



## Syllabus Course Program



# PROVIDING INNOVATIONS

### Specialty

075 – Marketing

### Institute

Institute of Economics, Management and International Business

### Educational program

Marketing

### Department

Marketing (201)

### Level of education

Master's level

### Course type

Free choice of specialized training

### Semester

2

### Language of instruction

English, Ukrainian

## Lecturers and course developers



Viktor ZARUBA

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Doctor of Economic Sciences, Professor, Professor of the Department of Marketing. More than 45 years of work experience. Author of more than 200 scientific and educational and methodological works. Leading lecturer in the disciplines: "Optimization methods and models", "Econometrics", "Research of operations in the economy", "Marketing management", "Quantitative methods in marketing management". Trained 7 candidates and 3 doctors of science.

[More about the lecturer on the department's website](https://web.kpi.kharkov.ua/marketing/viktor-zaruba/)

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## General information

### Summary

The course is aimed at students acquiring theoretical knowledge and skills in the use of marketing, technological and systemic approaches to assessing the attractiveness and management of innovations in organizations and society. In the process of studying the discipline, students gain knowledge about the forms of venture infrastructure and organizational formations of innovative activity, about possible strategies and types of behavior investors in the market of new technologies, learn to justify the economic efficiency of innovative projects taking into account risks, learn to demand forecasting at the stage of diffusion of innovations, to promote of innovations to commodity markets. ]

### Course objectives and goals

The purpose of the course is to provide theoretical knowledge and develop competencies in the application of marketing tools and quantitative methods to substantiate the effectiveness of innovative projects and promote innovative products. The main goals of studying the discipline are: the ability to conduct marketing research for the economic evaluation of innovations; to evaluate and justify economic efficiency of innovative projects taking into account risks; understanding the content of venture innovative entrepreneurship, knowledge of the organizational formations of venture infrastructure; understanding of possible strategies and behavior of investors in the market of new technologies; ability to forecast demand at the stage of diffusion of innovation, to ensure the penetration of innovations into product markets, to achieving and strengthening consumer loyalty. ]

## Format of classes

[Lectures, practical classes, consultations, self-study. Final control in the form of the final rating. ]

## Competencies

[GC01. Ability to abstract thinking, analysis and synthesis.

GC02. Ability to search, process and analyze information from various sources.

SC03. Ability to apply modern marketing methods and tools, digital technologies, resources and economic-mathematical methods and models in scientific and pedagogical activities.

SC07. The ability to identify and formalize patterns of development of subjects of market relations on the basis of fundamental and applied research, development of recommendations for increasing the efficiency of marketing systems. ]

## Learning outcomes

[LO03. Formulate and test hypotheses; use appropriate evidence to substantiate conclusions, in particular, the results of theoretical analysis, experimental studies and mathematical and/or computer modeling, available literature data.

LO06. Plan and carry out empirical and/or theoretical research on marketing and related interdisciplinary areas using modern tools and observing the norms of professional and academic ethics, critically analyze the results of own research and the results of other researchers in the context of the entire complex of modern knowledge regarding the researched problem.

LO08. Apply modern tools and technologies for searching, processing and analyzing information, in particular, methods of analyzing data of a large volume and/or complex structure, specialized databases and information systems. ]

## Student workload

[The total volume of the course is 150 hours (5ECTS credits): lectures - 32 hours, practical classes - 32 hours, self-study- 86 hours.]

## Course prerequisites

[Knowledge of the basic courses of Higher Mathematics and Economic Informatics at the bachelor's level ]

## Features of the course, teaching and learning methods, and technologies

[When teaching the discipline, such modern educational technologies as problem-based lectures during lecture classes, mini-lectures and work in small groups during practical classes are used. Problem lectures have a problem-setting nature, are held in close contact with the audience, and allow students to control their understanding of the educational material. During the problem lecture, the problems that must be solved by the students are clearly formulated. The lecture material is presented in such a way that, instead of direct answers to the questions, such information is highlighted that the student could use in solving the problem. Mini-lectures provide for the presentation of educational material in a short period of time, are characterized by a significant capacity and are conducted as part of a practical lesson in the form of lectures-instructions. The instructional lecture precedes the performance of practical classes using computers, is conducted with the aim of directly preparing students for their performance, reveals the content and sequence of their implementation, theoretical and applied aspects of its results. When working in small groups, students are invited to form groups of 5-6 people and present their vision and perception of the material at the end of the class. Work in small groups should create opportunities for the participation of each student in the work on the subject of the lesson, ensure the formation of personal qualities and experience of working in professional teams. ]

## Program of the course

### Topics of the lectures

[**Topic 1. Innovations, innovation processes and markets**

1. The concept of innovation and the innovation process. Marketing, technological and systemic approaches to evaluating the attractiveness of innovations in organizations.

2. The structure of the innovation process. Phases of development and development of innovation, development and expansion of production, maturity, decline.
3. Innovation markets. Types of innovative strategies. Division of organizations into innovators, imitators and conservatives.

#### Topic 2. Modeling the market reaction to the offer of a new product

1. Models of buyer behavior and market reactions to product offers. Market models with vertical differentiation and reserved buyer prices.
2. Approaches to determining the reserved price distribution function.

#### Topic 3. Investment provision of innovations

1. Criteria for evaluating the economic efficiency of innovative projects.
2. Concept of venture innovative entrepreneurship.
3. Venture organizational infrastructural formations.

#### Topic 4. Logistic models of technology substitution

1. Modeling the life cycle of technologies using logistic curves.
2. Strategies of investors in the market of new technologies: innovators, imitators, conservatives.
3. Reasons for conservative behavior. Problems of intertemporal choice.
4. State stimulation of private investments. The double selection effect.

#### Topic 5. Marketing models of penetration of innovations into product markets

1. The concept of reproductive and innovative activity of production organizations
2. Theories of diffusion of innovations by Everett Rogers and Jeffrey Moore.
3. Case-oriented approach in innovative marketing. Frank Bass' New Product Distribution Model.
4. Achieving and strengthening consumer loyalty. ]

### Topics of the workshops

#### [Topic 1. Application of econometric models to establish competitive prices for new products

1. Method of analogues in setting competitive prices for new products.
2. Application of linear multifactorial models in pricing of new products. General concepts and definitions. Geometric interpretation of linear models. Properties of model parameter estimates obtained by MNK.
3. Calculations of linear regression coefficients using MS Excel.
4. Use of non-linear regression models to find competitive prices for new products.
5. Calculations of parameters of nonlinear regression models using MS Excel

#### Topic 2. Calculations of economic efficiency assessment indicators of innovative projects

1. Risks and selection of discount factors
2. Use of MS Excel tools for calculations of linear regression coefficients of economic efficiency assessment indicators of innovative projects.
3. Discussion of the content of the calculation task "Estimation of the economic efficiency of innovative projects"

#### Topic 3. Sample research of consumers to forecast demand for a new product

1. Advantages of using the method of sample research to forecast demand for a new product.
2. Basic information for the use of statistical research methods.
3. A general approach to estimating the volume of demand based on the results of a sample survey.
4. Average value and dispersion of average values of individual consumer demand from sample populations.
5. An example of calculating the average value and variance of average values of individual consumer demand from sample populations.
6. Finding the confidence interval for the estimate of the mathematical expectation of the individual volume of demand based on the sample average of the individual volume of demand.
7. Determination of the sample size that provides the desired accuracy.
8. Examples of calculating the limits of the confidence interval and the minimum sample size. ]

### Topics of the laboratory classes

[The plan does not provide for conducting laboratory classes. ]

## Self-study

[Students' independent work consists in studying the lecture material (30 hours), preparing for practical classes and studying their material (30 hours), completing an individual task (16 hours), preparing for tests and assessment (10 hours). An individual task from the academic discipline "Providing Innovations" is the calculation task "Evaluation of the economic efficiency of innovative projects", which must be completed to the 15th week of study. The necessary calculations are recommended to be carried out using MS Excel. The assessment for the calculation task takes into account the correctness of the results and compliance with the recommendations of the methodological instructions. ]

## Course materials and recommended reading

### Basic materials

1. Ілляшенко, Н.С. Провайдинг інновацій: конспект лекцій для студ. спец. "Управління інноваційною діяльністю" усіх форм навчання. Суми: Сум ДУ, 2013. - 125 с.
2. Маркетингові аспекти управління інноваційним розвитком: монографія / За ред. д.е.н., професора С.М. Ілляшенка. Суми: ТОВ "Друкарський дім «Папірус», 2014. 480 с.
3. Тестування та оцінювання комерційних перспектив товарних інновацій: колективна монографія / за ред. Нагорного Є.І. Суми : Триторія, 2019. 354 с.
4. Віктор Заруба, Ірина Парфентенко. Математичне моделювання в управлінні маркетингом. Навчальний посібник. – Globe Edit, 2022. – 77с. ISBN: 978-620-0-63101.  
<https://drive.google.com/file/d/1RkBDrHbHLT2shXEMxrZy9FVnbSPowZKo/view?usp=sharing>
5. Черняк А.И. Выборочные исследования в экономике. Экономическая кибернетика: том 2: Методология прикладных исследований экономической кибернетики. - Донецк: ООО "Юго-Восток, Лтд", 2007. С. 270 – 313.
6. Роджерс Е.М. Дифузія інновацій / Пер. з англ. Василя Старка. К.: Вид. дім «Києво-Могилянська академія», 2009. -591 с.
7. Гуроров О.І. Інвестиційний менеджмент: курс лекцій. Харків: Харк. нац. аграр. ун-т. 2014. – 203 с.
8. Економетрика в електронних таблицях: навч. посіб. / Васильєва Н. К., Мироненко О. А., Самарець Н. М., Чорна Н. О.; за заг. ред. Н. К. Васильєвої. – Дніпро: БілаК. О., 2017. – 149 с. ISBN 978-617-645-249-2

### Additional materials

9. Маркетинговий менеджмент: підручник / Ф. Котлер, К.Л. Келлер, А.Ф. Павленко та ін. - К: Видавництво «Хімджест», 2008. - 720 с.
10. Заруба В.Я., Грозний І.С. Формалізація і моделювання поведінки учасників венчурних проектів зі створення нових продуктів. Маркетинг інновацій і інновації в маркетингу Монографія/ За ред. д.е.н., проф. С. М. Ілляшенка. – Суми: ВТД «Університетська книга», 2008.- С. 338 -364.
11. Заруба В.Я. Аналіз інноваційної активності виробничих організацій з позиції системного підходу. / В.Я. Заруба, І.А. Парфентенко // Вісник НТУ «ХПІ» (економічні науки). – №4 (2021) – С. 12-19 ISSN 2519-4461  
<https://repository.kpi.kharkov.ua/handle/KhPI-Press/58356>
12. Маркетинг стартап-проектів [Електронний ресурс]: навчальний посібник для усіх спеціальностей другого освітнього ступеню «магістр» / С.О. Солнцев, О.В. Зозульов, Н.В. Юдіна, Т.О. Царьова, Н.В. Язвінська / за заг. ред. С.О. Солнцева. Київ: КПІ ім. Ігоря Сікорського, 2019. - 218 с.  
URL: <http://ela.kpi.ua/handle/123456789/27437>
13. Ілляшенко Н.С. Маркетинг інновацій: конспект лекцій. Суми: Сумський державний ун-т, 2014. - 132 с.
14. Комерціалізація інновацій : монографія / за заг. ред. С. М. Ілляшенка, О.А. Біловодської. Суми : Триторія. 2020. 263 с.
15. Руська Р. В. Економетрика: навчальний посібник / Р. В. Руська. – Тернопіль: Тайп, 2012. – 224с. ]

## Assessment and grading

### Criteria for assessment of student performance, and the final score structure

The assessment of the discipline for mastering its educational material is given according to the final rating. In the final rating assessment, the report on the calculation task "Evaluation of the economic efficiency of innovative projects" (up to 60 points), reports on individual tasks given in practical classes (up to 20 points), as well as answers to questions from the lecture material in two control papers conducted at the end of the study of the 1st and 2nd modules of the discipline (up to 20 points) are taken into account.]

### Grading scale

Total points	National	ECTS
90-100	Excellent	A
82-89	Good	B
75-81	Good	C
64-74	Satisfactory	D
60-63	Satisfactory	E
35-59	Unsatisfactory (requires additional learning)	FX
1-34	Unsatisfactory (requires repetition of the course)	F

## Norms of academic integrity and course policy

[The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management.

Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

Students are obliged to attend classes according to the schedule. In the event of an absence, students will be required to complete all assignments to make up for missed classes. Participation in practical classes requires preliminary preparation and early processing of the necessary materials for productive work during the class. Written assignments must be submitted by the established deadlines. ]

### Approval

Approved by

Date, signature

Head of the department  
Diana RAYKO

Date, signature

Guarantor of the educational program  
Oleksandra KOSENKO