

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ  
ІМЕНІ СЕМЕНА КУЗНЕЦЯ

**ЗАТВЕРДЖЕНО**

на засіданні кафедри  
інформаційних систем  
Протокол № 1 від 27.08.2024 р.

**ПОГОДЖЕНО**

Проректор з навчально-методичної роботи

Каріна НЕМАШКАЛО



**ЕКОНОМІЧНЕ ОБГРУНТУВАННЯ ІТ-ПРОЄКТІВ**

**робоча програма навчальної дисципліни (РПНД)**

Галузь знань **12 «Інформаційні технології»**  
Спеціальність **122 «Комп'ютерні науки»**  
Освітній рівень **другий (магістерський)**  
Освітня програма **Комп'ютерні науки**

Статус дисципліни

Мова викладання, навчання та оцінювання

**вибіркова**

**англійська**

Розробник:

к.е.н., доцент

Євген ГРАБОВСЬКИЙ

Завідувач кафедри

інформаційних систем

Дмитро БОНДАРЕНКО

Гарант програми

підписано КЕП

Сергій МІНУХІН

Харків  
2024



## INTRODUCTION

Before starting the implementation of any IT project , it is necessary to carry out its economic justification, which shows that the selected software and tools, the necessary equipment and other factors have an economic justification and their use will be profitable. Effective implementation of IT project planning and initiation processes at least half determines their future success. Insufficient attention to this particular problem inevitably leads to significant problems in the planning, implementation and completion of the project. That is why in the structure of the curriculum of the master's program of the "Computer Science" specialty, the study of the course "Economic justification of IT projects " is provided.

The study course "Economic justification of IT projects" is studied by students of the "Computer Science" specialty of all forms of study in the first year of the master's study during the second semester.

The purpose of teaching this course is to form students a system of theoretical knowledge, applied skills and practical skills regarding the economic justification of IT projects and, on this basis, to acquire practical skills and abilities related to making project decisions.

The tasks of the course are:

mastering the skills of substantiating the company's innovative strategy based on the implementation of IT projects ;

ensuring the formation of skills in the use of basic methods of assessing the economic efficiency of investments in IT projects .

The object of the course is IT projects .

The subject of the course is the main approaches and methods of economic substantiation of IT projects .

The learning outcomes and competencies formed by the course are defined in table 1.

Table 1

### Learning outcomes and competencies formed by the course

Learning outcomes	Competencies
LO5.	SC03.
LO7.	SC03.
	SC04.
LO19.	SC10.
	SC11.

where, LO5. Evaluate the results of teams and collectives in the field of information technologies and ensure the effectiveness of their activities;

LO7. Develop and apply mathematical methods for the analysis of information models.

LO19. To analyze the current state and global trends in the development of computer sciences and information technologies;

SC03. Ability to use mathematical methods to analyze formalized models of the subject area.

SC04. The ability to collect and analyze data (including large data) to ensure the quality of project decision-making.

SC10. The ability to evaluate and ensure the quality of IT projects , information and computer systems of various purposes, to apply international standards for assessing the quality of software of information and computer systems, models for assessing the maturity of information and computer systems development processes.

SC11. Ability to initiate, plan and implement the development processes of information and computer systems and software, including its development, analysis, testing, system integration, implementation and support.

## **COURSE CONTENT**

### **Content module 1. The specifics of the company's innovative strategy based on the implementation of an IT project**

#### **Topic 1. Justification of the innovative strategy of implementing information technologies for the implementation of business projects**

1.1. Analysis of the process of implementing the company's innovative strategy based on the introduction of new information technologies

1.2. The specifics of the technological platform for the implementation of relevant business projects

1.3. Determination of the need for new information technology

#### **Topic 2. Effectiveness of projects on the creation and implementation of information systems**

2.1. Specifics of investment activities in the field of information technologies

2.2. Analysis of costs for the creation of information systems

2.3. Study of the effectiveness of IT projects

#### **Topic 3. Internet advertising as a means of promoting IT projects**

3.1. Concepts, types and tasks of Internet advertising

3.2. The specifics of promoting IT projects on the Internet and in social networks

3.3. Content strategy and content plan.

3.4. Stages of promotion of Internet advertising

### **Content module 2. Methods of assessing the economic efficiency of investments in IT projects**

#### **Topic 4. Classical financial methods of assessing the economic efficiency of investments in IT projects**

- 4.1. Performance indicators of investment projects for the creation and implementation of information systems
- 4.2. The specifics of accounting for uncertainty and risk in evaluating the effectiveness of IT project investments
- 4.3. Methods of cost accounting of IT projects.

**Topic 5. Probable and proprietary methods of evaluating IT projects**

- 5.1. Probable methods of evaluating IT projects
- 5.2. Proprietary methods of evaluating IT projects
- 5.3. Methods of assessing the information level of the enterprise in general

**Topic 6. Combined methods of assessing the economic efficiency of investments**

- 6.1. Concepts, types and specifics of combined methods of assessing the economic efficiency of IT projects.
- 6.2. Analysis of the features of the use of combined methods of economic efficiency assessment.
- 6.3. The flexibility of making management decisions based on combined methods,

The list of laboratory studies in the course is given in table 2.

Table 2

**The list of laboratory studies**

Name of the topic and / or task	Content
Topic 1. Task 1.	Formation of the company's innovative strategy based on the introduction of new information technologies
Topic 2. Task 2.	Development of a media plan and evaluation of the effectiveness of Internet advertising
Topic 3. Task 3.	Compilation of the semantic core of Internet advertising
Topic 4. Task 4.	Calculation of financial indicators for evaluation of IT projects
Topic 5. Task 5.	Using the TSO method to estimate the costs of creating information systems
Topic 6. Task 6.	Calculation of the overall effectiveness of information technology implementation

The list of self-studies in the course is given in table 3.

Table 3

**List of self-studies**

Name of the topic and / or task	Content
Topic 1 - 6	Studying lecture material
Topic 1 - 6	Preparation for laboratory classes
Topic 1 - 6	Preparation for the exam

The number of hours of lectures, laboratory classes, and hours of independent work is

given in the work plan (technological map) for the course.

## TEACHING METHODS

In the process of teaching an the course, in order to acquire certain learning outcomes, to activate the educational process, it is envisaged to use such learning methods as: Verbal (lecture (Topic 1, 4), problematic lecture (Topic 2), provocative lecture (Topic 6)).

In person (demonstration (Topic 1-6)).

Practical (laboratory work (Topic 1 - 6), case method (Topic 4)).

## FORMS AND METHODS OF ASSESSMENT

The University uses a 100-point cumulative system for assessing the learning outcomes of students.

Current control is carried out during lectures, laboratory classes and is aimed at checking the level of readiness of the student to perform a specific job and is evaluated by the amount of points scored:

– for courses with a form of semester control as an exam: maximum amount is 60 points; minimum amount required is 35 points.

The final control and an exam control includes current.

Semester control is carried out in the form of a semester exam.

The final grade in the course is determined:

– for disciplines with a form of exam, the final grade is the amount of all points received during the current control and the exam grade.

Current control: defense of laboratory work (54 points), written control work (6 points).

Semester control: Exam (40 points)

More detailed information on the assessment system is provided in technological card of the course.

An example of an exam card and assessment criteria.

Simon Kuznets Kharkiv National University of Economics  
Second (master's) level of higher education  
Specialty 122 "Computer sciences"  
Educational and professional program "Computer sciences".  
The course " Economic justification of IT projects "

### **Task 1 (diagnostic, 10 points).**

Compare the specifics of promoting an online clothing store page on social networks Facebook and Instagram .

### **Task 2 (diagnostic, 10 points).**

Propose and justify the parameters of targeted advertising for this page. Analyze the parameters for setting up targeted advertising on Facebook and Instagram .

### **Task 3 (heuristic, 20 points).**

Suggest the principles of Social Media Optimization for an online clothing store.

Approved at the meeting  
department of information systems  
Protocol No. \_\_ of " \_\_ " \_\_\_\_ 202

Examiner Yevhen HRABOVSKYI

Head of department Dmytro BONDARENKO

#### **Evaluation criteria**

The final marks for the exam consist of the sum of the marks for the completion of all tasks, rounded to a whole number according to the rules of mathematics.

The algorithm for solving each task includes separate stages that differ in complexity, time-consumingness, and importance for solving the task. Therefore, individual tasks and stages of their solution are evaluated separately from each other as follows:

#### **Task 1**

This task is evaluated on a 10-point scale.

A score of 10 points is given if the winner has fully compared the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram .

A score of 9 points is given if the winner compares the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . However, the answer contains certain inaccuracies in the definition of promotion parameters.

An assessment of 8 points is given if the winner compares the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . However, the answer contains errors in the justification of promotion parameters.

A score of 7 points is given if the winner compares the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . However, the answer contains certain inaccuracies in the description of the promotion mechanism.

A score of 6 points is given if the winner compares the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . However, the answer contains errors in the description of the promotion mechanism.

A score of 5 points is given if the winner compares the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . However, there is no description of the mechanism of promotion.

A score of 4 points is given if there are errors in the work comparing the specifics of the promotion of the page of the online clothing store in the social networks Facebook and Instagram . There is no description of the promotion mechanism.

A score of 3 points is given if the applicant prepared a standard answer, noted the headings, main elements of the answer, but did not disclose the topic, i.e. completed the task for 20% of the total volume.

The score is 1 point if the applicant made mistakes in the logic and description of the procedure for solving the problem.

A score of 0 points is given for not completing the task at all.

#### **Task 2.**

This task is evaluated on a 10-point scale.

A score of 10 points is given if the applicant fully defines and substantiates the parameters of targeted advertising. The parameters for setting up targeted advertising on Facebook and Instagram were analyzed .

A score of 9 points is given, the applicant defined and justified the parameters of targeted advertising, but there are insignificant inaccuracies in the justification of the main parameters.

An assessment of 8 points is given if the applicant has defined and substantiated the parameters of targeted advertising. However, there are errors in the justification of advertising parameters in the answer.

A score of 7 points is given if the applicant has defined and substantiated the parameters of targeted advertising. However, the answer contains certain inaccuracies in the description of the advertising mechanism.

A score of 6 points is awarded if the applicant has defined and substantiated the parameters of targeted advertising. However, the answer contains errors in the description of the advertising mechanism.

A score of 5 points is given if the applicant has defined and substantiated the parameters of targeted advertising. However, there is no description of the advertising mechanism.

A score of 4 points is assigned if the work contains errors in defining and justifying the parameters of targeted advertising. There is no description of the advertising mechanism.

A score of 3 points is given if the applicant prepared a standard answer, noted the headings, main elements of the answer, but did not disclose the topic, i.e. completed the task for 20% of the total volume.

The score is 1 point if the applicant made mistakes in the logic and description of the procedure for solving the problem.

A score of 0 points is given for not completing the task at all.

### **Task 3.**

This task is evaluated on a 20-point scale.

The assessment is made according to the formula:

$$OE = K3 \times OC3,$$

where

K3 - degree of completion of the 3rd task -  $K_i = (0...1)$ ;

OC3 – the maximum score for task 3,  $OC3 = 20$

K3=0 task not completed or completed with critical errors.

K3=1 task completed completely, without errors. The optimal image creation technology is used. Explanations are necessary.

K3=0.75 the task is completed, but the technology used is not optimal. Explanations are necessary

K3=0.5 task completed, without critical errors. Necessary explanations are not provided;

K3=0.25 the task is incompletely completed, without critical errors. Necessary explanations are not provided;

K3=0 task not completed or completed with critical errors.

The exam grade is calculated as the sum of grades for all three tasks.

## **RECOMMENDED LITERATURE**

### **Main**



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