage. Correction of the company beta, using financial leverage and the Hamada equation: assumptions and limitations of the analysis.

The method of weighted average cost of capital WACC. Modigliani-Miller theorem in the form of weighted average cost of capital of the company. Capital structure optimization: WACC minimizing and maximizing the company's value.

PART 6. CASH DISTRIBUTIONS.

Distributions to shareholders: dividends and repurchases. The Modigliani-Miller dividend irrelevance theorem. The effect of market imperfections (taxes and transaction costs) on dividend policy. The effect of market frictions on distribution policy. Dividend irrelevance theory. Dividend preference theory. Empirical evidence on distribution policies.

PART 7. STRATEGIC AND FINANCIAL RESTRUCTURING.

The methods of corporate restructuring: mergers and acquisitions (M&A), leveraged buyouts (LBOs), divestitures. Incentives: synergy, tax optimization, diversification. Types of mergers; government control and regulation of M&A. The adjusted present value method (APV) in the investment analysis. LBOs: the effect on stock prices. Corporate divestitures and the problem of control. Bankruptcy, reorganization, liquidation and corporate control. Financial analysis of efficiency in case of restructuring.

III. GRADING

Type of control	Form of control	1year				Notes
		1	2	3	4	
Current (week)	Home assignment	2,4,6,7,8				Problem sets are assigned for every major topic, and consist of take-home exercises involving working with real financial data, solving problems, or other assignments corresponding to topics covered. Problem sets will be due every two weeks. The case will be due at the end of the 7th week, and the final problem set will be at the end of the course. The case will require you to apply the techniques learned in the course to value an investment project.
Final	Exam	*				The final exam will be cumulative and cover all topics discussed in the course

Grading Criteria

Grade points	In Words
10	Excellent
9	
8	
7	Good
6	
5	Satisfactory
4	
3	Failed/Not passed
2	
1	
0	Failed/Unfair Behavior (cheating)

Cumulative grade ($G_{cumulative}$) is calculated as the weighted average with the following weights:

$$G_{cumulative} = 0.5 * G_{h/w} + 0.3 * G_{case} + 0.2 * G_{class} ,$$

where

$G_{h/w}$ – weighted average grade for 4 home assignments,

G_{case} – grade for 1 take-home group case,

G_{class} – grade for class participation (includes class activity and in-class quizzes results)

The final grade (G_{final}) is calculated as the weighted average with the following weights:

$$G_{final} = 0.5 * G_{cumulative} + 0.5 * G_{exam}$$

IV. SAMPLE ASSESSMENT TOOLS

1 Tools for ongoing assessment

1. You are interested in a new vehicle. The price of the car is \$20000. After visiting your manager, doing your research on the best leases available, you have three options.

- a) Purchase the car for cash and receive a \$1000 cash rebate from Dealer 1.
- b) Lease the car from Dealer 2. You should pay the dealer \$2000 now and \$500 a month for each of the next 24 months. After 24 months you may buy the car for \$5,000.

Supposing the market interest rate is 8% choose the best option.

. You have been asked to calculate the debt ratio for a firm that has the following components to its financing mix –

- The firm has 1 million shares outstanding, trading at \$ 50 per share.
- The firm has \$ 25 million in straight debt, carrying a market interest rate of 8%.
- The firm has 20,000 10-year convertible bonds outstanding, with a face value of \$1000, a market value of \$1100, and a coupon rate of 5% paid twice a year.

Estimate the debt ratio for this firm.

2. The company is considering a 2-year investment project, which is currently required investment of \$ 5 million. In each future year can equally face one of two events: the demand for the company's products can be high, or - otherwise - low. In the first year, the company expects \$ 2.3 million return on investment if the demand would be low, and \$ 3 million -otherwise. The cost of capital of the company is estimated at 10%.

Evaluate the project using the NPV criterion and the method of decision tree.

What if the company would have the right to refuse to implement the project (option to liquidation) at the end of the first year? Assume equipment in this moment could be sold for \$ 2.4 million. Construct a decision tree taking into account this possibility. What is the value of the option to eliminate the project?

3. XYZ Corporation, a textile manufacturer, is evaluating its capital structure. The balance sheet of the company is as follows (in billions):

Assets		Liabilities	
Fixed Assets	2000	Debt	1250
Current Assets	500	Equity	1250

In addition, you are provided the following information:

- (a) The debt is in the form of long term bonds, with a coupon rate of 7%. The bonds are currently rated A and are selling at a yield of 10% (the market value of the bonds is 80% of the face value).
- (b) The firm currently has 20 million shares outstanding, and the current market price is \$200 per share. The firm pays a dividend of \$10 per share and has a price/earnings ratio of 10.
- (c) The stock currently has a beta of 1,25. The six-month Treasury bill rate is 6%.
- (d) The tax rate for this firm is 30%.

Calculate the debt/equity ratio for this firm in book value terms, in market value terms. Find the firm's after-tax cost of debt and the firm's current cost of capital.

2. Questions for Assessment of Quality of the Course Acquisition

1. Financial management: goals, objects and main concepts.
2. Theories of shareholder value and stakeholder influence.
3. Corporate governance and agency costs.
4. The financial model of the firm.
5. The financial environment of the company. Financial instruments, markets and institutions.
6. Current trends in the financial system.

7. The concept of the time value of cash flows.
8. The term structure of interest rates.
9. Investment Analysis of fixed income.
10. The concept of risk and return. No-arbitrage and capital market equilibrium under uncertainty.
11. The foundations of modern portfolio theory. Diversification.
12. Capital asset pricing model and the Sharpe Lintner CAPM.
13. Empirical studies of CAPM consistency and their criticism.
14. Multifactor asset pricing models.
15. Arbitration theory of asset pricing APT. Three-factor model Fama and French FF3F.
16. Informational efficiency of capital markets EMH.
17. Methods for evaluating the effectiveness of real investment.
18. Net present value NPV.
19. Internal rate of return IRR.
20. Fundamentals of the theory of real options.
21. Sources of financing investment activity.
22. Financial and operational leverage.
23. The capital structure of the company and the Modigliani-Miller theorem.
24. The compromise model of the capital structure of the corporation.
25. The cost of capital of the corporation. The weighted average cost of capital WACC.
26. Accounting for financial risk and the Hamada equation.
27. The relationship of financial and investment decisions of the company: the use of WACC.
28. The relationship of financial and investment decisions of the company: the use of APV.
29. Theories of dividend policy.
30. M&A definition, types and motives.
31. Reasons for divestitures.
32. LBOs definition and the possible effect on the stock price.

V. RESOURCES

5.1 Main literature

1. Brealey, R. A. Principles of Corporate Finance / R. A. Brealey, S. C. Myers, F. Allen. - 11th global ed. - Berkshire : McGraw Hill Education, 2014. - XXVIII, 889 p., AP 1-10, Gl 1-18, I 1-25.

5.2 Further readings

1. Danthine, J.-P. Intermediate Financial Theory / Danthine, J.-P., J. Donaldson. - 2nd ed. - Amsterdam : ELSEVIER Academic Press, 2005. - 377 p.
2. Tirole, J. The Theory of Corporate Finance / J. Tirole. - Princeton : Princeton University Press, 2006. - 644 p.

a. Software

	Name	Access
1.	RUS Microsoft Windows 7 Professional Microsoft Windows 10	<i>Из внутренней сети университета (договор)</i>

	Microsoft Windows 8.1 Professional RUS	
.	Microsoft Office Professional Plus 2010	<i>Из внутренней сети университета (договор)</i>

b. Professional database, enquiry systems, internet sources (electronic educational resources)

п/п	Name	Access
	<i>Professional database, enquiry systems</i>	
.	Консультант Плюс	<i>Из внутренней сети университета (договор)</i>

c. Course support

Lecture rooms for the course classes are equipped with the necessary tools for the course visual aids demonstration:

- computer with access to the internet (operational system, office software packages, antivirus software);
- multimedia projector with remote control.