

Faculty of Digital Transformations

Department of "Economy and Business"

APPROVED BY  
Vice-rector for academic affairs,  
International Information  
Technology University JSC



(Signature) (Full name)  
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6B04104

(Code of Academic Program)

Financial Engineering

(Name of Academic Program)

## CATALOGUE OF ELECTIVE DISCIPLINES

For 2021 entering year

JSC "ITU"

The catalogue of elective disciplines for the AP Financial Engineering is developed on the basis of the working curriculum of the Finance specialty

The catalogue of elective disciplines was discussed at a meeting of the department

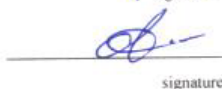
minutes No. 11 from "26" 01 2021.

Head of Department

  
signature

Алиев Р. С. М.  
Full name, position, degree

CED compiler

  
signature

Алиев Р. С. М.  
Full name, position, degree

The catalogue of elective disciplines was approved at a meeting of the Academic Council of "International Information Technology University" JSC minutes No. 4 from "30" 03 2021.

Director of Academic Affairs

  
signature

Алиев Р. С. М.  
Full name, position, degree



## 1. TERMS AND ABBREVIATIONS

1. 1 Academic program is a single set of basic characteristics of education, including goals, results and content of training, the organization of educational process, ways and methods for their implementation and criteria for assessing learning outcomes.

The content of academic program of higher education consists of three cycles of disciplines - general education disciplines (hereinafter - GED), basic disciplines (hereinafter - BD) and core disciplines (hereinafter - CD).

The cycle of GED includes disciplines of the compulsory component (hereinafter - CC), the university component (hereinafter - UC) and (or) the component of choice (hereinafter - COC). BD and CD include disciplines of UC and COC.

1. 2 Catalogue of elective disciplines (CED) is a systematic annotated list of all COC disciplines, for the entire training period, containing a brief description indicating the purpose of study, a summary of main sections and expected learning outcomes. CED reflects the prerequisites and postrequisites of each academic discipline. It should provide the students with the possibility of an alternative choice of elective disciplines for the formation of an individual educational trajectory.

On the basis of academic program and CED, the students develop individual curricula with the help of advisers.

1. 3 Individual curriculum (IC) is a curriculum formed by the students independently with the help of an adviser for each academic year on the basis of the academic program, the catalogue of elective disciplines or modules;

IC defines an individual educational trajectory of each student separately. It includes disciplines and types of educational activities (internship, experimental research, forms of final certification) of the compulsory component (CC), the university component (UC) and the component of choice (COC).

1. 4 Advisor is a teacher who performs the functions of an academic mentor of a student (according to the appropriate academic program), and assists in choosing a learning path (creating an individual curriculum) and mastering the academic program during the training period.

1. 5 The university component is a list of compulsory educational disciplines determined by the university independently for the mastering of the academic program.

1. 6 The component of choice is a list of academic disciplines and the corresponding minimum amounts of academic credits offered by the university and independently chosen by students in any academic period, taking into account their prerequisites and postrequisites.

1. 7 Elective disciplines are educational disciplines that are a part of the university component and the component of choice in the framework of established academic credits, introduced by organizations of education reflecting the individual preparation of students and taking into account the specifics of socio-economic development, the needs of a particular region and established scientific schools.

1. 8 Postrequisites are the disciplines and (or) modules and other types of academic work, the study of which requires knowledge, skills and competencies acquired at the end of the study of this discipline and (or) modules;

1. 9 Prerequisites are the disciplines and (or) modules and other types of educational work containing knowledge, abilities, skills and competencies necessary for the mastering of the studied discipline and (or) modules;

1. 10 Competencies are the ability of the practical use of acquired knowledge and skills in professional activities.

## 2. ELECTIVE DISCIPLINES

Discipline cycle	Discipline code	Discipline name	Semester	Credit quantity	Prerequisites
3 course					
BD	MAT6011	Econometrics	5	5	Statistics
BD	MRK6702	Digital marketing and brand management	5	5	Marketing
BD	MGT6714	International Business	6	5	Management
BD	MGT6703	Project management	6	5	Management
BD	ACC6703	Management accounting	6	5	Accountant and business
4 course					
BD	FIN6714	Taxes and taxation	7	5	Economic theory
BD	FIN6715	1C Accounting	7	5	Accountant and business
BD	SFT6143	SAP	7	5	Information-communication technologies
PD	FIN6710	Financial investment	7	5	Financial markets and intermediaries
PD	FIN6711	Financial modeling	7	5	Introduction to Finance, Financial statement analysis
PD	FIN6712	Portfolio Management	8	5	Financial markets and intermediaries
PD	FIN6713	Derivative financial instruments	8	5	Financial markets and intermediaries

### 3 DESCRIPTION OF ELECTIVE COURSE

Description of elective course	
Code of discipline	MAT6011
Name of discipline	Econometrics
Number of credits (ESTS)	5
Course, semester	3/5
Department	Mathematical and Computer Modeling
Course author (s)	Itasheva N.
Prerequisites	Statistics
Postrequisites	-
The aim of study of a discipline	<ul style="list-style-type: none"> <li>• understand and derive the properties of ordinary least squares</li> <li>• simple and multiple linear regression</li> <li>• hypothesis testing and confidence interval</li> <li>• empirical analysis.</li> </ul>
Brief course description (main sections)	This course covers the statistical tools needed to understand empirical economic research and to plan and execute independent research projects. Topics include statistical inference, regression, generalised least squares, instrumental variables, simultaneous equations models, and evaluation of government policies and programs.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ul style="list-style-type: none"> <li>• have knowledge of simple and multiple linear regressions</li> <li>• have knowledge of regression analysis relevant for analyzing economic data</li> <li>• know the theoretical background and assumptions for econometric methods</li> <li>• identify the presence of heteroscedasticity, adjust OLS standard errors</li> <li>• be able to interpret and evaluate outcomes of an empirical analysis</li> <li>• be able to use Excel and R for empirical analysis</li> </ul>

<b>Description of elective course</b>	
Code of discipline	MGT6701
Name of discipline	Management
Number of credits (ESTS)	5
Course, semester	3/5
Department	Economics and Business
Course author (s)	Omarov G.B.
Prerequisites	Economic Theory, Macroeconomics, Microeconomics
Postrequisites	Strategic management, Anti-Crisis Management
The aim of study of a discipline	To form at students the system, professional knowledge, qualification skills and management skills of organizations of the IT industry on the basis of studying contemporary principles, methods and functions of management
Brief course description (main sections)	<p>The course includes the following key topics in blocks:</p> <p>Module 1. Methodological fundamentals of management: Management as a kind of activity; Management History; Organization as an object of management.</p> <p>Module 2. Integration processes in management: Communication and Management; Management decisions in the management process.</p> <p>Module 3. Management functions: Strategic and tactical planning in the management system; Organization as a function of management; Leading as a function of management; Control in the management system.</p> <p>Module 4. Group Dynamics and Leadership: Managing human activities and managing a group; Influence and power; Basics of Leadership and Leadership Style; Basics of Conflict Theory.</p>
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>Students successfully completing the course will be able to:</p> <ul style="list-style-type: none"> <li>• Possess theoretical framework of management theory through categories and terminology.</li> <li>• Distinguish fundamental managerial concepts, skills and learn from real managers how to apply them in the practice.</li> <li>• Demonstrate critical and creative thinking on managerial situations.</li> <li>• To know management of Kazakhstan in the framework of course.</li> </ul>

<b>Description of elective course</b>	
Code of discipline	MRK6702
Name of discipline	Digital Marketing and Brand Management
Number of credits (ESTS)	5
Course, semester	3/5
Department	Economics and Business
Course author (s)	Ananyev T.V.
Prerequisites	Marketing
Postrequisites	
The aim of study of a discipline	The aim of the course is to develop a deep understanding of modern digital marketing concepts and technologies that are widely used by professionals in the field, as well as by academia. This course provides an overview of digital marketing, the sensitive art of building relationships between products and services and unique consumers, businesses, and markets.
Brief course description (main sections)	Digital Marketing and Brand Management is a new and exciting combination of technology, marketing and data analytics that solves the key marketing challenges of today. Many of the challenges include new ways of interacting with customers and gaining deeper customer knowledge by facilitating online communication channels and better meeting customer needs. This course also explores identifying customer behavior patterns and analyzing them to achieve new levels of customer satisfaction and drive traffic to a website or application.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>Students who successfully complete the course will be able to:</p> <ul style="list-style-type: none"> <li>- Be able to outline an approach to developing digital marketing plans</li> <li>- Understand the meaning of each element of the marketing mix on the Internet</li> <li>- Browse and select electronic models suitable for your business</li> <li>- Understand online customers and their buying behavior</li> <li>- Develop a strategy and plan for social media marketing management</li> <li>- Understand the basics of web design</li> <li>- Evaluate the range of options for increasing traffic</li> <li>- Know the success factors for various online communication tools</li> </ul>

<b>Description of elective course</b>	
Code of discipline	MGT6703
Name of discipline	Project management
Number of credits (ESTS)	5
Course, semester	3/6
Department	Economics and Business
Course author (s)	Omar A.D.
Prerequisites	Management
Postrequisites	
The aim of study of a discipline	<ol style="list-style-type: none"> <li>1. Learn the conceptual foundations of project management.</li> <li>2. Workshop on key concepts for creating a plan, tracking performance and presenting project results.</li> <li>3. Conduct a critical analysis and independent decision-making of business processes based on modern project management practices.</li> </ol>
Brief course description (main sections)	<p>This course examines project management from a management perspective, covering the fundamental nature of managing all types of projects - public domain, commercial, engineering, and information systems, as well as the specific techniques required to manage projects. It deals with the stages of selection, launch, operation, control and completion of projects. It examines the unique and demanding role of the project manager, the challenges of intercultural projects, and the behavioral and quantitative aspects of project management.</p>
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>At the end of the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the nature of projects, tools and methods of project management;</li> <li>2. Develop a project plan including project charter, WBS, OBS, budget and schedule;</li> <li>3. Apply the knowledge and skills necessary to meet the needs of project stakeholders.</li> </ol>



<b>Description of elective course</b>	
Code of discipline	ACC6703
Name of discipline	Management Accounting
Number of credits (ESTS)	5
Course, semester	3/6
Department	Economics and Business
Course author (s)	Zhumatkan G.B.
Prerequisites	Accountant and business
Postrequisites	
The aim of study of a discipline	The overall goal of the management accounting module is to develop knowledge and understanding of management accounting techniques to support management in planning, controlling and monitoring performance in various business contexts.
Brief course description (main sections)	Management accounting is an important tool that enhances a manager's ability to make effective economic decisions. The course will provide students with a good understanding of management accounting concepts and methods.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>Upon successful completion of this module, candidates should be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the nature, source and purpose of management information;</li> <li>2. Explain and apply cost accounting methods;</li> <li>3. Prepare budgets for planning and control;</li> <li>4. Compare actual costs with standard costs and analyze any variances;</li> <li>5. Explain and apply performance measurements and track business performance.</li> </ol>

<b>Description of elective course</b>	
Code of discipline	SFT6143
Name of discipline	SAP
Number of credits (ESTS)	5
Course, semester	7
Department	Information Systems
Course author (s)	Karimzhan N.
Prerequisites	Information-communication technologies
Postrequisites	
The aim of study of a discipline	to form a system of theoretical knowledge and practical skills to solve problems arising in project management in various spheres of economic activity, with an emphasis on projects related to the development and implementation of information systems and technologies (IT projects); to form professional competencies for effective IT project management, including the use of project management information systems; ensure the readiness to apply the acquired knowledge in the digital economy
Brief course description (main sections)	To master the academic discipline, students must know the conceptual foundations of the enterprise, be able to systematize and generalize information, develop specific proposals based on research results, use mathematical and tools to solve management problems.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p><b>KNOW:</b></p> <ul style="list-style-type: none"> <li>• conceptual apparatus of project management;</li> <li>• principles of standardization in the field of project management, the composition of international and national project management standards;</li> <li>• the best world and national practices included in the PMI PMBOK body of knowledge;</li> <li>• project management methodologies (methods of critical path, PERT analysis, cost analysis, forecasting the values of technical and economic indicators of the project, risk assessment);</li> <li>• architecture and functionality of IT project management information systems;</li> <li>• structure and typical content of an IT project;</li> <li>• principles of agile project management methodologies;</li> </ul> <p><b>OWN:</b></p> <ul style="list-style-type: none"> <li>• building a network diagram;</li> <li>• calculating the critical path;</li> <li>• resource allocation and planning;</li> <li>• calculation of indicators of earned value;</li> <li>• analysis of project risks and determination of response measures;</li> <li>• preparation and presentation of the project;</li> <li>• teamwork using agile methodology;</li> </ul> <p><b>BE ABLE TO:</b></p> <ul style="list-style-type: none"> <li>• analyze and optimize the work plan and the cost of the project;</li> <li>• draw up project documentation;</li> <li>• apply information systems to solve practical problems of project management.</li> </ul> <p><b>KNOW:</b></p> <ul style="list-style-type: none"> <li>• conceptual apparatus of project management;</li> </ul>

	<ul style="list-style-type: none"> <li>• principles of standardization in the field of project management, the composition of international and national project management standards;</li> <li>• the best world and national practices included in the PMI PMBOK body of knowledge;</li> <li>• project management methodologies (methods of critical path, PERT analysis, cost analysis, forecasting the values of technical and economic indicators of the project, risk assessment);</li> <li>• architecture and functionality of IT project management information systems;</li> <li>• structure and typical content of an IT project;</li> <li>• principles of agile project management methodologies;</li> </ul>
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<b>Description of elective course</b>	
Code of discipline	FIN6714
Name of discipline	Taxes and taxation
Number of credits (ESTS)	5
Course, semester	4/7
Department	Economics and Business
Course author (s)	Muhiyayeva D.M.
Prerequisites	Economic Theory
Postrequisites	-
The aim of study of a discipline	The aim of the course "Taxes and taxation" is to study the composition, structure and functions of the main taxes paid by business entities on the territory of the Republic of Kazakhstan, the methods of calculation and order of payment to the budget.
Brief course description (main sections)	Discipline provides a systematic picture of the theoretical and methodological basis of the tax system of the Republic of Kazakhstan, formation and changes in its structure, all types of taxes and fees paid by enterprises and organizations on the territory of the Republic of Kazakhstan.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ul style="list-style-type: none"> <li>• The ability to understand that taxes - is not only a historical phenomenon that existed in all societies, but also objectively necessary phenomenon in any society, ensuring its development and improvement; to understand the driving forces and the laws of the historical process; the place and role of their country in the history of mankind and in the world today;</li> <li>• The ability to use a standard legal documents in their activities;</li> <li>• Awareness of the social significance of their future profession, related to taxation of businesses and individuals;</li> <li>• Understanding of the economic nature and role of taxes in the community, as well as knowledge of the factors in the formation and principles of the tax system of the state; elements of the legal structure of Kazakhstan taxes and fees;</li> <li>• Knowledge of the rights, duties and responsibilities of the participants of tax relations;</li> <li>• The ability to perform professional duties on the calculation of the tax base and taxes based on current tax law and other legal acts on taxes and duties.</li> <li>• The ability to collect and analyze the raw data needed to calculate the tax and economic indicators characterizing the activity of economic entities;</li> <li>• As a result of the discipline and the solution of practical tasks and case studies the student should be able on the basis of standard operating procedures and regulatory framework to calculate taxes and tax burden, characterizing the activities of economic entities.</li> </ul>

<b>Description of elective course</b>	
Code of discipline	FIN6715
Name of discipline	1C Accounting
Number of credits (ESTS)	5
Course, semester	4/7
Department	Business economics
Course author (s)	Vacancy
Prerequisites	Accountant and business
Postrequisites	
The aim of study of a discipline	To acquire a set of theoretical knowledge and practical skills for working with this software product means to be able to apply the accounting program in different sections of students, to study various modes of operation
Brief course description (main sections)	1C: Accounting is a universal accounting program focused on a wide range of applications that can be used in a wide range of activities, from small to large enterprises.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>As a result of mastering the discipline, the student must be able to:</p> <ul style="list-style-type: none"> <li>- draw up and process accounting primary documents, fill out accounting registers;</li> <li>- reflect the business operations of the organization on the accounts;</li> <li>- to draw up the accounting statements of organizations on the basis of analytical and synthetic accounting data;</li> </ul> <p>know:</p> <ul style="list-style-type: none"> <li>- tasks, principles and requirements for accounting, objects accounting and their classification;</li> <li>- accounting method and its elements;</li> <li>- classification, details and procedure for filling out accounting documents, accounting forms, rules for organizing document flow;</li> <li>- structure and classification of accounts, structure and content sections of the chart of accounts of financial and economic activities of organizations;</li> <li>- organization and procedure for accounting business transactions in organizations;</li> <li>- the composition of the financial statements, the requirements for it, the procedure for drawing up.</li> </ul>

<b>Description of elective course</b>	
Code of discipline	MGT6714
Name of discipline	International Business
Number of credits (ESTS)	5
Course, semester	6
Department	Economics and Business
Course author (s)	Shildibekov E.Zh.
Prerequisites	Management
Postrequisites	
The aim of study of a discipline	The aim of the course is to provide students with knowledge about the nature of industrial engineering inside and outside the company
Brief course description (main sections)	<p>This course provides an overview of the theories of international business with a particular focus on practical aspects of international trade and management. Subject areas covered include:</p> <p>measuring the impact of tariffs on the welfare of society, the evolution of the monetary system, the role leading international institutions in the field of economic activity and management aspects at the international level.</p>
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<p>Students who successfully complete the course will be able to:</p> <ul style="list-style-type: none"> <li>- understand the main categories of international business and the methods used for them analysis;</li> <li>- know quantitative research on such indicators as: GDP, CPI and the impact of tariffs;</li> <li>- be able to assess the current role and status of international organizations (UN, WTO, IMF, and so on) and assess the capabilities of informal organizations (Greenpeace, Occupy Wall-street, etc.).</li> </ul>

<b>Description of elective course</b>	
Code of discipline	FIN6710
Name of discipline	Financial investments
Number of credits (ESTS)	5
Course, semester	4/7
Department	Economics and Business
Course author (s)	Beisen E.
Prerequisites	Financial markets and intermediaries
Postrequisites	
The aim of study of a discipline	To develop problem solving, analytical and critical thinking abilities of students related to changes in financial and economic environment which may directly impact the financial decision. Students learn to think as managers of financial institutions trying to assess and prevent the risks of FIs. Students have to be able to define risks, measure risks and manage risks; be able to assess the outcome of risk mitigation strategies; be able to assess the sufficient capital against risks accepted by FI.
Brief course description (main sections)	During the recent financial turmoil, we have experienced wide ride in the stock markets not only at home but abroad as well. Such volatile markets provide both challenges and opportunities for investors. This course is intended to provide a general overview of capital markets, financial instruments, and investment process. We will emphasize the role of modern financial theory in portfolio management. Therefore, we will cover a wide range of topics such as, financial markets, trading, security valuation, diversification and asset allocation, modern asset pricing models, performance measurement, active portfolio management, financial derivatives, and fixed income securities.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ol style="list-style-type: none"> <li>1. Students will understand the characteristics of different financial assets such as money market instruments, bonds, and stocks, and how to buy and sell these assets in financial markets.</li> <li>2. Students will understand the benefit of diversification of holding a portfolio of assets, and the importance played by the market portfolio.</li> <li>3. Students will know how to apply different valuation models to evaluate fixed income securities, stocks, and how to use different derivative securities to manage their investment risks.</li> </ol>

<b>Description of elective course</b>	
Code of discipline	FIN6711
Name of discipline	Financial modeling
Number of credits (ESTS)	5
Course, semester	4/7
Department	Economics and Business
Course author (s)	Vacant
Prerequisites	Finance, Financial statement analysis
Postrequisites	Portfolio Management
The aim of study of a discipline	<ul style="list-style-type: none"> <li>- Understand the business analysis and its relationship with the analysis of financial statements.</li> <li>- Identify and be able to apply various types of business analysis and financial analysis.</li> <li>- Learn to apply several basic methods of analysis of financial statements.</li> </ul>
Brief course description (main sections)	<p>Analysis of financial statements is exciting and dynamic. This course reveals keys to effective analysis to give readers a competitive advantage in an increasingly competitive marketplace. Understanding of financial statements is relevant to the decisions of many individuals including investors, creditors, consultants, managers, auditors, directors, analysts, regulators, and employees. This course equips these individuals with the analytical skills necessary to succeed in business.</p> <p>This course continually demonstrates that relevance with applications to real world companies. The course aims to benefit students, ranging from those with a simple curiosity in financial markets to those with aspiring for professional career in accounting and finance.</p>
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ul style="list-style-type: none"> <li>- Apply analytical tools to financial statement analysis</li> <li>- Conduct profitability analysis</li> <li>- Carry out credit analysis</li> <li>- Implement equity analysis</li> <li>- Gain understanding of operating activities, financing activities and investing activities</li> </ul>



<b>Description of elective course</b>	
Code of discipline	FIN6712
Name of discipline	Portfolio management
Number of credits (ESTS)	5
Course, semester	4/8
Department	Economics and Business
Course author (s)	Vacant
Prerequisites	Financial markets and intermediaries
Postrequisites	Diploma project
The aim of study of a discipline	<p>This course covers the main principles and applications of portfolio management, with a strong emphasis on investments in international environments. We will first cover issues such standard portfolio management and risk modeling, typical to daily professional practice. Then, we will extend those tools to encompass macroeconomic (domestic) and international issues such as exchange rates, interest rate parity and international arbitrage, exchange rate fluctuation exposure, as well as the management of international cash flows.</p>
Brief course description (main sections)	<p>The course provides a guideline to optimize financial decisions under domestic and foreign risks.</p>
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ul style="list-style-type: none"> <li>• Obtain analytical and computational skills necessary to face the challenges in the world of international finance – using mathematical and statistical formulas, financial calculator, Excel and other software packages.</li> <li>• Identify opportunities and professionally manage stock portfolios; understand the impacts of macroeconomic factors on portfolios; understand main financial models for risk management; identification and optimal management of international risks; use parity relationships and for forecasting exchange rates; manage international cash flows.</li> </ul>

<b>Description of elective course</b>	
Code of discipline	FIN6713
Name of discipline	Derivative financial instruments
Number of credits (ESTS)	5
Course, semester	4/8
Department	Economics and Business
Course author (s)	Muhiyayeva D.M.
Prerequisites	Financial markets and intermediaries
Postrequisites	Diploma project
The aim of study of a discipline	A derivative is any financial instrument; whose payoffs depend in a direct way on the value of an underlying asset at a time in the future. Usually, derivatives are contracts to buy or sell the underlying asset at a future time, with the price, quantity and other specifications defined today.
Brief course description (main sections)	This course places emphasis on market operations and the valuations of forward, futures, swaps, and options contracts and their interrelations.
Expected Learning Outcomes (knowledge, abilities, skills and competencies acquired by students)	<ul style="list-style-type: none"> <li>• Use various financial functions and models in financial calculations</li> <li>• Use statistical and mathematical concepts in developing derivative strategies</li> <li>• Use option pricing models in pricing and identifying profit opportunities in financial instruments</li> <li>• Formulate hedging, arbitrage, and speculative strategies with derivatives</li> <li>• Apply derivative pricing models to evaluate performances of financial assets and positions</li> <li>• Compare relative performances of various financial instruments and investment strategies</li> <li>• Evaluate the effects of derivative regulations and market (in)efficiencies</li> <li>• Understand the risk of the misuse and/or abuse of financial derivatives</li> <li>• Understand market failures caused by excessive risk-taking with financial derivatives</li> </ul>