

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



ІНФОРМАТИКА
робоча програма навчальної дисципліни

Галузь знань	<i>24 "Сфера обслуговування"</i>
Спеціальність	<i>242 "Туризм"</i>
Освітній рівень	<i>перший (бакалаврський)</i>
Освітня програма	<i>Туризм</i>
Статус дисципліни	<i>обов'язкова</i>
Мова викладання, навчання та оцінювання	<i>англійська</i>

Завідувач кафедри
інформатики та комп'ютерної техніки

Сергій УДОВЕНКО

Харків

2022

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



"APPROVED"

Vice-rector for Educational and Methodical Work

Karina NEMASHKALO

INFORMATICS

Syllabus of the educational discipline

Level of education	<i>24 Service sector</i>
Specialty	<i>242 Tourism</i>
Educational level	<i>first (bachelor)</i>
Educational program	<i>Tourism</i>

Course status	<i>Basic</i>
Language of teaching, studying and assessment	<i>English</i>

Head of the Department of
Informatics and Computer Engineering

Sergei UDOVENKO

APPROVED

by the Department of Informatics and Computer Engineering meeting
Protocol №1 dated on August 26, 2022

The developers are:

O.O. Tiutiunyk, Candidate of Technical Sciences, an associate professor, an associate professor of the Informatics and Computer Engineering Department,

N.O. Brynza, Candidate of Technical Sciences, an associate professor, an associate professor of the Informatics and Computer Engineering Department

Renewal and reapproval list of the syllabus of educational discipline

Academic year	Date of the Department meeting	Protocol №	Signature of the Department Head

Annotation of an academic subject

The problem of decision-making is one of the key ones in the field of modern science and practice of the service sector, since the central point of the management process is the decision-making procedure, which involves choosing the best way to distribute work and then combining them into a single complex in order to ensure optimal performance of tasks and achievement goals. That is why it is important to form the competences of future tourism specialists in the field of application of specialized software related to organization and activities in future professional tasks.

The educational discipline "Informatics" is necessarily a youth discipline and is studied according to the curriculum for the training of specialists of the educational degree "bachelor" for the specialty 242 "Tourism", the educational program "Tourism" of all forms of education.

The program of the academic discipline involves teaching in the form of lectures, laboratory classes and independent work of students. For the practical assimilation of the main topics of the discipline, laboratory classes, individual work and consultations are conducted with the use of personal computers, local networks and the Internet in computer classes and remotely at Khneu named after S. Kuznets. All types of classes are provided with the necessary printed and electronic methodical materials.

In order to improve the effectiveness of the study of the academic discipline, students can use the distance learning system of Khneu named after S. Kuznets.

The purpose of teaching the educational discipline is the formation in future specialists of a system of competences in matters of architectural principles of building and functioning of personal computers and computer networks, algorithmization and organization of computing processes, software, as well as acquiring competence in working with the help of modern computer technology and effective use of modern technologies in professional activities to solve various economic problems.

The task of studying the discipline is the theoretical and practical training of future specialists in the use of modern information technologies by future specialists in the specialty 242 Tourism.

The object of the educational discipline is the use of information systems and technologies in the economy.

The subject of the academic discipline is software application technology for solving economic problems.

Characteristic of an academic subject

Course	1
Semester	1
Number of credits ECTS	5
Final control form	Credit

Structural and logical scheme of an academic subject

Previous disciplines	Following disciplines
School course of informatics	All disciplines

Competences and results of studying under this subject

Competences	Results of studying
GC01. The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine	RS9. Organize the process of serving consumers of tourist services based on the use of modern information, communication and service technologies and compliance with quality standards and safety norms
GC 04. Ability to critical thinking, analysis and synthesis	
GC 06. Ability to search, process and analyze information from various sources	
GC 07. Ability to work in an international context	
GC 08. Skills in using information and communication technologies	
GC 09. The ability to identify, pose and solve problems	
GC 11. Ability to communicate in a foreign language	
GC 12. Interpersonal skills	
GC 13. Ability to plan and manage time	
GC 14. Ability to work in a team and autonomously	
SC 1. Knowledge and understanding of the subject area and understanding of the specifics of professional activity	
SC 3. The ability to analyze the recreational and touristic potential of territories	
SC 5 Understanding of modern trends and regional priorities of the development of tourism in general and its individual forms and types	
SC 7. The ability to develop, promote, implement and organize the consumption of a tourist product	
SC 8. Understanding the principles, processes and technologies of the organization of the work of the subject of the tourism industry and its subsystems	
SC 9. The ability to ensure the safety of tourists in normal and complex force majeure circumstances	
SC 10. The ability to monitor, interpret, analyze and systematize tourist information, the ability to present tourist information material	
SC 11. The ability to use information technologies and office equipment in the work of tourist enterprises	
SC 12. The ability to determine individual tourist needs, use modern tourist service technologies and conduct claim work	
SC 13. The ability to cooperate with business partners and clients, the ability to ensure effective communication with them	
SC 14. The ability to work in an international environment based on a positive attitude towards differences in other cultures, respect for diversity and multiculturalism, understanding of local and professional traditions of other countries, recognition of intercultural problems in professional practice	
SC 15. The ability to act in the legal field, to be guided by the norms of legislation	

CK16. Ability to work with documentation and carry out settlement operations as a tourist business entity	
GC 01. The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine	PH13. To establish contacts with experts in tourism and other industries
GC 02. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies, to use various types and forms of motor activities for active recreation and leading a healthy lifestyle	
GC 03. The ability to act socially responsibly and consciously	
GC 04. Ability to critical thinking, analysis and synthesis	
GC 05. The desire to preserve the environment	
GC 08. Skills in using information and communication technologies	
GC 09. The ability to identify, pose and solve problems	
GC 10. Ability to communicate in the national language both orally and in writing	
GC 11. Ability to communicate in a foreign language	
GC 12. Interpersonal skills	
GC 13. Ability to plan and manage time	
SC3. The ability to analyze the recreational and touristic potential of territories	
SC 8 Understanding the principles, processes and technologies of the organization of the work of the subject of the tourism industry and its subsystems	
SC 11. The ability to use information technologies and office equipment in the work of tourist enterprises	
SC 14. The ability to work in an international environment based on a positive attitude towards differences in other cultures, respect for diversity and multiculturalism, understanding of local and professional traditions of other countries, recognition of intercultural problems in professional practice	
SC 15. The ability to act in the legal field, to be guided by the norms of legislation	
SC 16. Ability to work with documentation and carry out settlement operations as a tourist business entity	

Academic subject program

Content module 1. Using the MS Office package to solve economic problems

Topic 1. Theoretical foundations of economic informatics

1.1 Information and its properties.

Information, data and knowledge. Forms of information presentation, dimensions and quality of information. Information classification and coding systems. Concept of economic infor-

mation. The concept of data. Basic data structures. Information environment, information procedures, information process. Peculiarities of obtaining, processing, analyzing and using economic information.

1.2. Technical base of modern information technologies.

Basic concepts, composition, structure of information systems software: system and application support and programming tools. The evolution of the development of system software and programming tools, their comparative characteristics. Classification of information systems.

Topic 2. Technologies for creating and editing text documents

2.1. Creating and editing documents in MSWord.

Ways of entering document text, text formatting. Saving and closing documents, updating documents. Document page layout, page numbering and editing of footers. Creation of the structure of documents, organization of automatic formatting of document content, adding hyperlinks to the document. Check the spelling of the document. Editing the document using the search and replace mechanism, making notes in the document. Entering a password in a document.

2.2. Work with graphic objects in MS Word.

Creation of figures and inscriptions in documents, use of the drawing library. Creating and editing formulas. Creating and editing tables in MS Word. Formatting tables, editing table cells, inserting formulas into the table.

2.3. Searching for information on the Internet.

Types of information and evaluation of information. Search engines and their classification. Search for documents and files with different extensions. Search software. Search for legislative acts. Search for work and vacancies. Search for organizations and information about a person. Creation of information search reports and their formatting.

Topic 3. Using a spreadsheet processor to solve economic problems

3.1. Use of MS Excel functions in calculations.

Creation of electronic tables. Data types in MS Excel. Data formatting in spreadsheets. Organization of calculations in MS Excel. Absolute and relative references. Using cell and range names in formulas. Application of the wizard of functions for economic calculations and processing of text arrays. Working with spreadsheet data. Multi-table information processing. Graphic presentation of information when solving economic problems

3.2. Analysis of tabular data using MS Excel.

Data processing technology in the environment of table processors using built-in operators and functions. Sorting and searching data in lists. Using forms to enter and edit lists. Using filters and sorting for data analysis. Table processing functions as lists of data, rules for their use. Construction of summary tables. Application of subtotals and slices for data analysis. Data consolidation. Conditional formatting of spreadsheets. Analysis and forecasting of data using graphical means of a spreadsheet processor.

Content module 2. Basics of Web design

Topic 4. Computer security and information protection organizations

4.1. Informational security.

The main directions and purpose of information protection: confidentiality of information, integrity of information and related processes, access to information.

General measures for the protection of information and computer equipment: identification of users, authorization procedures, protection of files and electronic documents, etc. Using a proxy server and firewalls. The technique of "digital signatures". Information protection by encryption.

4.2. Information protection systems.

Comprehensive electronic business security systems. Computer viruses and methods of combating them. Antivirus programs. Computer piracy and methods of combating it. Using firewalls while surfing the Internet. Information encryption methods.

Topic 5. Basics of Web design

5.1. The essence and social aspects of Web design.

General information about Web technologies, the concept of construction. E-mail, mailing lists and means of business communication, postal services. Online news.

5.2. Creation of web pages.

Tools and methods of building Web pages. Creation of web pages in HTML language. Editing of Web pages using basic HTML elements. Formatting a Web document using CSS. Layout of Web sites. Block and adaptive layout of sites. Using programs with visual means of creating Web pages and Web sites. Publication of Web sites on the Internet. Static and dynamic websites. Dynamic design of Web pages with the help of animation effects.

Content module 3. Design and use of databases and data warehouses in the economy

Topic 6. Software tools for working with databases and data warehouses

6.1. The concept of a database.

The concept of a database (DB). Architecture of database management systems (DBMS). Functional capabilities of DBMS. Data models. Subject area. Database architecture. Concept of DB scheme, SPARS standard. Stages of database design.

6.2. A relational database.

Logical and physical independence of data in the database. The main objects of the database and their characteristics. Relational algebra and relational calculus. Normalization of relations. Data processing anomalies. Rules for the formation of normal forms. Design stages of relational databases. Database planning. Analysis of database requirements. Conceptual, logical and physical design.

The entity-relationship data model. Entities, attributes, types of relationships between entities and their characteristics. Simplification of the conceptual model. Transformation of ER-diagrams into relational structures. Tools for automating database design. CASE technologies. Validation of normalization, integrity, and user transactions.

6.3. Construction of relational database objects.

SQL structured query language. Purpose, general characteristics, features of use and technology for creating SQL queries.

Instrumental and software tools for creating user interfaces. The form is the main object of entering and viewing database data in the user interface. Publication of information using reports.

6.3. Data repositories.

Software and tools for creating data warehouses. Star and Snowflake data stores. Basic operations in the course of working with multidimensional models of data warehouses. Software query processing tools for extracting information from the data warehouse.

Technology of integrated processing and collective access to information resources in the office suite of programs. Technology of operational analysis of OLAP data. The technology of using MSQUERY data source integration programs.

Topic 7. Prospects for the development of information technologies

Development of technologies of integration and homogeneous information resources. OLAP systems of complex data analysis, including hidden development trends. Intelligent data analysis systems. Integration of databases, Web technologies and technologies of text systems. Development of object-oriented database, geo-information, temporal and multimedia information systems. Development of deductive databases based on combining technologies of expert systems and databases. Development of user application development technologies. Technologies of distributed processing of information and software for the organization of cloud computing.

The list of laboratory classes, as well as questions and tasks for independent work is given in the table "Rating plan of educational discipline".

Methods of teaching and learning

The discipline "Informatics" uses the following teaching and learning methods:

In topics 1-7: problematic lectures and laboratory work.

In the case of distance education or the use of distance learning technologies, lectures and laboratory classes are held online in the ZOOM video conference system.

Topics 1-7 use such teaching methods as problem-based lectures, discussions, work in small groups.

Procedure for assessing studying results

Khneu named after S. Kuznets uses a cumulative (100-point) evaluation system. The evaluation is carried out according to the following types of control:

1) Current control

Current control is carried out during the semester during lectures, laboratory classes, test tasks and control works and is evaluated by the sum of points scored. The maximum number of points based on the results of monitoring the current academic performance is 60 points, this amount of points allows the student to receive credit.

Control of students' assimilation of educational material during lectures is carried out by concentrating students' attention by asking questions based on previously studied material related to the topic of the lecture.

Assessment of laboratory work includes the defense of laboratory work in accordance with the plan of the educational discipline. The total number of points is 33.

Evaluation of lecture material - express survey - 8 points.

The student's independent work includes homework. The grade for homework is given by the student if the assignment is completed without errors. The total number of homework assignments is 4. The total number of points is 20.

Test control is carried out on a computer using the distance learning system in automatic mode. The tests consist of 20-30 tasks and are limited by the time of their completion. The student has only one attempt to complete the test tasks. The maximum score for completing test tasks by modules is 15 points.

Evaluation and conducting of tests is carried out using the distance learning system, the test for each thematic module includes theoretical and practical tasks, and the total number of points for tests in content modules is 24 points.

The grade for intermediate test and control tasks is issued after the end of the calendar period allocated for the task.

2) Final control

The final control is carried out in the form of a semester credit. The credit is given as the total sum of points obtained by the results of current and modular control. The maximum amount is 100 points; the minimum amount that allows a student to receive credit is 60 points. Points are awarded using the rating scale:

Forms of evaluation and distribution of points are given in the table "Rating-plan of an academic subject" of the discipline.

Rating-plan of an academic subject

Topic	Forms and types of education		Forms of evaluation	Max point
Topic 1,2, 3	<i>Classroom work</i>			
	Lecture	Topic 1. Modern information technologies and their use in economics. Using a spreadsheet to solve economic problems		

Topic 2	Laboratory work	Laboratory work 1. Creating and editing documents in MS Word		
	Individual work			
	Questions and tasks for individual study	Performing practical tasks on searching for information on the Internet and text formatting	Home task	5
Topic 3	Classroom work			
	Laboratory work	Laboratory work 2. Use of MS Excel functions in economic calculations	Laboratory work (protection)	8
	Laboratory work	Laboratory work 3. Analysis of tabular data using MS Excel	Laboratory work (protection)	8
	Individual work			
	Questions and tasks for individual study	Search, selection and review of literary sources on a given topic	Home task	5
			Home task	5
			Home task	5
			Tests for current work	5
			Written control work	8
Topic 4, 5	Classroom work			
	Lecture	Lecture 2, 3. Basics of Web design		
	Laboratory work	Laboratory work 4. Creation and formatting of Web documents by means of HTML		
	Laboratory work	Laboratory work 5. Responsive site layout and placing the site on the Internet	Laboratory work (protection)	9
	Individual work			
	Questions and tasks for individual study	Search, selection and review of literary sources on a given topic	Tests for current work	5
			Written control work	8
Topic 6, 7	Classroom work			
	Lecture	Lecture 4. Construction of relational database objects		
	Laboratory work	Laboratory work 6. Construction of relational database objects		
	Laboratory work	Laboratory work 7. Creating a database. Filling the database. Constructing queries		
	Laboratory work	Laboratory work 8. Construction of forms and reports	Laboratory work (protection)	8
	Individual work			
	Questions and tasks for individual study	Search, selection and review of literary sources on a given topic	Tests for current work	5
			Written control work	8

Recommended literature

Basic resources

1. Informatics in the field of communications [Electronic resource]: educational and practical guide: in 3 parts. Part 1. Creation and editing of text documents and presentations / S. G. Udovenko, O. V. Teslenko, V. A. Zathej and others. ; in general ed. Dr. Tech. Sciences, Professor S. G. Udovenko. – Kharkiv: KHNEU named after S. Kuznets, 2018. – 259 p.

2. Informatics in the field of communications [Electronic resource]: educational and practical guide: in 3 hours Part 2: Data processing and analysis / S. G. Udovenko, O. V. Teslenko, N. O. Brynza [and others. .]; in general ed. S. G. Udovenko; Simon Kuznets Kharkiv National University of Economics. - Electron. text data – Kharkiv: KHNEU named after S. Kuznets, 2019. - 249 p.

Optional resources

3. Microsoft Assess 2016: study guide in electronic form / Compilers V.O. Nelyubov, Yu.Yu. Squirrel Uzhgorod: DVNZ "UzhNU", 2019. 73 p.

4. Nelyubov V. O., Kurutsa O. S. Fundamentals of computer science. Microsoft Excel 2016: Tutorial. Uzhgorod: DVNZ "UzhNU", 2018. - 58 pp.: illustrations.

5. Nelyubov V. O., Kurutsa O. S. Fundamentals of computer science. Microsoft Word 2016: training manual in email in the form / V. O. Nelyubov, O. S. Kurutsa // Uzhhor. national University, Information Center technical – Uzhhorod: DVNZ "UzhNU", 2018. – 96 p.: illustrations.

Information resources

6. Site of personal educational systems Khneu named after S. Kuznets. [Electronic resource]. – Access mode: <https://pns.hneu.edu.ua/course/view.php?id=7698>.

7. Informatics and computer technology [Electronic resource]. – Access mode: <https://nmetau.edu.ua/file/130.pdf>.

8. Handbook of HTML tags [Electronic resource] - Access mode: <https://css.in.ua/html/tags>

9. Information systems and technologies in the hotel, restaurant and tourism business [Electronic resource]: textbook for students. University / M. M. Skopenia and others. ; under the editorship Ph.D. Prof. M. K. Sukacha and Ph.D. Assoc. M. M. Skopenia. – Kyiv: Lira-K, 2019. - 764 p. - ISBN 978-617-7320-35-6.