



SYLLABUS “FINANCIAL MARKETS”

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Department responsible for the course or equivalent: Institute of Management in Economic, Ecological and Social Systems; Engineering Economics Department.

Semester when the course unit is delivered: 7nd

Level of course unit: Bachelor level.

ECTS credits: 6

ADMISSION REQUIREMENTS

Applicants are expected to have completed the following courses:

Undergraduate practice

Protection of final qualifying work

COURSE OBJECTIVES (AIMS)

Course (module) aims: studying the discipline “Financial Markets» is the formation of solid theoretical knowledge and practical skills among students in using financial calculation methods in analyzing payment flows, calculating the income and profitability of financial instruments and financial transactions in modern economic conditions.

Objectives:

study of the methods used in financial and economic calculations in solving specific financial problems, the formation of the ability to make interest accruals, the formation of the ability to generalize the characteristics of payment flows;

- the formation of the skills of financial calculations necessary for the quantitative analysis of financial transactions
- measurement of the final financial results of the operation for each of the parties involved in it;
- comparison of the effectiveness of various financial transactions;
- identification of the dependence of the final results on the main parameters of the operation, transaction, contract;
- calculation of parameters for an equivalent change in the terms of the contract;
- development of the ability to make effective management and investment financial decisions, analyze and process data, and forecast



the consequences of decisions.

COURSE CONTENTS

Session 1. Simple interest.

At the heart of any credit transaction, i.e. transferring money in debt to the borrower from the lender, lies the desire to receive income. The absolute amount of income received by the lender for the transfer of money in debt is called interest money or interest. The origin of this name is due to the fact that the amount of the loan payment is usually determined as the corresponding percentage (in the mathematical sense) of the loan amount.

Session 2. Compound interest.

If interest at the end of each accrual period is not paid, but added to the principal amount and the amount obtained becomes the starting point for calculating interest in the next period, then the amount accrued at the end of the term is determined by the law of compound interest. The addition of accrued interest to the amount that served as the basis for their determination is called interest capitalization. The calculation of compound interest is usually used in cases where the interest is a significant fraction of the original amount.

Session 3. Discount interest rate.

In banking practice, when accounting (i.e., early purchasing) bills and other monetary liabilities in the calculations, historically, the interest rate is not used, but the so-called discount rate. The discount rate is associated with an anticipative method of calculating interest, where is the loan fee, i.e. interest income accrued in advance when granting a loan. In this case, the debtor is issued an amount reduced by the amount of interest income, and the full amount of the debt is subject to return at the end of the term.

Session 4. Equivalence of interest rates.

Quite often in practice a situation arises when it is necessary to make a comparison among themselves on the profitability of the conditions of various financial transactions and commercial transactions. Terms of financial and commercial operations can be very diverse and directly incomparable. For comparison of alternative options, the rates used in the conditions of the contracts lead to a uniform indicator. Different financial schemes can be considered equivalent if they lead to the same financial result.



Session 5. Determination of the term of payment and interest rates.

When developing and analyzing the terms of financial contracts, it is often necessary to determine the term of the contract or the interest rate with known values of the initial and accrued amounts, or, equivalently, with a known value of the accretion multiplier for the contract term. The necessary relations are easily obtained from the corresponding formulas of the previous sections.

Session 6. Real rate of return, taking into account inflation and taxation.

Inflation is a decrease in the real purchasing power of money. In purely financial calculations, where only changes in nominal monetary amounts appear, this factor is not taken into account. In reality, not every rate of return can attract the attention of investors. Obviously, with an inflation rate of 50% per year, hardly anyone will invest at a lower percentage. Such an intuitive understanding of the situation should be supplemented by a quantitative analysis designed to answer the question: what is the real return on investment taking into account inflation? First of all, it is necessary to introduce a measure of the level and rate of inflation. The value of investments and the income level of different years can be comparable only if the value of the monetary unit does not change. The inflation rate is expressed as a price index. The price index is a measure of the relationship between the aggregate price of a certain set of goods and services, called the "market basket", for a given time period and the aggregate price of an identical or similar group of goods and services in the base period.

Session 7. Payment flows and financial annuities.

So far, we have considered cases of financial transactions consisting of a separate one-time payment, for example, the receipt and repayment of a long-term loan. At the same time, repayment of such a loan is possible not only with a lump sum payment, but with a multitude of payments distributed over time. In the financial literature, a number of time-distributed payments and receipts are called a stream of payments. Payment flows are an integral part of all kinds of financial transactions: with securities, in managing the finances of enterprises, in implementing investment projects, in lending operations, in evaluating a business, in evaluating real estate, choosing alternative options for financial transactions, etc.

Session 8. Debt amortization, mortgage loans.

Repayment of installment debt, or amortization of a debt, is usually done through a series of periodic payments, i.e., annuities. Each payment consists of two



parts: the repayable part of the principal amount of the debt and interest accrued on the current debt. The current debt is understood as the outstanding balance of the principal amount of the debt at the end of the next annuity period, that is, at the point in time immediately after the next payment. The simplest method is repayment of principal in equal amounts. The disadvantage of this method is the fact that urgent payments (i.e., debt servicing costs) in the initial period of debt repayment are higher than at the end of the term, which does not always suit the debtor.

Session 9. Assessment of investment projects.

Any entrepreneurial activity is more or less connected with investments. Investments are necessary for updating the existing material and technical base of production, expanding production volumes, developing new types of activities, etc. Capital is invested for one main reason - to obtain significant economic income in the future. The attractiveness of an investment project is characterized by four main components:

- volume of expenses - net investments;
- potential benefits - net cash flow from operations;
- the period during which the investment project will generate income - the life cycle of the investment;
- the release of capital at the end of the economic life of the investment — liquidation value.

Session 10. Insurance. Insurance premiums.

Life insurance is a typical example of a long-term financial transaction, where the time factor plays a crucial role. The difference between financial operations on life insurance and ordinary financial operations is that payments are made only upon the occurrence of an insurance event that is random in nature. A description of financial transactions that are probabilistic in nature is the subject of actuarial mathematics, derived from the term “actuary”. In the modern sense, an actuary is a person who has certain qualifications for assessing risks and probabilities in the field of finance and business related to random events.

Session 11. Assessment of the value of bonds and their yield.

Key parameters of the bond:

A bond is a debt obligation, according to which the borrower guarantees the lender payment of a certain amount at a fixed point in time in the future and periodic payment of the assigned interest (at a fixed or floating rate). Bonds are an important object of long-term investments. From the moment of their issue to



maturity, they are sold and bought on the securities market at market prices. The market price at the time of release may be equal to face value, below face value (with discount) and above face value (with premium). It is easy to see that the premium is an additional payment for the expected high income, and the discount is a discount on the price associated with the low expected income from the bond.

Estimating the value of a bond at a current point in time is to determine the current value of all upcoming payments on a bond, taking into account the times when they will be made. Typically, when evaluating bonds, it is considered that the interest rate is equal to the market (current) interest rate established in the securities market at the time of valuation, and will remain constant until the bond is redeemed. It is at this rate that future payments are discounted by the time the bond is valued. The current value of the coupon bond is equal to the sum of the current value of the face value paid at maturity and the current value of the flow of coupon payments made at the end of each coupon period.

Session 12. Assessment of the value of shares and their profitability.

Shares are securities issued by joint stock companies to finance their activities. There are two types of stocks: preferred (preferred stocks) and ordinary (common stocks). The owner of a preferred share has the right to receive a fixed income (dividend), and the payment of dividends on these shares is carried out primarily before the distribution of dividends on ordinary shares. Preferred shares do not give voting rights at a meeting of shareholders, i.e. ownership of these shares does not give any rights to manage a joint stock company. Preferred shares are similar to bonds, but unlike the latter, their validity is unlimited. Equity (in the classical sense of the term) is an unquenchable security.

LEARNING OUTCOMES

Knowledge:

- in the field of projects in the field of professional activity (commercial, marketing, advertising, logistics and (or) merchandising);
- the basics of the process of performing interest calculations: simple financial transactions and the calculation of simple interest, complex financial transactions and the calculation of compound interest; indicators of profitability of securities; fundamentals of currency calculations.

Skills:

- to carry out projects in the field of professional activity (commercial, marketing, advertising, logistics and (or) merchandising and calculations related to the calculation of simple and compound interest; adjust financial



and economic indicators to reflect inflation; calculate the amount of payments for various ways of paying off debt; evaluate the effectiveness of investment and commercial projects;

- apply modern tools of financial mathematics to research economic and financial decisions at the level of individuals, households, firms, financial markets, financial institutions, industries, regions and countries.

Learning Outcomes:

- conducting financial calculations; interest and discounts in the process of performing financial transactions, building models of financial transactions in the process of lending and investing.;
- knowledge of modern software for analysis and presentation of source data; methods of analysis of payment flows of constant financial rents.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS

Each session lecturing accounts for about 60% of time, students' participation in discussion accounts for 40%. Specifically, the lecturer will invite students to speak during the lecture. At the end of each session, questions are presented for discussion.

During the seminars, students will have an opportunity to analyze some knowledge processes, to work with open source software for knowledge management and recognize how to deal with linguistic values (as knowledge) by using information technologies.

Comprehensive development of student discipline involves:

- students self-guided reading of the further literature;
- Tasks;
- testing.

ASSESSMENT METHODS AND CRITERIA

Criteria for evaluation:

Tasks

During the second module, the student is invited to solve 10 problems:

10-8 points are set for the student, if all the tasks are fully completed;

7-5 points are awarded to the student if 75% of the tasks are fully completed;

4-2 points are assigned to the student if 50% of the tasks are fully completed;



1 point is awarded to the student if 25% of the tasks are fully completed;
0 points are given to the student if less than 25% of the tasks are solved.

Testing

Testing time is 45 minutes. When passing the control task, each student receives his own unique option generated from the bank of test tasks. If testing is conducted in a classroom without involving computer equipment, then the correctness of the answers is checked by the teacher using the "keys" page.

Bank of tasks of control testing of knowledge and specification
discipline "Financial Markets"
Control specification set

Task category	Number of tasks in the control test	Number of points for the correct answer to one task	Total number of points
Category A	20	1	20
TOTAL			20

Exam

Criteria for evaluation:

- 40-34 points. billed to the student for a written answer - the answer is complete and correct; the material is presented in a certain logical sequence, in literary language; the answer is independent.
- 33 - 28 points. - for a written response - the answer is complete and correct; the material is presented in a certain logical sequence, while two or three minor errors are made, corrected at the request of the teacher.
- 27 - 22 points. - for a written answer - the answer is complete, but at the same time a significant mistake has been made, or incomplete, incoherent.
- less than 22 points. - for a written answer - when responding, the student found a misunderstanding of the main content of the training material or significant errors were made that the student could not correct with instructor questions or there is no answer.

COURSE LITERATURE (RECOMMENDED OR REQUIRED)

1. Ershov, D.E. Global economy: international trade policy = Global Economics. International Trade Policy: study guide / D.E. Ershov, D.V. Suchkov; Ministry of Education and Science of Russia, Federal State Budgetary Institution of Higher Professional Education "Nizhny Novgorod State University of Architecture



and Civil Engineering", International Faculty of Economics, Law and Management, International Institute of Economics and others - Nizhny Novgorod: NNGASU, 2012. - Part 2. - 55 p. : schemes., tab. - Access mode: by subscription.– URL: <http://biblioclub.ru/index.php?page=book&id=427249> (дата обращения: 19.03.2020). – schemes., tab. - Text: electronic. (in Eng.)

2. Pershina, E.Yu. Financial Economics: English for Masters / E.Yu. Peak. - 3rd ed., Erased. - Moscow: Flint, 2017 .-- 90 s. - Access mode: by subscription. - URL: <http://biblioclub.ru/index.php?page=book&id=115113> (accessed March 19, 2020). - Bibliography: p. 74. - ISBN 978-5-9765-1382-2. - Text: electronic .. (in Eng.)

3. Law and modern states: journal / ed. owls S.V. Boshno, E.V. Vinogradova, M.L. Davydova; founding Foundation "Consulting and legal protection of the population." - Moscow: Foundation for Consulting and Legal Protection of the Population, 2013. - No. 4. - 66 p. - Bibliogr. in the book. - Access mode: by subscription. - URL: <http://biblioclub.ru/index.php?page=book&id=434780>. - ISSN 2307-3306. - Text: electronic. (in Eng.)

Online resources

1. Statistical Portal:<https://www.statista.com/>

2. World Economics - The Global Authority on Economic Data URL: <https://www.worldeconomics.com/>

3. Online course "Financial Markets and Institutions" : <https://www.coursera.org/learn/finansovye-rynki>

4. Law and State: Journal / Ed. owls S.V. Boshno, E.V. Vinogradova, M.L. Davydova; founding Foundation "Consulting and legal protection of the population." - Moscow: Foundation for Consulting and Legal Protection of the Population, 2013. - No. 4. - 66 p. - Bibliogr. in the book. - Access mode: by subscription. - URL: <http://biblioclub.ru/index.php?page=book&id=434780>. - ISSN 2307-3306. - Text: electronic. (in Eng.)