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

ПОГОДЖЕНО
Проректор з навчально-методичної
роботи
_____ Каріна НЕМАШКАЛО

УПРАВЛІННЯ АРХІТЕКТУРОЮ ПІДПРИЄМСТВА

робоча програма навчальної дисципліни (РПНД)

Галузь знань	**12 "Інформаційні технології"**
Спеціальність	**126 "Інформаційні системи та технології"**
Освітній рівень	**другий (магістерський)**
Освітня програма	**"Інформаційні системи та технології"**

Статус дисципліни	**вибіркова**
Мова викладання, навчання та оцінювання	**англійська**

Розробники:
доцент, канд. техн. наук   підписано КЕП   Микола КАРПЕНКО

Завідувач кафедри
інформаційних систем   _____   Дмитро БОНДАРЕНКО

Гарант програми   підписано КЕП   Олександр КОЛГАТІН

Харків
2024

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS

APPROVED
at the meeting of the department
information systems
Protocol No. 1 dated August 27, 2024

AGREED
Vice-rector for educational and
methodological work
Karina NEMASHKALO

ENTERPRISE ARCHITECTURE MANAGEMENT

work program of the academic discipline (RPND)

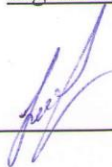|	
Field of knowledge	**12 " Information technologies "**
Specialty	**126 " Information systems and technologies "**
Study cycle	**second (master's)**
Study programme	**"Information systems and technologies "**

Course status	**elective**
Language	**Englisch**

Developers:
Cand. Sc. (Technical),
Associate Professor   digital signature   Mykola KARPENKO

Head of the Department
information systems   Dmytro BONDARENKO

Head of Study
Programme   digital signature   Oleksandr KOLGATIN

Kharkiv
2024

INTRODUCTION

The educational discipline "Enterprise Architecture Management" will be useful to future managers and executors of information systems development projects, primarily during the analysis and architectural construction of business structures based on modern information technologies.

The purpose of the educational discipline:
expansion and deepening of theoretical knowledge and applied abilities and skills regarding basic concepts and definitions in the field of architectural construction of business structures, analysis of architectural construction of business structures, acquisition of skills to build an effective IT architecture in stages, development of a business strategy for the use of information technologies, development of the IT budget of the enterprise, management architectural process, application of communication and information technologies in the process of preparation, adoption and implementation of management decisions, application of acquired skills in practical activities related to information policy.

The tasks of studying the discipline are the formation of modern theoretical and practical knowledge, abilities and skills in the analysis and architectural construction of business structures based on IT solutions.

The subject of the discipline is the regularities and processes of increasing the efficiency of the company's core business with the help of information technologies.

The object of study of the discipline are processes that reflect various aspects of the analysis and architectural construction of business structures based on IT solutions.

The results of training and competence formed by the educational discipline are defined in Table 1

Table 1

Learning outcomes and competences formed by the educational discipline

Learning outcomes	Competences that must be mastered by a student of higher education
LO01	GC01
LO07	GC01, SC02, SC03
LO12	GC01, GC03, SC02, SC03

Note.

LO01. Searching for necessary information in scientific and technical literature, databases, other sources, analyse and evaluate this information.

LO07. Making a grounded choice of project solutions and design a service-oriented information architecture of the enterprise (institution, organisation, etc.).

LO12. Improving the information system on the base of business processes analysis.

GC01. Ability to abstract thinking, analysis and synthesis.

GC03. Ability to communicate with representatives of other professional groups at different levels (with experts from other fields of knowledge/types of economic activity).

SC02. Ability to formulate requirements for life cycle stages of service-oriented information systems.

SC03. Ability to design information systems taking into account the specifics of their purpose, incomplete/insufficient information and conflicting requirements.

COURSE CONTENT

Content module 1. Basics of enterprise architecture

Topic 1. Business and information technologies.

The relevance of the issue from the point of view of changing the role of IT in business and society. Business strategy and information technologies. The relationship between business needs and benefits from using IT. The main elements and stages of IT strategy development. Connection of business strategy and IT strategy. Process, order of development and management of IT strategy. Organizational structures, participants and roles in the process of creating an IT strategy. Financial decision-making tools. Strategy in the field of IT personnel and sourcing.

Topic 2. IT budgets and new technologies.

Trends in the world market of information technologies. Dynamics of IT budgets. The latest technologies. We summarize the advantages of having an architecture and a strategy. Architecture documentation practice

Topic 3. Principles, models and standards of the enterprise's business architecture.

Enterprise architecture. Integrated concept of enterprise architecture. Architecture and IT portfolio management. Principles, models and standards within the enterprise architecture. Business architecture. Basic models and tools for describing business architecture. Models and tools for describing information architecture. Context and basic elements of application architecture. Application portfolio management models and tools. Impact of application architecture on infrastructure. Technological architecture (infrastructure architecture). Context and main elements of technological architecture

Topic 4. The structure and model of Gartner's IT architecture description.

The context of enterprise architecture development. Zachman's model. The structure and model of Gartner's IT architecture description. META Group methodology. Model "4 + 1" representation of architecture. Strategic model of SAM architecture. Architectural concepts and techniques of Microsoft.

Content module 2. Architectural process control

Topic 5. Management and control of the architectural process.

Architecture development process: goals and objectives. General diagram of the architectural process. Directions of architecture development: "top-down" or "bottom-up".

Topic 6. Implementation of the results of the architecture development project.

Architecture development process: management and control, gap analysis, implementation. Instrumental means and technology monitoring. Intellectual property and software licensing.

The list of practical (seminar) / laboratory studies in the course is given in table 2.

Table 2

The list of practical (seminar) / laboratory studies

Name of the topic and/or task	Content
Topic 1 Laboratory work 1.	Architecture standards and models for describing the information architecture of the enterprise
Topic 2. Laboratory work 2.	Analysis of the main methods of describing the enterprise architecture and choosing the optimal one
Topic 3 Laboratory work 3.	The process of developing the enterprise architecture
Topic 4. Laboratory work 4.	Modeling and development of enterprise architecture at different levels of ARIS representation
Topic 5, 6 Laboratory work 5.	Study of the ARIS tool system and its application for the development of enterprise architecture .

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
Task 1. Architecture documentation practice	Documenting the architecture of the software system, documenting the development processes, standards and tools when choosing the software architecture; templates and styles; notations and support tools.
Task 2. Principles, models and standards within the enterprise architecture. Models and modeling.	System model. Conceptual data models. Application architecture. Interface models. Model of working with events.
Task 3. Financial decision-making tools.	Principles and basic methods of financial analysis (projects). Risk assessment methods.
Task 4. Context and main elements of application architecture	Goals of architecture. Architecture design. Components. Drawing up a plan for the implementation of the model of the subject area of the software. Variants of building project models. Classification of architecture. Architectural patterns and styles. Combination of architectural styles. Component architecture. Multi-layered architecture. Service-oriented architecture. Static and dynamic diagrams in software architecture design.

The number of hours of lectures, practical (seminar) studies and hours of self-study is given in the technological card of the course.

TEACHING METHODS

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

Verbal (lecture (Topic 1-4, 6), problematic lecture (Topic 5).

In person (demonstration (Topic 1-6).

Laboratory work (Topic 1 - 6).

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, practical, laboratory and seminar 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 includes current control and assessment of the student .

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

The final grade in the course is determined:

− for courses 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: Laboratory works (48 points), written control works (12 points).

Semester control: Grading including 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.

Semyon Kuznets Kharkiv National University of Economics

The second (master's) level of higher education

"Information systems and technologies" specialty.

Educational program "Information systems and technologies".

Educational discipline "Enterprise Architecture Management"

Complete the following tasks for this subject area.

Task 1. financial tools for evaluating the effectiveness of investments in the development of enterprise architecture.

Task 2. Business architecture description models and their differences.

Task 3. Zachman's model and its main components.

Approved at a meeting of the information system department
No._____from "____"_____20____year.

Examiner   Mykola KARPENKO

Head of the department   Oleksandr BONDARENKO

Evaluation criteria

The examination ticket includes the project stakeholder analysis task and consists of three tasks. The final grade for the exam is the sum of the marks for each task. In general, the completed examination work is evaluated on a 40-point scale. Answers to questions must be clear, reasoned, with unambiguous interpretation. Ambiguously interpreted answers are not counted as correct.

Task 1 tests competences in creating a product vision, task 2, 3 - competences in defining requirements for a software system in the form of user stories and creating acceptance criteria for them.

Task 1 is evaluated from 0 to 15 points. For each of these tasks, the student receives an assessment according to the following criteria:

Max. how many points	The name of the task element being evaluated
15 points	for a completely correctly completed task
12-14 points	for a task performed with minor inaccuracies and minor errors
9-11 points	if the task is completed correctly in general, but not completely
1-8 points	for a task performed with significant errors
0 points	if the task is not completed at all

Task 2 is evaluated from 0 to 10 points. For each of these tasks, the student receives an assessment according to the following criteria:

Max. how many points	The name of the task element being evaluated
10 points	for a completely correctly completed task
8-9 points	for a task performed with minor inaccuracies and minor errors
5-7 points	if the task is completed correctly in general, but not completely
1-4 points	for a task performed with significant errors
0 points	if the task is not completed at all

Task 3 is evaluated from 0 to 15 points. For each of these tasks, the student receives an assessment according to the following criteria:

Max. how many points	The name of the task element being evaluated
15 points	for a completely correctly completed task
12-14 points	for a task performed with minor inaccuracies and minor errors
9-11 points	if the task is completed correctly in general, but not completely
1-8 points	for a task performed with significant errors
0 points	if the task is not completed at all

RECOMMENDED LITERATURE

Main

1. Butenko Tetyana Andriivna Siriy Volodymyr Mykolayovych "Information systems and technologies: a study guide". Kharkiv: KHNAU named after V.V. Dokuchaeva, 2020. 207 p.

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2. Tararak V.D. T19 "Architecture of computer systems: a study guide". - Zhytomyr: Zhdtu, 2018. - 383 p.
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3. Антоненко О. В., Бардус І. О. «Архітектура комп'ютера та конфігурування комп'ютерних систем (на основі фундаменталізованого підходу) : навч. посіб». –

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2. Denisova O.O. Modeling of adaptive management of enterprise architecture / O.O. Denisova // Information systems and economics; monograph. — K: KNEU, 2012.

3. James G. A. Structure of enterprise architecture. Gartner: development, 2005 / G. A. James, R. A. Handler, E. Lapkin, N. Hall. — Gartner code: G00130855, 2005.

4. Galaktionov V.I. System architecture and its place in enterprise architecture / V.I. Galaktionov //Director 1C, No. 05. — 2002.

5. A. V. Boychenko Fundamentals of open information systems / A. V. Boychenko, V. K. 5. Kondratiev, E. N. Filinov. M Izd. Central EOAI, 2004.

Information resources

1. Zachman Framework.-Access mode: http://en.wikipedia.org/wiki/Zachman_FrameworklFEAD's New Sections on Services Orientation. - Access mode: http://www.enterprisearchitecture.info/EA_Services-Oriented Enterprise.htm.

2. Welcome to TOGAF™ Version 9 - The Open Group Architecture Framework. - Access mode: http://www.opengroup.org/architecture/togaf9-doc/arch/ .

3. Microsoft Architecture Overview. - Access mode: http://msdn.microsoft.com/enus/library/ms978007.aspx .