SYLLABUS "INTRODUCTION TO TRADING. COMMODITY RESEARCH"

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Department responsible for the course or equivalent: Institute of Management in Economic, Ecological and Social Systems Management and Innovative Technologies Department

Semester when the course unit is delivered: 2nd

Level of course unit: Bachelor level

ECTS credits: 6

ADMISSION REQUIREMENTS

Applicants are expected to have completed the following courses:

- Economy;
- Management.

COURSE OBJECTIVES (AIMS)

- to know the economic content of trade in the system of social reproduction, its borders and the relationship with other activities;
- to reveal the organizational structure of trade; to study the current state, economic problems and prospects for the development of trade;
- to determine the economic content of trade in the system of social reproduction, its borders and the relationship with other activities;
- to master the organization, management and operation of trade organizations and service enterprises;
- to apply practical skills in setting goals, objectives, organizing economic activities in the field of trade;
- to develop independence of thinking and the formation of a creative approach in assessing the effectiveness of the economic activity of a trading enterprise

COURSE CONTENTS

Session 1. Fundamentals of Commodity Spot and Futures Markets: Instruments, Exchanges and Strategies.

• The importance of commodity spot trading • Forward and Futures contracts **.** • The actors in Futures markets **.** • The structure of Futures markets **.** • Shipping

and freight: Spot and forward markets **.** • Volume, liquidity and open interest in Futures markets

Session 2. Equilibrium Relationships between Spot Prices and Forward Prices **.**

• Price discovery in Futures markets **.** • Theory of storage, inventory and convenience yield **.** • Scarcity, reserves and price volatility **.** • Futures prices and expectations of future spot **.** • Spot–forward relationship in commodity markets under no-arbitrage **.** • Price of a Futures contract and market value of a Futures position **.** • Relationship between forward and Futures prices **.** • The benefits of indexes in commodity markets

Session 3. Stochastic Modeling of Commodity Price Processes **.**

• Randomness and commodity prices **.** • The distribution of commodity prices and their first four moments **.** • The geometric Brownian motion as a central model in finance **.** • Mean-reversion in financial modeling: From interest rates to commodities **.** • Introducing stochastic volatility and jumps in price trajectories **.** • State variable models for commodity prices **.** • Commodity forward curve dynamics

Session 4. Plain-vanilla Option Pricing and Hedging: From Stocks to Commodities.

• General definitions **.** • Classical strategies involving European calls and puts **.** • Put–call parity **.** • Valuation of European calls: The Black–Scholes formula and the Greeks **.** • Merton (1973) formula and its application to options on commodity spot prices **.** • Options on commodity spot prices **.** • Options on commodity Futures and the Black (1976) formula

Session 5. Risk-neutral Valuation of Plain-vanilla Options **.**

• Second proof of the Black–Scholes–Merton formula **.** • Risk-neutral dynamics of commodity prices **.** • Commodity Futures dynamics under the pricing measure **.** • Implied volatility in equity options and leverage effect **.** • Implied volatility in energy option prices and inverse leverage effect **.** • Binomial trees and option pricing **.** • Introducing stochastic interest rates in the valuation of commodity options

Session 6. Monte Carlo Simulations and Analytical Formulae for Asian, Barrier and Quanto Options **.**

• Monte Carlo methods for European options **.** • Asian (arithmetic average) options as key instruments in commodity markets **.** • Trading the shape of the

forward curve through floating strike Asian options **.** • Barrier options **.** • Commodity quanto options

Session 7. Agricultural Commodity Markets **.**

• Introduction **.** • The grain markets **.** • Soft commodities: Coffee, cotton and sugar **.** • Citrus and orange juice **.** • Livestock markets **.** • Technical analysis in agricultural commodity markets

Session 8. The Structure of Metal (Oil, Gas, Energy) Markets and Prices **.**

• Introduction **.** • About metals (Oil, Gas, Energy) Overview of metal (Oil, Gas, Energy) markets and their operation **.** • Characterizing general price movements **.** • Characterizing metal (Oil, Gas, Energy) price movements

Session 9. Commodities as a New Asset Class **.**

• The different ways of investing in commodities **.** • Commodity indexes and commodity-related funds

<div align="center">LEARNING OUTCOMES</div>

Knowledge:

- the economic content of trade in the system of social reproduction, its borders and the relationship with other activities;
- reveal the organizational structure of trade;
- study the current state, economic problems and prospects for the development of trade;

Abilities:

- determine the economic content of trade in the system of social reproduction, its borders and the relationship with other activities;
- mastering the organization, management and operation of trade organizations and service enterprises ;

Skills:

- practical skills in setting goals, objectives, organizing economic activities in the field of trade;
- development of independence of thinking and the formation of a creative approach in assessing the effectiveness of the economic activity of a trading enterprise.

<div align="center">PLANNED LEARNING ACTIVITIES AND TEACHING METHODS</div>

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 tasks and case studies, to work on project and survey and recognize how to deal with them by using information technologies.

Comprehensive development of student discipline involves:

- students involvement in problem-based presentation;
- students self-guided reading of the further literature;
- students self-guided preparation for survey questions;
- students participation in practices;
- project.

ASSESSMENT METHODS AND CRITERIA

Criteria for evaluation:

Survey questions

The maximum number of points for survey questions : 40 points

The correct and comprehensive answers to all proposed questions are given.	30-40
Given the correct, in general, answers to all proposed questions, however, there are minor comments on the completeness and quality of the presentation	20-29
There are significant comments on the completeness and quality of the presentation of the material or some of the issues remained unresolved	10-19
No answers to questions or incorrect answers.	0-9

Practical tasks

The maximum number of points for practical tasks: 20 points

The correct and comprehensive answers to all proposed questions are given.	17-20
The correct, in general, answers to all proposed questions are given, however, there are minor comments on the completeness and quality of the presentation of the material.	12-16
There are significant comments on the completeness and quality of the presentation of the material or some of the issues remained	5-11

unresolved	
No answers to questions or incorrect answers.	0-4

Case-study

The maximum number of points for case-studies: 20 points

The share of scores from their total number is equal to or exceeds 85% (excellent)	17-20
The share of scores from their total number is in the range from 65 to 84% (good).	12-16
The share of scores from their total number is in the range from 55 to 64% (satisfactory).	5-11
The share of scores from their total number is less than 55% (unsatisfactory)	0-4

Project Topics

The maximum number of points for project: 20 points

Relevance, purpose and objectives: the problem is clearly identified and its relevance is justified, the goal is formulated, the research objectives are defined. Structure: the text is divided into sections, there are no errors in text structuring. Design: volume is maintained, requirements for external design are met. The text contains at least one figure and one table. References: The requirements of GOST 7.32-2001 and GOST 7.0.5-2008 with respect to bibliography and references are met. References include textbooks, scientific and popular science journals, legal acts, and links to electronic publications. The age of the sources is not older than 5 years. Text quality: the analysis of the problem with the involvement of several sources of literature is carried out, own position is logically stated, conclusions are formulated, the topic is fully disclosed, links to sources from the list of literature are indicated. Protection: demonstrates a complete understanding of the described problem, gives correct answers to all questions on the topic of the abstract	18-20
Relevance, purpose and objectives: the problem is not clearly defined, there is a rationale for its relevance, a goal is formulated, the research objectives are defined. Structure: the text is divided into sections, there are no gross errors in	13-17

text structuring. Design: the text of the project is framed with minor violations of the design requirements set forth in this document, the volume is maintained. The text contains at least one figure and one table. References: when designing a project, most of the requirements of GOST 7.32-2001 and GOST 7.0.5-2008 with respect to bibliography and references are met. References include textbooks, scientific and popular science journals, legal acts, and links to electronic publications. The age of the sources is not older than 5 years. Text quality: the analysis of the problem with the involvement of several sources of literature is carried out, own position is logically stated, conclusions are formulated, the topic is fully disclosed, links to sources from the list of literature are indicated. Protection: demonstrates a significant understanding of the problem; not all questions are answered or incomplete answers	
Relevance, purpose and objectives: the relevance of the problem is insufficiently substantiated, the purpose and objectives of the study are not formulated. Structure: the text is divided into sections, there are errors in text structuring. Design: The text of the project is framed with violations of the design requirements set forth in this document, the volume is not maintained, there are no figures and tables. References: during the design of the project, the requirements of GOST 7.32-2001 and GOST 7.0.5-2008 with respect to bibliography and references are partially observed. The list of references is framed with violations of the quality and age requirements of the sources. Text quality: the analysis of the problem was carried out according to one source of literature, there are no conclusions, the topic is not fully disclosed. Protection: demonstrates a partial understanding of the problem, answers are given only to basic questions.	8-12
Relevance, purpose and objectives: there is clearly no justification for the relevance of the problem, the purpose and objectives of the study. Structure: the text is not divided into sections or there are gross errors in structuring the text. Design: the text of the project is framed with gross violations of the design requirements set forth in this document. References: during the design of the project, most of the	0-7

requirements of GOST 7.32-2001 and GOST 7.0.5-2008 with respect to bibliography and references are not complied with or there is no literature list.

Text quality: the topic is not disclosed, the requirements for the task are not fulfilled.

Protection: demonstrates a lack of understanding of the problem, there are no answers to questions or answers are incorrect

COURSE LITERATURE (RECOMMENDED OR REQUIRED)

1. Geman H. Commodities and Commodity Derivatives Modeling and Pricing for Agriculturals, Metals and Energy. John Wiley & Sons Ltd. 2015. – 416 p. https://link.springer.com/article/10.1007/s11408-006-0023-5

2. Ivanov, G.G. Management of a trade organization: textbook / G.G. Ivanov, I.S. Lebedev, T.VPankina. - M .: FORUM, 2013 .-- 368 p. (electronic resource www. znanium.com)

3. Ivanov, G.G. Economics of a trading enterprise: a textbook / G.G. Ivanov. - M.: Academy, 2010.- 320 p. (Electronic resource www. Znanium.com)

4. Denisova, N.I. Commercial activity of trade enterprises: Textbook / N.I. Denisova. - M.: Master: INFRA-M, 2011. - 480 p. (Electronic resource www. Znanium.com)

5. Nikulin, N.N. Organization of commercial activities of enterprises. By industry and scope: textbook. manual for university students enrolled in the field of "Trading" / N.N. Nikulina, L.F. Sukhodoeva, N.D. Eriashvili. - M.: UNITY-DANA, 2012. - 319 p. (electronic resource www. znanium.com)

6. Monitoring of economic indicators .- [Electronic resource]. - Access mode: http://www.budgetrf.ru

7. Notes marketer. - [Electronic resource]. - Access mode: http: //www.marketch.ru/index.php6.

8. Portal about trade marketing. - [Electronic resource]. - Access mode: http: //www.trademarketing.ru/

9. National Trade Association. - [Electronic resource]. - Access mode: http: //www.nta-rus.ru15

10. RosBusinessConsulting (materials of an analytical and review nature). - [Electronic resource]. - Access mode: http://www.rbc.ru

11. Russian trade. - [Electronic resource]. - Access mode: http://www.rtpress.ru

12. News and technology trading business. - [Electronic resource]. - Access mode: http://www.torgrus.ru