

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

**ЗАТВЕРДЖЕНО**

на засіданні кафедри  
інформаційних систем.  
Протокол № 1 від 22.08.2023 р.

**ПОГОДЖЕНО**

Проректор з навчально-методичної роботи

Каріна НЕМАШКАЛО



**ОСНОВИ ІТ-БІЗНЕСА**

робоча програма навчальної дисципліни (РПНД)

Галузь знань  
Спеціальність  
Освітній рівень  
Освітня програма

12 "Інженерія програмного забезпечення"  
121 "Інженерія програмного забезпечення"  
перший (бакалаврський)  
"Інженерія програмного забезпечення"

Статус дисципліни  
Мова викладання, навчання та оцінювання

обов'язкова  
англійська

Розробник:  
к.е.н., доцент

підписано КЕП

Юлія ЧИРВА

Завідувач кафедри  
інформаційних систем

Дмитро БОНДАРЕНКО

Гарант програми

Олег ФРОЛОВ

Харків  
2024

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF  
ECONOMICS**

**APPROVED**

at the meeting of the Information Systems  
Department  
Protocol № 1 of 22.08.2023



**AGREED**

Vice-rector for educational and methodical  
work

Karina NEMASHKALO

**BASICS OF IT BUSINESS  
Program of the course**

Field of knowledge	<b>12 "Information technologies"</b>
Specialty	<b>121 "Software engineering"</b>
Study cycle	<b>first (bachelor)</b>
Study programme	<b>"Software engineering"</b>

Course status	<b>mandatory</b>
Language	<b>English</b>

Developers:  
PhD, Associate  
Professor

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Yuliia CHYRVA

Head of  
Information  
Systems  
Department

  
Dmytro BONDARENKO

Head of study programme

  
Oleg FROLOV

**Kharkiv  
2024**

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## INTRODUCTION

The modern life activity of mankind is closely related to the production of information and communications carried out through the use of devices, equipment and software. Information technologies have become a component of the life of the entire civilized part of society and already affect every person, organization and state. So, in a relatively short period of time, IT business from a sometimes secondary industry turned into one of the main drivers of the world economy, becoming a catalyst for tectonic changes and transformations in many other industries.

The purpose of the course: "Basics of IT business" is the formation of a system of special knowledge on the theoretical foundations of IT business and practical skills necessary to create and ensure the effective functioning of a company in the IT sphere, the successful creation and promotion of products and services.

Tasks of the course:

- research of the theoretical basics of IT - business as a direction of entrepreneurial activity;
- determination of the features of the current state of development of the world and domestic markets of information technologies;
- research of the mechanisms of creation and organization of the activities of IT-business companies, features of product and outsourcing companies;
- learning of the mechanism of formation of financial and economic results of the activity of IT companies;
- familiarization with pricing methods and marketing tools in the IT business;
- learning of methods of evaluating activity results and making business decisions in the IT sphere;
- familiarization with the content and variety of strategies in the field of IT;
- learning of assessment methods and means of risk reduction of the IT company's activity;
- mastering the methods of protecting intellectual property rights in the IT industry.

The subject of the course is the principles and regularities of technological business development, managerial decisions regarding the creation and management organization of an IT industry company.

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

Table 1

### Learning outcomes and competencies formed by the course

Learning outcomes	Competencies
LO 23	SC 10
LO 24	GC 2, GC 10, SC 9

where LO 23. Ability to document and present the results of software development.

LO 24. Ability to calculate the economic efficiency of software systems.

GC 02. Ability to apply knowledge in practical situations.

GC 10. Ability to act socially responsibly and consciously.

SC 09. Ability to evaluate and take into account economic, social, technological and environmental factors affecting the field of professional activity.

SC10. Ability to accumulate, process and systematize professional knowledge about creating and maintaining software and recognizing the importance of lifelong learning.

## **COURSE CONTENT**

### **Content module 1 Creation and support of the activities of IT business companies**

#### **Topic 1. IT - business as a direction of entrepreneurial activity**

1.1. IT business - essence, functions and benefits.

1.2. Types of IT companies, their advantages and disadvantages.

1.3. Factors of the internal and external IT environment of the company.

#### **Topic 2. Creation and organization of activities of IT business companies**

2.1. Types and mechanism of IT company registration in Ukraine.

2.2. Creation of an international company in the technological sector.

#### **Topic 3. Financial and economic results and business efficiency in the IT sphere**

3.1. Balanced Scorecard methodology.

3.2. KPI (Key Performance Indicator).

3.3. Key performance indicators of the IT department.

#### **Topic 4. Personnel management in the IT sphere**

4.1. Principles and styles of IT personnel management.

4.2. Stages of personnel management.

4.3. Motivation of IT personnel.

### **Content module 2 Company management and protection of intellectual property rights in the IT industry**

#### **Topic 5. Complex IT - monitoring and management of enterprise risks in the IT sector**

5.1. Concepts and types of IT monitoring.

5.2. Monitoring of IT infrastructure.

5.3. Monitoring of IT services.

5.4. IT monitoring systems: overview and basic requirements.

5.5. Risk as an economic category of the market economy.

5.6. Risks in IT business: essence, causes, consequences.

#### **Topic 6. IT management strategy - a company**

6.1. Strategic management: essence, object and subject.

6.2. Strategy in form and content, classification of IT company strategies.

#### **Topic 7. Protection of intellectual property rights in IT business**

7.1. Copyright: content and purpose.

- 7.2. Objects and subjects of copyright.
- 7.3. Copyright protection.
- 7.4. Objects and subjects of patent law.
- 7.5. Mechanism of registration of patent rights.
- 7.6. Protection of intellectual property rights for which a patent has been issued.

**Topic 8. Negotiations and organization of agreements in the IT sphere**

- 8.1. The essence, structure and features of contracts in the field of IT.
- 8.2. The main types of contracts in IT.
- 8.3. Software licensing, types of licenses.

The list of laboratory and practical classes in the course is given in the table. 2.

Table 2

**The list of laboratory studies**

Topic name	Content
Topic 1 Practical lesson 1. Laboratory work 1.	IT is a company like a social entity  Calculation of the cost of IT services according to the IDC method
Topic 2. Laboratory work 2.	The registration mechanism of FOP and LLC
Topic 3. Laboratory work 3.	Costs and financial and economic results of IT companies
Topic 4. Practical lesson 2.	Business game "Swan, Crab and Pike"
Topic 5. Laboratory work 4	Quantitative assessment of economic risk based on the application of sensitivity analysis, construction of a "decision tree", application of scenario analysis
Topic 6. Practical lesson 3.	Formulation of the mission, goals and portfolio analysis of the IT company's activities
Topic 7. Practical lesson 4.	Copyright and patent law as legal means of protecting intellectual activity in the IT industry
Topic 8. Laboratory work 5.	Calculation of the value of the rights to the object of intellectual property according to the royalty method and according to the method of exemption from royalties

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

Table 3

**List of self-studies**

Topic	Content
Topic 1	Study of lecture material. Study of approaches to the structuring of the IT services market and the structure of basic and extractive market segments according to the IDC method. Preparation for practical and laboratory classes.
Topic 2	Study of lecture material. Study of the differences between the first, second and third groups of the single tax (which are mainly applied by individual entrepreneur in the IT industry). Acquaintance with the model charter of a limited liability company. Preparation for laboratory work.

Topic 3	Study of lecture material. The study of methodical approaches to the calculation of costs, cost price, the price of IT services and products, evaluation of the effectiveness of the functioning of an IT company. Preparation for laboratory work.
Topic 4	Study of lecture material. Acquiring resume writing skills and learning team building strategies in an IT company. Preparation for practical training.
Topic 5	Study of lecture material. Analysis of types of risks and means of their leveling. Preparation for laboratory work.
Topic 6	Study of lecture material. Study of the mission and goals of the leading IT companies. Acquisition of skills in developing the mission and goals of the IT company. Preparation for practical training.
Topic 7	Study of lecture material. Familiarization with the Law of Ukraine "About Copyright and Related Rights". Preparation for practical training.
Topic 8	Study of lecture material. Studying the peculiarities of concluding contracts and the payment system in the IT sphere. Preparation for laboratory work. Preparation for the exam.

The number of hours of lectures, practical, laboratory classes and hours of self-study is given in the technological card of the course.

## TEACHING METHODS

In the process of the course, in order to acquire certain learning outcomes, to activate the educational process, it is envisaged to use such learning methods like:

Verbal (lecture-discussion (Topic 1, 3-6, 8), problem lecture (Topic 2, 7).

Visual (demonstration (Topic 1-8).

Practical work (Topic 1, 4, 6-7), case method (Topic 1, 4, 6-7).

Laboratory work (Topic 1 – 3, 5, 8), case method (Topic 1 – 3, 5, 8).

## 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 and laboratory classes and is aimed at checking the level of preparedness of the higher education applicant to perform specific work and is evaluated by the sum 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** includes current control and an exam.

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

**The final grade in the course** is determined:

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

During the teaching of the course, the following control measures are used:

Current control: defense of practical and laboratory works (50 points), 2 written control works (10 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  
First (bachelor's) study cycle  
Specialty "Software engineering"  
Study program "Software Engineering"  
Semester VIII

### EXAMINATION TICKET № 1

#### 1. Test task (table 4)

Table 4

#### Test tasks

1	The general functions of IT business are 1) resourceful, organizational, creative and innovative. 2) resourceful, creative, managerial. 3) organizational, stimulating, managerial. 4) stimulating, procurement management.
2	The advantages of IT business compared to others are 1) opportunities not to stop business during lockdowns. 2) annual growth in demand for software. 3) a small amount of initial capital investments. 4) all answers are correct.
3	The transfer by the company of part of the tasks or processes to third-party executors on the terms of the contract is this 1) franchising. 2) benchmarking. 3) outsourcing. 4) coworking.
4	IT consulting services include 1) increasing the manageability and transparency of the organization's activities due to the creation of IT infrastructure. 2) formation of a corporate IT strategy. 3) IT audit and improvement of manageability and transparency of the organization's activities due to the creation of IT infrastructure. 4) all answers are correct.
5	The following company has a product business model 1) SoftServe. 2) NIX. 3) Microsoft. 4) all answers are correct.
6	Which of the factors does not characterize the external environment of the IT company 1) political situation in the country. 2) the country's accession to the WTO. 3) crisis state of innovative activity of the organization.

	4) development of market infrastructure.
7	Among the factors of the internal IT environment - the company belongs 1) taxation system. 2) staff qualification level. 3) tariffs for energy resources. 4) the state of the environment.
8	Which group of factors of the external environment is at the same time an internal variable of the enterprise 1) economic factors. 2) technical factors and technology. 3) social factors. 4) political factors.
9	A complex of elements, types of activities and their corresponding institutions, which contribute to the uninterrupted movement of resources and funds, as well as create economic and organizational conditions for the functioning of entrepreneurship, is called 1) the macro environment of the firm's functioning. 2) market infrastructure. 3) internal environment. 4) the environment of indirect influence.
10	The IDC company offers the division of the IT services market into segments 1) related to design and operation. 2) basic and extractive. 3) infrastructure and consulting. 4) oriented towards support and training and outsourcing.
11	Consulting and practical assistance to clients-organizations in the creation of highly effective information systems, as well as providing adequate and professional service for them with the lowest total costs is 1) IT outsourcing. 2) IT consulting. 3) forfeiting. 4) education and training in the field of IT.
12	Advantages of LLC over unregistered business 1) trust from the bank. 2) simplification of work with clients. 3) attracting customers. 4) all answers are correct.
13	Ways of registration of individual entrepreneur 1) through administrative service centers. 2) online registration is possible through the Unified portal of state services "Diya". 3) through centers for providing administrative services and through the Unified State Services Portal "Diya". 4) at the notary at the location of the legal entity being created.
14	In the UK, the words Insurance, Bank, Credit Union, Group, Holding, Building Society, Royal and others can be used in the name of an IT company only after the permission of the relevant state authority 1) true. 2) is incorrect.
15	Substance is this 1) advantage of a profitable solution in favor of business owners. 2) expenses for ensuring the real presence of the company in the country. 3) the recipient of specified benefits arising from the implementation of the project. 4) natural persons who are permanently engaged in accounting on a legal basis.



16	<p>Companies are the object of IT personnel management</p> <ol style="list-style-type: none"> <li>1) top managers.</li> <li>2) developers and specialists in software testing.</li> <li>3) software engineers.</li> <li>4) all answers are correct.</li> </ol>
17	<p>The principle of price targeting is necessity</p> <ol style="list-style-type: none"> <li>1) on the part of the state, control the setting of prices, first of all, for the products of monopolistic enterprises.</li> <li>2) avoid the contradiction between the price level and the strategic goal and tactical goals of the enterprise.</li> <li>3) take into account the objective economic laws of market economy development (cost, demand and supply).</li> <li>4) clearly define the problems that should be solved with the help of prices.</li> </ol>
18	<p>What does pricing for computer equipment mean by the principle of ensuring the target profitability of sales</p> <ol style="list-style-type: none"> <li>1) such adjustment of the price of products so that it is consistent with the price of a similar product of the main competitor.</li> <li>2) setting prices for the product line in the form of a certain number of price points.</li> <li>3) the addition of a fixed percentage markup to the cost of products included in the competitive class of goods.</li> <li>4) setting such a price to obtain a profit that will be a certain share of the sales volume.</li> </ol>
19	<p>The company "IBM" started the production of powerful personal computers for business use and scientific research and set prices for them approximately half lower than those set for similar products by competitors. What pricing strategy did IBM use?</p> <ol style="list-style-type: none"> <li>1) prestigious.</li> <li>2) market penetration.</li> <li>3) according to the principle of "skimming the cream".</li> <li>4) on the basis of competition.</li> </ol>
20	<p>It is expedient to implement the task of increasing the sales of an IT company</p> <ol style="list-style-type: none"> <li>1) improve product quality.</li> <li>2) increase the efficiency of distribution.</li> <li>3) promote the spread of the brand.</li> <li>4) all answers are correct.</li> </ol>
21	<p>Modes of monitoring IT services</p> <ol style="list-style-type: none"> <li>1) active and passive.</li> <li>2) active, neutral, passive, permanent.</li> <li>3) active, round-the-clock, proactive.</li> <li>4) active, passive, proactive.</li> </ol>
22	<p>There are Nagios and Zabbix</p> <ol style="list-style-type: none"> <li>1) free IT infrastructure monitoring systems.</li> <li>2) commercial IT infrastructure monitoring systems with fixed functionality.</li> <li>3) commercial IT infrastructure monitoring systems of the platform type.</li> <li>4) mixed IT infrastructure monitoring systems.</li> </ol>
23	<p>There are characteristic features of economic risk in the IT sector</p> <ol style="list-style-type: none"> <li>1) statistics and uncertainty.</li> <li>2) uncertainty, dynamism and probability of achieving the desired result.</li> <li>3) the probability of not achieving the desired result, alternative and static.</li> <li>4) contradiction, alternative, uncertainty.</li> </ol>
24	<p>Strategic vision is related</p> <ol style="list-style-type: none"> <li>1) with an outline of the company's IT development directions.</li> <li>2) with an understanding of the reality of the existence of an IT company.</li> <li>3) with an outline of practical current actions regarding the functioning of the IT</li> </ol>

	company. 4) with the determination of the current profitable areas of IT activity of the company.
25	Specify the objects of the invention in the IT sphere 1) method and device. 2) the process of transformation of substances and strains of microorganisms. 3) trademark and geographical indication. 4) results of artistic design.
26	Which of the indicated persons is the primary subject of intellectual property rights in the field of IT 1) the author. 2) the inventor. 3) patent attorney. 4) an heir.
27	Copyright protection for a component of a computer program abroad is carried out in accordance with 1) Berne Convention on the Protection of Literary and Artistic Works. 2) Rome Convention. 3) Paris Convention. 4) Statute of Queen Anne.
28	Until what year will the patent be valid if the author submitted an Application for registration of the invention in Germany in 2005, but returned to Ukraine in 2009 and re-registered the invention 1) 2010. 2) 2029. 3) 2025. 4) 2009.

## 2. Heuristic task

Determine which tax system is more profitable frontend developer.

In average frontend developer earns 85000 hryvnias per month. Frontend developer is self-employed, so his expenses will be taxes and accountant services, as well as rent. The cost of accountant services is UAH 3000 per month. The cost of renting an office is 15 000 per month.

Determine:

1. How much will be the tax burden on backend developer on the general taxation system?
2. How much will the tax burden be backend developer on a single tax for 3 groups?

Write conclusions.

## 3. Heuristic task

3. Company A developed the computer game "Zombies", which is quickly gaining popularity. The company specializes in the development of computer games and does not have the appropriate production capacity and personnel for recording on CDs and the experience of selling products, so it commercializes the result of its intellectual activity by selling a license for the production and distribution of CDs.

Company A, as the copyright holder of the computer game Zombie, was approached by Company B, which would like to record and distribute the game Zombie on a CD-ROM basis. It is necessary to determine the cost of the license for the computer game "Zombies" using the method of royalties and exemption from royalties.

Conditions:

1. The term of the contract is 4 years.
2. Circulation: in the first year – 1050 copies;  
in the second year – 1900 copies;  
in the third year - 2500 copies.

For the fourth year - 3300 copies.

3. The cost (the price realized by company A) of one copy of a CD is 19 conventional units.
4. The royalty rate is 16%.

Protocol No. \_\_\_\_ dated " \_\_\_\_ " \_\_\_\_\_ 20\_\_ was approved at the meeting of the Department of Information Systems.

Examiner, Doctor of Economics, Assoc. Yuiia CHYRVA

Head of Department of Ph.D., Assoc. Oleksandr BONDARENKO

### Assessment criteria

The final grade for the exam tasks is the sum of the marks for each task.

**Stereotype task** is devoted to the solution of a logical-theoretical task according to the main definitions and provisions of the course. The main goal is to organize the terminological apparatus of the course according to the materials of the lecture part of the course. The form of conducting is test tasks. Each test contains 28 questions. Each question has only one answer option.

The correct answer to each test question is estimated at 0.5 points. The total number of points for the first task is defined as the sum of points for the answers to the test questions and can range from 0 to 14 points.

**The first and second heuristic tasks** are practical tasks aimed at solving typical professional tasks of a specialist in the basics of IT business and allow diagnosing the level of training and competence of the applicant of the course.

Assessment criteria for the second and third tasks of the examination ticket are as follows:

13 points – for a completely correctly completed task;

10 - 12 points - for a task performed with minor and insignificant errors (for each inaccuracy, the score is reduced by 1 point);

7 - 9 points - if the task is performed correctly in general, but not completely;

1 – 6 points – for a task performed with significant errors (for each error, the grade is reduced by 1 point);

0 points - the task was not completed at all.

## RECOMMENDED LITERATURE

### Main

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